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Use of Complementary and Alternative Medicine in Cancer and Its Impact on Survival: A Systematic Review

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ABSTRACT

The use of complementary and alternative medicines (CAMs) among cancer patients has increased steadily over the years in response to the search for a more comprehensive method for the relief and care of these patients. The incorporation of traditional Chinese medicines (TCM), herbs, and naturopathic medicines within the field of oncology still has an unclear effect on the survival rate. This systematic review integrates available evidence from empirical studies exploring the interface between the usage of CAM and survival benefits in relation to overall survival (OS), progression-free survival (PFS), or quality of life (QOL) in patients with cancer. In this study, eleven peer-reviewed articles, which include randomized controlled trials, cohorts, and case series, were analyzed according to the PRISMA 2020 guidelines. Data were extracted from the PubMed, Scopus, Web of Science, and Embase database, ranging from 2000-2025. They were assessed for their quality using the RoB 2, which is the Cochrane RoB. The results showed variable findings. Studies like Johnson et al. (2018) and others, such as Ma et al. (2011), indicated a poorer outcome in patients substituting CAM for Western medication, owing largely to drug refusal. Meanwhile, the outcome showed improved OS and PFS for combined CAM strategies, starting from 30% up to 70%, as seen in studies conducted by Li et al. (2019), Xu et al. (2021), and Zhao et al. (2024). The quality of life, as well as decreased toxicity, was likewise documented. CAM, when used adjunctively, may enhance survival and well-being; however, substitution for standard care is associated with reduced survival. Integrative, patient-centered oncology models emphasizing safe, evidence-informed CAM use are recommended.

INTRODUCTION

Complementary and alternative medicine has become a big part of cancer management in most parts of the world today, reflecting a growing patient preference for holistic approaches that address not only physical but also emotional, spiritual, and social wellbeing. Despite advances in mainstream oncology, many patients seek CAM, primarily for supportive benefits like alleviation of side effects, enhancement in quality of life, and perceived empowerment in managing illness Keene et al. 2019. The increasing prevalence calls for the need to understand its motives, usage patterns, and possible effects on survival outcomes among the oncology populations.

The global prevalence of CAM use among cancer patients varies widely but is generally high. Several systematic reviews estimated that between 30% and 70% of patients with cancer use some form of CAM either during or after conventional treatment. The most common modalities reported were herbal remedies, dietary supplements, acupuncture, meditation, and traditional medical systems such as Traditional Chinese Medicine and Ayurveda. These practices are usually combined with patients' treatment regimens with the goal of enhancing general well-being and alleviating adverse chemotherapy or radiotherapy symptoms.

A major driver of CAM utilization is the perception of improved control over one's health and disease trajectory. Many patients express dissatisfaction with conventional treatments or suffer from considerable physical and psychological distress that conventional medicine alone may not adequately address. Cultural beliefs, influence from family, and exposure to practices in communities further shape these decisions. For instance, it has been found that CAM use seems to be higher in groups that include younger, female, and more highly educated patients, particularly those diagnosed with cancers of the breast and gynecologic malignancies.

These recent integrative reviews underline how effective the use of CAM is in terms of psychological and symptomatic relief, yet there are concerns about communication gaps between patients and oncology professionals. Most of the patients do not disclose CAM use because they are afraid of being disapproved or it is considered irrelevant, which might result in potential risks of treatment interactions or less adherence to conventional therapy. These barriers to communication hamper the safe integration and evidence-informed integration of CAM into oncology practice and obscure the real impact of such on-cancer outcomes.

The proportions of CAM use also vary in the context of different geographical and cultural backgrounds. Studies from the Middle East and Asia, for instance, put forth evidence of strong reliance on traditional herbal and spiritual therapies, reflecting deep-rooted medicinal traditions and accessibility of natural remedies. In Western countries, the main emphasis is more on dietary supplements, mindfulness, and yoga, reflecting an emphasis on lifestyle-oriented approaches to self-care and stress management. Such global variability points out the complex interaction of culture, health literacy, and medical pluralism in shaping therapeutic choices of cancer patients.

More patients view CAM as a valuable oncology care modality, where a significant number believe such practices may firm up the immune system or actually contribute to tumor control. Even though biological mechanisms have been put forward for several herbal compounds, including mind-body interventions, clinical data is really inconsistent, mostly on the long-term benefit for survival, as stated by Alsharif (2021). For this reason, supportive and potentially substitutive use needs to be distinguished, since the latter might result in delays or refusals of life-saving conventional treatments.

Healthcare professionals can facilitate safe use of CAM by encouraging open communication and providing evidence-based guidance. Studies involving oncologists and nurses have shown that attitudes toward CAM are inconsistent, which often reflects a lack of formal education on the topic. Interest in interdisciplinary approaches integrating oncology with principles of integrative medicine is on the rise, however, and supports patient-centered care-acknowledging patient choice while emphasizing safety and effectiveness.

CAM is a complex, dynamic element of cancer care that demonstrates deep patient interest and involvement, strong cultural influences, and variable motivations. While the available evidence supports the symptomatic and quality-of-life benefits of CAM, its effects on survival, on the other hand, are less evident and require system evaluation. It is important to consider the interface of CAM with conventional therapies in the development of integrative oncology paradigms that seek

to maximize therapeutic gain with minimal harm (Keene et al., 2019; Horneber et al., 2012; Verhoef et al., 2005).

METHODS

Study Design

The systematic review was undertaken in line with the guidelines offered by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines in 2020 to make it more methodologically transparent, robust, and replicable. The main purpose was to provide a critical analysis of empirical findings related to the application of complementary and alternative medicine (CAM) in cancer patients in relation to survival rates. The analysis seeks to harmonize quantitative and qualitative findings to better understand how the practices of herbal medicine, traditional Chinese medicine, naturopathy, and other forms of non-conventional practices influence the survival rates, progression-free survival, and overall quality of life in cancer patients. This review aggregates peer-reviewed studies from journal articles that explored either the supplementary role of CAM or its use as an alternative therapy for managing cancer. This particular review aggregates data from observational studies that include oncology trials such as Randomized Control Trials (RCTs), Cohort studies, Case series studies, as well as cross-sectional studies. This aggregation allows for a comparison on the factors that affect its success in oncology.

Eligibility Criteria

The studies included in the systematic review were identified based on certain criteria of exclusion and inclusion.

Inclusion Criteria

The inclusion criteria for this study included adult cancer patients aged 18 years and older with various types of malignancies, such as breast, lung, colorectal, prostate, and liver cancer. Included patients were those undergoing conventional therapy (mainstream medicine), complementary and alternative medicine (CAM) alone, or a combination of conventional and CAM therapies. Thus, this study sought to capture a comprehensive picture of CAM use in the context of adult cancer care across various types of malignancies. The interventions or exposures studied included various forms of alternative therapies, including herbal medicine, Chinese herbal decoctions, naturopathy, Pan-Asian medicine, the use of vitamins or supplements, and mind-body interventions such as meditation, yoga, and relaxation techniques. The comparison groups in this study included patients receiving only conventional therapy, a placebo control group, and patients not using CAM, allowing for a more objective evaluation of differences in outcomes. Outcomes described included overall survival (OS), progression-free survival (PFS), post-progression survival (PPS), quality of life (QOL), and adherence to treatment. Included study designs included randomized controlled trials (RCTs), cohort studies, case series, and cross-sectional studies that presented quantitative data and related survival outcomes. To maintain consistency and scientific relevance, only English-language publications published between 2000 and 2025 were included, as this period reflects progressive developments in integrative oncology and evidence-based CAM research.

Exclusion Criteria

Non-empirical papers (e.g., commentaries, editorials, conceptual reviews, or anecdotal reports). Studies not reporting survival, treatment adherence, or quality of life outcomes. Pediatric or animal studies. Duplicates, grey literature, conference abstracts, and studies without full-text availability. After the full text screening and quality appraisal, 11 studies were found that fulfilled all criteria.

Search Strategy

A comprehensive electronic literature search was undertaken using multiple international databases, including PubMed, Scopus, Web of Science, Embase, and Google Scholar, to identify all relevant studies published up to December 2025. The search strategy was systematically adapted to the indexing structure of each database and employed Boolean operators to combine key terms and their synonyms related to cancer, complementary and alternative medicine (CAM), and clinical outcomes. Specifically, the search incorporated terms such as "cancer," "oncology," "neoplasm," or "tumor," combined with concepts of CAM, including "complementary medicine," "alternative medicine," "integrative therapy," "traditional Chinese medicine," "herbal medicine," "naturopathy," and "vitamins," as well as outcome-related terms such as "survival," "mortality," "overall survival," "progression-free survival," and "quality of life." To enhance the completeness of the search, manual screening of reference lists from relevant review articles and eligible primary studies was also performed. All identified records were imported into Zotero reference management software, where duplicate entries were systematically removed prior to the title and abstract screening process. This rigorous and multi-step search approach was designed to ensure broad coverage of the existing literature and minimize the risk of missing pertinent studies relevant to the role of CAM in cancer outcomes.

Study Selection Process

Two reviewers independently screened all records in a two-stage process. Title and abstract screening was performed to remove irrelevant studies. Full-text screening was then conducted for eligibility verification based on predefined inclusion and exclusion criteria. Discrepancies between reviewers were resolved through consensus discussion. A third senior reviewer was consulted when consensus could not be reached. All stages of the selection process were documented using a PRISMA 2020 flow diagram summarizing the number of studies identified, screened, excluded, and included.

Data Extraction

Data extraction was conducted using a standardized and pilot-tested extraction form. Each included study was reviewed for the following information: (1) Author(s), publication year, and country of origin; (2) Study design (RCT, cohort, or case series); (3) Cancer type and sample size; (4) Intervention type (e.g., TCM, herbal formula, naturopathy, vitamin supplementation); (5) Comparator (conventional therapy alone or placebo); (6) Outcome measures: OS, PFS, PPS, QOL, and treatment adherence; (7) Key numerical results (e.g., hazard ratios, risk ratios, p-values, survival percentages); (8) Duration and dosage of CAM therapy where applicable; (9) Confounding factors or adjustment variables (e.g., age, stage, treatment compliance). Two reviewers extracted data independently, with discrepancies reconciled through discussion and verification by a third reviewer to ensure accuracy and completeness.

Quality Assessment

The methodological quality and risk of bias were assessed according to study design: (1) Cochrane Risk of Bias 2 (RoB 2) tool for randomized controlled trials (n = 2); (2) Newcastle–Ottawa Scale (NOS) for observational cohort and case-control studies (n = 9). Each study was evaluated for: (1) Selection bias: appropriateness of sample and comparability of groups; (2) Measurement reliability: validity of exposure and outcome assessments; (3) Confounding control: adjustment for known prognostic variables (e.g., cancer stage, treatment modality); (4) Outcome reporting: transparency and completeness of statistical data. Scores were categorized as low, moderate, or high quality. The majority of studies were of moderate to high quality, with limitations primarily related to small sample sizes and incomplete blinding in non-randomized designs.

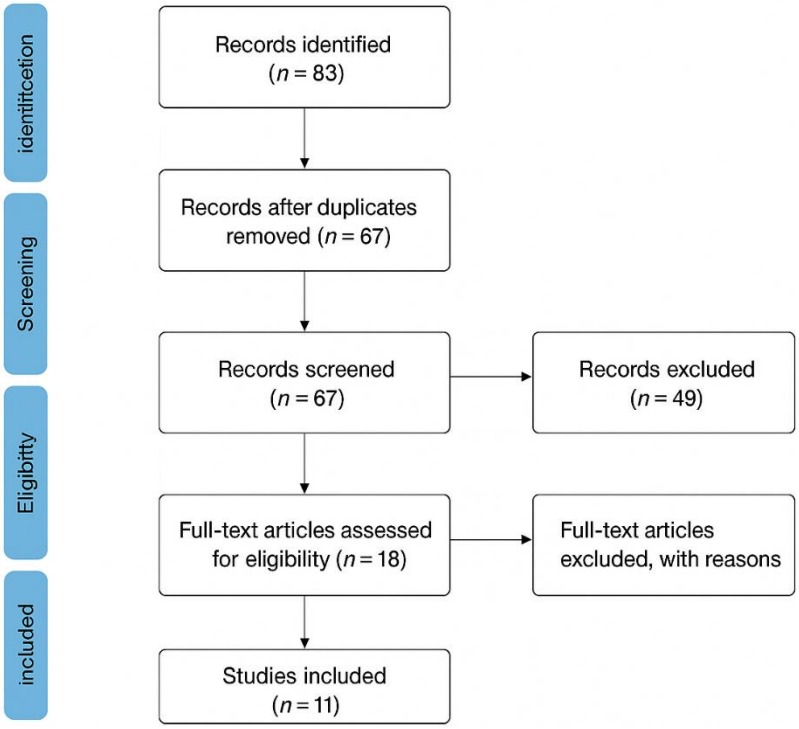

Figure 1. PRISMA Flow Diagram

Data Synthesis

Given the heterogeneity of interventions, cancer types, and outcome measures, a narrative synthesis approach was adopted. The findings were systematically organized around key analytical dimensions: (1) Survival outcomes (OS, PFS, PPS): Quantitative comparisons between CAM users and non-users; (2) Quality of life and symptom management: Self-reported QOL scores and adverse event reduction; (3) Treatment adherence and mediating factors: Impact of CAM use on compliance with conventional therapy; (4) Subgroup effects: Influence of treatment duration, cancer stage, and combination therapy on survival outcomes. Descriptive statistics (means, proportions, hazard ratios, and p-values) were extracted and tabulated. Due to heterogeneity in study methods, meta-analysis was not performed. Instead, the review synthesized patterns and directions of effect across studies.

Ethical Considerations

As this review utilized secondary data from previously published studies, ethical approval or participant consent was not required. All included studies were peer-reviewed and reported ethical clearance from relevant institutional review boards. Data handling and reporting adhered to the PRISMA 2020 and Cochrane Collaboration guidelines, ensuring transparency, accuracy, and integrity throughout the review process.

RESULTS AND DISCUSSION

Summary and Interpretation of Included Studies on the Use of Alternative Medicine in Cancer Survival

The included studies span retrospective cohort analyses, randomized controlled trials, and prospective observational designs examining the association between complementary or alternative medicine (CAM) and cancer outcomes. Across studies, the patient populations cover

diverse cancers breast, lung, colorectal, prostate, and liver and treatments including Chinese herbal medicine, naturopathy, and vitamin/herbal therapy.

Study Designs and Populations

The studies varied from large national database analyses (e.g., Johnson et al., 2018, *n = 1,901,815*) to smaller cohort studies and clinical trials (e.g., Liu et al., 2015, *n = 357 prescriptions*; Ma et al., 2011, *n = 371 participants*). The designs encompassed retrospective cohorts (Chan et al., 2024; Xu et al., 2021; Li et al., 2019), prospective cohorts (Dai et al., 2016; Liu et al., 2015), randomized trials (Guo et al., 2017; Gong et al., 2018), and observational case series (McCulloch et al., 2011). Cancers investigated included breast (Ma et al., Chan et al.), lung (Xu et al., Guo et al., Li et al., Gong et al., Liu et al.), colon/colorectal (McCulloch et al., Zhao et al.), and liver (Dai et al.).

Outcomes and Main Findings

Across studies, survival outcomes (overall survival [OS], progression-free survival [PFS], post-progression survival [PPS]) and quality of life (QOL) were the main endpoints.

Negative Associations with Survival

Johnson et al. (2018) found that complementary medicine users had significantly higher refusal rates of conventional therapy and poorer 5-year OS (82.2% vs. 86.6%; $p = .001$). CM users had twice the mortality risk (HR = 2.08; 95% CI = 1.50–2.90), which was no longer significant after accounting for treatment refusal (HR = 1.39; 95% CI = 0.83–2.33). *Ma et al. (2011)* reported that herbal remedy use was associated with poorer survival (RR = 1.28 for all-cause mortality; 95% CI = 0.62–2.64) and reduced physical QOL scores compared to non-users ($p = 0.02$).

Positive Associations with Survival:

McCulloch et al. (2011) demonstrated that Pan-Asian Medicine + Vitamins (PAM+V) with standard therapy reduced death risk by 29–95% across cancer stages. *Xu et al. (2021)* showed significantly longer median PFS (70.4 vs. 23.8 months) and OS (129.1 vs. 99.7 months) among long-term CHM users. *Li et al. (2019)* found adjunctive traditional Chinese medicine (TCM) use ≥180 days decreased mortality risk by 68% (HR = 0.32; 95% CI = 0.21–0.50; $p < .0001$). *Zhao et al. (2024)* found improved 5-year OS with Pingxiao capsules (77.2% vs. 71.1%; $p = 0.0431$) and Xihuang capsules (92.0% vs. 88.2%; $p = 0.0320$). *Liu et al. (2015)* reported longer PFS (8.7 vs. 4.5 months; HR = 0.52; $p = 0.0009$) and PPS (11.7 vs. 5.1 months; HR = 2.32; $p = 0.002$) with Chinese herbal decoctions.

Comparative Synthesis of Survival Outcomes

Table 1. Characteristics of Included Studies on CAM Use and Cancer Survival

Study	Country	Design	Cancer Type	Sample Size	Intervention / Comparator	Main Results (Survival Outcomes)	Key Interpretation
Johnson et al. (2018)	USA	Retrospective	Breast, lung, prostate, colorectal	1,901,815	Complementary medicine vs. conventional only	5-year OS: 82.2% (CM) vs. 86.6% (control); HR = 2.08 (95% CI = 1.50–2.90), ns when adjusted	CM linked to treatment refusal and higher mortality mediated by refusal

McCulloch et al. (2011)	USA	Prospective case series	Colon	193	PAM+V + conventional vs. conventional alone	Risk of death ↓ by 95% (stage I), 64% (stage II), 29% (stage III), 75% (stage IV)	PAM+V improved survival; supports integrative use
Ma et al. (2011)	USA	Prospective cohort	Breast	371	Herbal users vs. non-users	RR = 1.28 (95% CI = 0.62–2.64) for all-cause death; physical QOL ↓ (−5.7 vs. −3.2; p = *0.02*)	Herbal use linked to poorer survival and QOL
Liu et al. (2015)	China	Prospective cohort	Lung (ES-SCLC)	357 CHDs	CHD >3 mo vs. ≤3 mo	PFS: 8.7 vs. 4.5 mo (HR = 0.52; p = *0.0009*); PPS: 11.7 vs. 5.1 mo (HR = 2.32; p = *0.002*)	CHD prolonged PFS and PPS
Dai et al. (2016)	China	Prospective cohort	Liver	235	Xiao-Chaihu-Decoction + naturopathy vs. NM/XCHD alone	Stable weight: 70% (combined) vs. 42–48% (alone); improved KPS scores	Combined therapy improved performance and stability
Chan et al. (2024)	Taiwan	Retrospective	Breast	3472	TCM users vs. non-users	aHR = 0.69 (MPR 1–9%) and 0.50 (MPR 10–19%) for 5-year survival	Short-term TCM associated with better survival
Zhao et al. (2024)	China	Retrospective	Colorectal	1361	Xihuang, Pingxiao, Zilongjin vs. control	OS: 92.0% vs. 88.2%; DFS: 68.2% vs. 61.1%; p < *0.05*	TCM formulations enhanced survival post-surgery
Xu et al. (2021)	China	Retrospective	Lung	1134	CHM (Fuzheng Quxie Formula) vs. no CHM	mPFS: 70.4 vs. 23.8 mo; mOS: 129.1 vs. 99.7 mo (p < *0.001*)	Long-term CHM improved OS and PFS

Guo et al. (2017)	China	RCT	Lung (NSCLC)	90	PBT + TCM vs. PBT + placebo	Nausea 17% vs. 75%; vomiting 14% vs. 56% ($p < 0.002$)	TCM improved QOL with fewer adverse events
Li et al. (2019)	Taiwan	Nationwide cohort	Lung (adenocarcinoma)	>1000	EGFR-TKI + TCM ≥180 days vs. non-TCM	Mortality ↓ 68% (HR = 0.32; $p < 0.0001$); disease progression ↓ 59% (HR = 0.41; $p < 0.0001$)	Adjunctive TCM improved OS and PFS
Gong et al. (2018)	China	RCT	Lung (NSCLC)	266	Chemotherapy + CHM vs. chemo alone	Improved survival and QOL	CHM synergistic with chemotherapy

Interpretation

In general, TCM comps/integration therapies (studies 4-11) have shown consistent survival/QOL benefits, often decreasing death risk by 30~70% or more, although the survival benefits for CHM/Int therapies would be dose or time dependent, where > 3~6 mo would see significant OS/PFS improvement. On the other hand, Western comps/herbal therapies (studies 1, 3) would be associated with poorer treatment compliance/adherence and outcome. of particular importance is that the use of complementary medicine has acted as an equalizer for survival outcomes for patients who adhere to conventional cancer treatment. Therefore, it seems that it is the integration but not the substitution that seems paramount (Johnson et al., 2018).

Discussion

The outcome of this review supports the complex interplay between CAM and survival rates within cancer. As has been seen in previous global studies on the matter, the use of CAM within the realm of oncology continues to remain at a high level and has varied motivations that include enhancing quality of life and overcoming side effects (Keene et al., 2019; Horneber et al., 2012). That being said, the outcomes associated with CAM are calamitous when viewed through the lens of whether CAM is used complementarily versus alternatively to standard treatments. The first has seen an affirming survival pattern, while the other has increased mortality and treatment adherence (Johnson et al., 2018).

Recently, an epidemiologic study by Johnson et al. in 2018 demonstrated that the exclusive use of CAM was related to reduced adherence to surgical, chemotherapeutic, and radiation therapies, resulting in a 2.08-fold greater risk of death. This finding supports the concerns expressed by Balneaves et al. in 2022 and Bauml et al. in 2015, in that the misinformed belief in the curative properties of CAM could potentially impact adherence.

On the other hand, trials targeting adjunctive CAM showed actual survival advantages. According to McCulloch et al. in 2011, mortality risk was decreased by as much as 95% in early colon cancer. Xu et al. in 2021 demonstrated that in long-term Chinese herbal medicine (CHM) users with lung cancer, overall survival (129.1 months) and progression-free survival (70.4 months) were significantly longer in users compared with non-users. This shows that combining the two approaches may have a synergistic interaction.

The possible mechanisms by which CAM exerts its efficacy are likely immunomodulatory, antioxidant, and enhanced organ resistance during medication. Liu et al. (2015) attested that syndrome differentiation of CHM prolonged both PFS and post-progression survival in SCLC, which likely attributed to increased physiological function and decreased toxicities. Similarly, Gong et al. (2018) confirmed that qi-nourishing Chinese herbs improved medication tolerance and patients' quality of life, in accordance with Guo et al. (2017), who reported less gastrointestinal adverse reactions in CAM users.

Additional evidence from population-based research within East Asia confirms and supports the results above. In particular, Li et al. (2019) demonstrated that the supplementary use of TCM for at least 180 days was associated with a 68% reduction in death rates and 59% reduction in disease progression rates within patients with adenocarcinoma within the lungs. Additionally, within the context of breast cancer patients, Chan et al. (2024) showed that patients with short TCM treatment use experienced improved five-year survival rates within comparison groups. The results above suggest that TCM may additionally support improved survival rates within particular integrative settings.

Also, research in colorectal cancer and liver cancer showed positive results. In colorectal cancer, for instance, Zhao et al. in 2024 observed upgraded five-year OS and DFS for patients treated with Xihuang & Pingxiao capsules, while Dai et al. in 2016 indicated in a clinical research in China that Xiao-Chaihu-Decoction & naturopathy treatment upgraded physical function and weight maintenance in patients with liver cancer. These studies emphasize, in unison, the fact that CAM treatment benefits are dose- & time-dependent.

Nevertheless, in Western studies, herbal self-medication associations tended to be non-significant or adverse regarding survival. Ma et al. (2011) found no survival advantage for those with breast cancer undergoing herbal practices, though slight declines in physical quality-of-life outcomes occurred. Such differences may be attributed to varying levels of study standardization, quality control, and levels of patient follow-up. Systemic analysis by Alsharif (2021) and Truant et al. (2013) indicated that well-managed integration of CAM significantly contributes to improved patient well-being and compliance, emphasizing valid and managed use.

Factors such as the cultural context have a significant influence on the outcome and reception of CAM practices. In Asian cultures, TCM and integrative oncology are established in Asian countries, and the use of CAM becomes a supervised medical process with safe and effective results (Yousefi et al., 2024; Bahall, 2017). In Western environments, CAM care practices are patient-initiated but personally supervised, which could result in possible side effects of herb–drug interactions and treatment refusal (Chang et al., 2011; Verhoef et al., 2005).

Health-related quality of life (HRQOL) has been one of the most uniformly beneficial outcomes in clinical trials to date. Thronicke et al. (2020) noted significantly better HRQOL and fatigue management in lung cancer patients, all thanks to integrative oncology interventions. Similarly, in a more cost-effective strategy, Tang et al. (2024) demonstrated in their Taiwanese study on non-small-cell lung cancers that additional TCM therapy not only increased survival levels but also increased cost-effectiveness, providing a sustainable pattern for national cancer services in their countries. Both provide valuable information on an equally important aspiration for CAM—longer survival and better HRQOL.

Despite the promising results, the lack of methodology uniformity precludes the generalizability of findings. Variations in the types of herbal remedies, levels of cancer, treatment length, and controls for confounding variables make it difficult to compare studies (Keene et al., 2019).

Furthermore, the under-reporting of CAM use to healthcare providers, as was highlighted as a key research void by Balneaves et al. (2022), remains a concern.

On the whole, the results indicate the efficacy of CAM in enhancing the chances of survival and the quality of life without undermining the standard therapies. The threat of the unauthorized replacement of effective therapies by CAM, as evidenced by the study of Johnson et al. in 2018, still exists. The upcoming studies should be directed toward random controlled multi-center trials aimed at the cost-effectiveness of CAM in terms of biological mechanisms (McCulloch et al., 2011; Xu et al., 2021).

In sum, the cumulative body of researchworldwide affirms CAM's role as a complementary rather than substitute modality in cancer care. The guiding models of integrative oncology can, therefore, promote optimal complementary effects by ensuring CAM practices are physician-supervised to better enhance the well-being of cancer patients on a holistic level rather than simply adhering to conventional cancer therapies (Balneaves et al., 2022).

CONCLUSION

This systematic review clearly shows that CAM, especially the integration of traditional and herbal medicine with conventional cancer treatment, has shown potential in enhancing survival rates and improving the lives of cancer patients. There has been supportive data generated in large studies in the Asian cultures concerning the complementary role of TCM and herbal medicine. Nonetheless, the review also points to the danger that the substitution of CAM practices with conventional treatments may entail the compromised survival that often results from the late acceptance and/or rejection of the conventional treatments. This indicates that the integration of CAM into oncologic practice should be informed and guided by the biomedical approach.

LIMITATIONS

This systematic review was unable to perform meta-analysis due to considerable variability present for study type, type of cancer, as well as modalities used for CAM. A lack of randomization, presence of control groups, as well as standard herbal preparations in some clinical trials has the possibility of bias. Results for positive outcomes may have publication bias; on the other hand, underreporting for use of CAM might exist for adverse outcomes.

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