

The Prevalence and Predictors of Herbal Medicines' Use in Cancer: A systematic Review and Meta-analysis of Observational Studies.

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Review questions/Objectives

- Determine the prevalence of herbal medicines use among cancer patients across the various regions of the world
- Establish the key predictors of herbal medicines use in cancer across the various regions of the world

Searches/Search Strategy

Databases that will be searched for titles, abstracts, and MeSH words/terms will include MEDLINE (PubMed), SCI-Finder, EMBASE, CENTRAL, HINARI, INASP, eIFL, African Index Medicus, and Google Scholar.

#	Search terms
1	Cancer OR Neoplasm OR Tumo* OR Malignancy
2	Herbs OR herbal medicine OR Herbal material OR Herbal preparation
3	Prevalence OR use OR Proportion OR Percent*
4	Predictors OR Determinants OR Associated factors OR correlates
5	Observational studies OR Cohort OR Cross-sectional* OR survey
6	Limit to English language and papers published between 2000 to 2019
7	#1 AND #2 AND #3 AND #4 AND #5 AND #6 OR #1 AND #2 AND #3 AND #6 OR #1 AND #2 AND #5 AND #6

Types of study to be included:

Inclusion Criteria: Only observational studies shall be included in this study and these will include cross-sectional and cohorts' studies.

Exclusion criteria: Case-control studies, case studies, expert reviews, policy reports, and studies that do not differentiate in analysis between herbal medicines and other forms of complementary and alternative medicine shall not be included in this review.

Condition or domain being studied:

We will estimate the prevalence of herbal medicines use in cancer patients across the various regions of the world and establish the predictors of herbal medicines use in cancer.

Participants/population

Inclusion criteria

Female and Male Participants of all ages.

Participants suffering from cancer (that is clinically, histologically, or cytologically proven) or participants attending oncology departments (clinics, outpatient clinics, chemotherapy units, cancer institute's etc).

Participants who used herbal medicine from one or more than one plant/herb/herbal material/herbal preparation (single or combinational herbal medicine).

Participants who used herbal medicine for cancer with or without other complementary and alternative medicine therapies.

Participants who used herbal medicine for cancer with or without conventional therapies (surgery, radiotherapy, or chemotherapy).

Exclusion Criteria

Lack of approval statement or evidence of ethical approval to conduct the study from a recognized investigational research ethic board/committee for human studies.

Intervention (s), exposures

We will be interested in studies where humans were reported/self-reported their use of herbal medicine to treat cancer or manage some form of cancer illness with herbal medicine.

Comparator(s)/control

No Comparisons group will be needed for this study

Context

All population-based studies conducted in the hospital and community-based settings will be included in the review.

Outcomes

Primary outcomes

Prevalence or proportion of participants self-reporting use or who are reported using herbal medicine in any cancer. This outcome will be measured as the proportion of participants who reported using herbal medicine (single or a combinational) in cancer either with or without other complementary and alternative medicine therapy OR conventional therapy.

Standardized or Unstandardized Coefficients (These are effect size measures of the Predictive power of

independent factors on the dependent variable/outcome (herbal medicines use in cancer). These are measured as a continuous number/value and usually reported with their confidence intervals. The primary outcomes (prevalence and coefficients) should have been measured (or is an aggregate) from a single or multiple events/exposure irrespective of the time.

Secondary outcomes

- Proportion/percentage of participants suffering from cancer reporting a specific Herbal medicine side effect.
- The type of cancers where herbal medicines were commonly used.

Data extraction (selection and coding)

After obtaining the studies by the first author, two other authors will independently assess the titles and abstracts of the researches retrieved from the electronic database and determine their eligibility for inclusion in the review. Additionally, the two authors will also independently extract the data using a standard data extraction form. These forms will include participant characteristics, methods, the prevalence of herbal medicine use, predictors of herbal medicine use, conclusions, and any other data deemed vital to this review. In case of any disagreement in the selection and entry of data in data standard forms, disagreement will be resolved through consensus and or arbitration to the fourth author when consensus fails.

Risk of bias (quality) assessment

Two authors will independently assess and report the risk of bias in selected studies using ROBINS-I tool ("Risk of Bias in Non-randomized Studies - of Interventions"). The risk of bias will be classified as low, high, or unclear across the various domains (selection bias, participation bias, confounder bias, and others).

Strategy for data analysis and synthesis

Using Rev. 5.3 from Cochrane collaboration and STATA software, a meta-analysis shall be conducted if there is acceptable homogeneity on the participant, study design, and outcome measures. The weighted prevalence estimates and their 95% confidence intervals (CIs) shall be calculated. Additionally, the weighted coefficient estimates and their 95% confidence intervals (CIs) shall be calculated for the herbal medicine use in cancer predictors. I^2 statistics shall be used to examine heterogeneity and if present (50%), fixed and random effects model shall be used to

summarize the effect measures. Where metanalysis is not feasible individual study data shall be summarized in the tables and described.

Analysis of subgroups or subsets

Pooled Analysis of the Prevalence of herbal medicine use based on age category (Pediatric and Adults), geographical regions, economic regions, type of cancer, income levels, and social demographic characteristics may be undertaken.

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Organizational affiliation of the review

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The Pharm biotechnology and Traditional Medicine center of Excellence will provide a conducive environment for the review in terms of providing the library and internet services, publication fees, among others.

Conflicts of interest

None Known