7 Steps to the Perfect PICO(T) Search

Evidence-Based Nursing Practice

Overview

Searching for high-quality clinical research evidence can be a daunting task, yet it is an integral part of the evidence-based practice process. One way to streamline and improve the research process for nurses and researchers of all backgrounds is to utilize the PICO(T) search strategy. PICO(T) is a format for developing a good clinical research question prior to starting one's research.

In this white paper, we will explore the importance of evidence-based nursing practice, take a deeper dive into the PICO(T) process and provide an example of it through a case scenario. Whether you are a librarian, a nurse or a nursing student, you will benefit from reading 7 Steps to the Perfect PICO(T) Search.

What is Evidence-Based Nursing Practice and Why is it Important?

"Evidence-based practice in nursing is using and carrying out nursing practices based on the best available knowledge. Evidence-based practice integrates the nurse's clinical expertise with the best external research evidence and takes into account patient preferences to deliver quality nursing care."

– Victoria Schirm, Director of Nursing Research, Penn State University

Best External Research Evidence

Nurse's Clinical Expertise

Patient Preferences

Evidence - Based Practice

Evidence-based nursing is a process founded on the collection, interpretation, appraisal, and integration of valid, clinically significant, and applicable research. It is not about developing new knowledge or validating existing knowledge but rather translating existing evidence so that it can be applied to clinical decision making. The expected standard in modern healthcare systems, **evidence-based nursing practice** links research and theory to practice, providing clinicians with current, reliable research-driven data to guide patient care decisions.
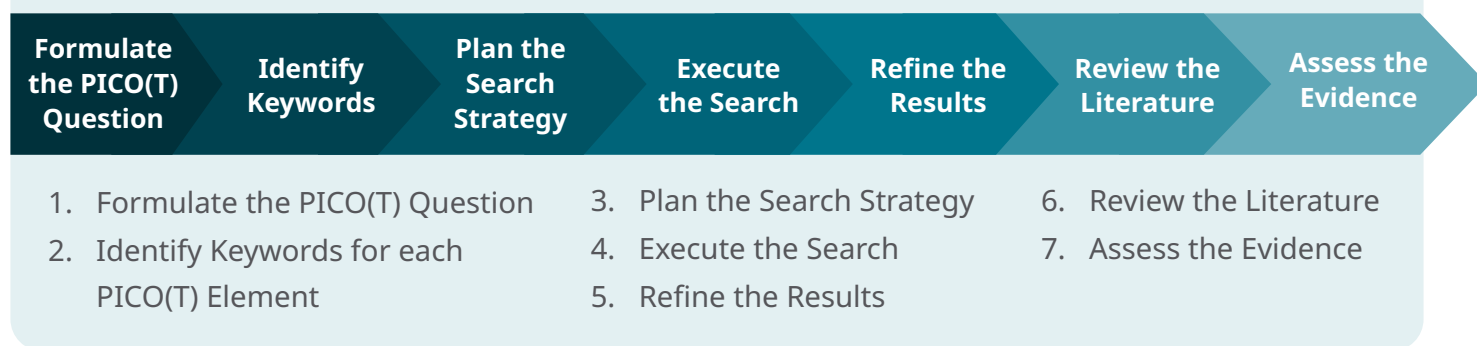
Research has shown that patient outcomes are substantially improved when health care is based on evidence from well-designed studies versus tradition or clinical expertise alone. Better patient outcomes lead to more efficient performance, which is crucial for hospitals with staffing challenges.

What is the PICO(T) Process?

The word PICO(T) is a mnemonic derived from the elements of a clinical research question – patient, intervention, comparison, outcome and (sometimes) time frame. "The PICO(T) process begins with a case scenario, and the question is phrased to elicit an answer." (Duquesne University School of Nursing.) The question needs to identify the patient or population intended to be studied, the intervention or treatment to use, the comparison of one intervention to another (if applicable) and the outcome anticipated. These make up the five elements of the **PICO(T) model: P**atient/Problem, **I**ntervention, **C**omparison, **O**utcome and **T**ime frame.

The PICO(T) process starts with a case scenario from which a question is constructed that is relevant to the case and is phrased in such a way as to facilitate finding an answer. Once a well-structured question is formulated, researchers will be in a better position to search the literature for evidence that will support their original PICO(T) question.

7 Steps to the Perfect PICO(T) Search

| Formulate the PICO(T) Question | Identify Keywords | Plan the Search Strategy | Execute the Search | Refine the Results | Review the Literature | Assess the Evidence |

1. Formulate the PICO(T) Question
2. Identify Keywords for each PICO(T) Element
3. Plan the Search Strategy
4. Execute the Search
5. Refine the Results
6. Review the Literature
7. Assess the Evidence

Step 1: Formulate the PICO(T) Question

Case Scenario:

You are a Registered Nurse working in an acute Rehabilitation unit. One of your patients is a 55-year old man who has injured his back and now has chronic back pain.

At the next Evidence-Based Nursing Practice Committee meeting, you discuss this case. The committee wants to do a case study to determine if there is evidence to show how a physical therapy program including yoga compares to drug therapy & whether or not the pain levels or quality of life have improved over a 6-week period.

Based on this scenario, our research question is: "In patients with chronic back pain, is there evidence to suggest that physical therapy with yoga compares with drug therapy & affects pain levels or quality of life over a 6-week period."

Step 2: Identify Keywords for each PICO(T) Element

Population (P) – What individual or group are we interested in studying?

Intervention (I) – What is the action (intervention, treatment) we are considering taking?

Comparison (C) – To what other action (intervention, treatment) are we comparing the considered action?

Outcome (O) – What do we anticipate as an outcome?

Time Frame (T) – Time required to see results?

"In patients with chronic back pain is there evidence to suggest that physical therapy including yoga compares with drug therapy & affects pain levels or quality of life over a 6-week period"

PICO(T) Elements	Keywords
P (**P**atient or **P**opulation)	**Chronic back pain**
I (**I**ntervention)	**Physical Therapy OR yoga OR rehabilitation**
C (**C**omparison)	**Drug Therapy OR medications OR drugs**
O (**O**utcome)	**Pain levels OR quality of life**
T (**T**ime Frame)	**6 weeks**

Step 3: Plan Your Search Strategy

Plan a search strategy by:

- Determining which database(s) to search
- Identifying the major elements of your question
- Translating natural language terms to subject descriptors, CINAHL Headings, or synonyms

Interface: EBSCOhost Research Databases

Database: CINAHL Ultimate

Search Screen: Advanced Search

Synonyms, words or phrases that mean exactly or nearly the same as another word or phrase, can help expand your search appropriately. For example: when searching for ***drug therapy***, you might miss articles that use synonyms such as ***medications or drugs***. Adding synonyms will help to expand your results to those articles that are relevant. These are shown as Search Strategies in the table below.

CINAHL Ultimate

CINAHL Ultimate is just one of the information resources a nursing researcher can utilize to execute a perfect PICO(T) search. Considered to be the definitive research tool for nursing and allied health professionals, CINAHL Ultimate provides fast and easy access to top nursing and allied health journals, evidence-based care sheets, quick lessons, instructional videos and continuing education modules. This database contains full text for many of the most-used journals found in the CINAHL index. With CINAHL Ultimate, users can access a comprehensive scope of content covering all nursing specialties as well as allied health subjects including speech and language pathology, nutrition, physical therapy and much more.

PICO(T) Elements	Keywords	Search Terms
P (**P**atient or **P**opulation)	Patients with chronic back pain	Chronic back pain
I (**I**ntervention)	Physical therapy including yoga	Physical therapy **OR** Yoga **OR** Rehabilitation
C (**C**omparison)	Drug therapy **OR** Quality of life **OR** Pain medications	Drug therapy **OR** Medications **OR** Drugs
O (**O**utcome)	Affects pain level & quality of life	Pain levels **OR** Quality of Life
T (**T**ime Frame)	6 weeks	6 weeks
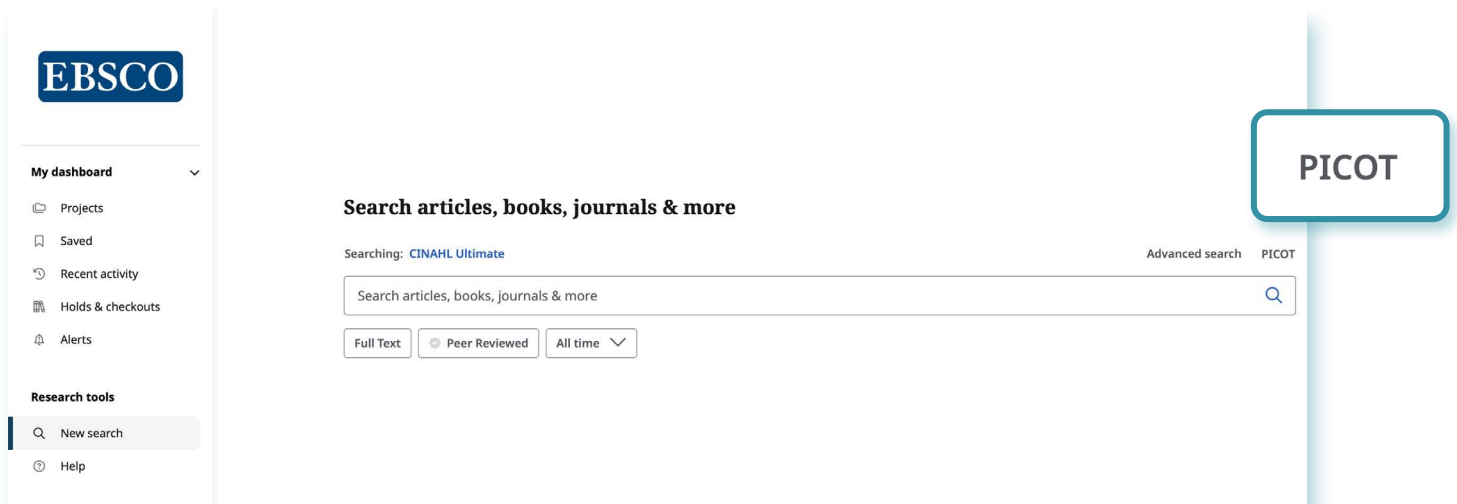
Step 4: Execute the Search

Before you begin your search, you will want to ensure the **Search Mode** is set to **Proximity**. Proximity searching is a way to search for two or more words that occur within a certain number of words from each other. The reason this is important is because this option allows for "exact phrase" searching in the same field. For example, if you searched for the phrase, Heart Disease, the system would search for records where the two words heart and disease appear together in a field, as a phrase, and not simply records where the two words appear separately.

To begin your search, click on PICOT. Each PICO(T) Element (P, I, C, O, T) will be searched using the search strategies in the chart above. Once the search is completed, we will add the elements of the search by clicking on "Add to Search".

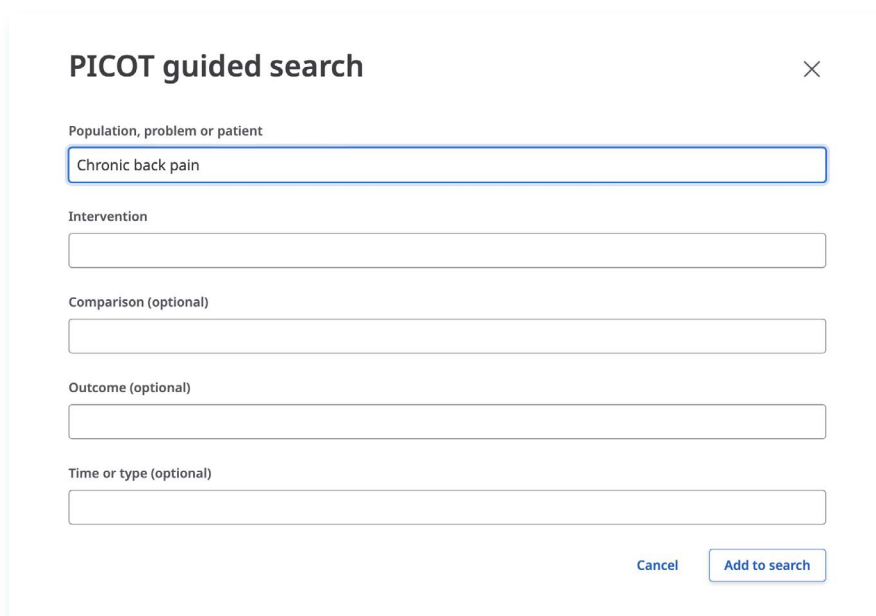# The PICO(T) Search Bar — CINAHL Ultimate

The CINAHL Ultimate Database offers a PICO(T) Search Bar, perfect for a quick PICO(T) search. Individual keywords are utilized, without synonyms. Click on the PICO(T) Search button to access the PICO(T) Search Bar in the basic or advanced search mode (Note: If you do not see the PICO(T) Search button, please contact Customer Support).

When the PICOT Search Box opens, simply type in your keywords and submit. The results may yield fewer articles, but this is a great way to get the relevant information fast.

- **P (Patient or Population):** Begin your search with the Patient or Population, which are those patients with **chronic back pain**.

- **I (Intervention):** Enter the search for the Intervention which is **Physical Therapy OR yoga OR Rehabilitation**. Be sure to use the Boolean operator, "AND".

- **C (Comparison):** The Comparison in this search would be "Pain management OR drug therapy OR pain medications. As mentioned above, to increase your search results, try adding additional terms that have the same meaning, such as **Drug Therapy, or Medications or Drugs**. ***Note:** Be sure to use the Boolean operator, "OR", so that each result contains **at least one** of these search terms.

- **O (Outcome):** You can now conduct a search for the Outcome, which is **improved pain levels and quality of life.**

PICOT guided search ✕

Population, problem or patient

Chronic back pain

Intervention

Physical therapy OR Yoga OR Rehabilitation

Comparison (optional)

Drug therapy OR Medications OR Drugs

Outcome (optional)

Pain levels OR Quality of life

Time or type (optional)

Cancel **Add to search**

- **T (Time Frame):** Your goal is to determine whether physical therapy and yoga reduces the pain levels after 6 weeks, so enter **6-week period** in (T).

PICOT guided search ✕

Population, problem or patient

Chronic back pain

Intervention

Physical therapy OR Yoga OR Rehabilitation

Comparison (optional)

Drug therapy OR Medications OR Drugs

Outcome (optional)

Pain levels OR Quality of life

Time or type (optional)

6 weeks

Cancel **Add to search**

- **Combine Searches:** To complete your search, you will click on "Add to Search". The combined search will appear as one search strategy in the advanced search screen. Click on "Search" to run the search.

Search articles, books, journals & more

Searching: **All databases (33)**   Basic search   PICOT

(Chronic back pain) AND ((Physical therapy OR Yoga OR Rehabilitation) OR (Drug therapy OR Medicati ⊗ | All fields ⌄

AND ⌄ | | All fields ⌄

AND ⌄ | | All fields ⌄

➕ Add fields   **Search**

Filters   Search options   Publications   Subjects   ⋮ More

Step 5: Refine Your Results

Applying limiters to your search ensures you will view the most relevant articles. Make sure your results are set to the most relevant, not the newest. From the list of filters on the CINAHL results page limit to "Full Text". Then select articles that were published in the last 5 years. Select other filters/limiters from the list, if warranted.

Step 6: Review the Literature

Once you have added limiters to your combined search and run the results again, choose and review articles that are most relevant to your PICO(T) question.

Searching: **CINAHL Ultimate**   👤 MyEBSCO

(Chronic back pain) AND ((Physical therapy OR Yoga OR Rehabilitation) OR (Drug therapy OR Medications OR Drugs)) AND (Pain levels OR Quality of life) AND (6 weeks ⊗ 🔍

⚙ All filters (2)   Full Text   ○ Peer Reviewed   Past 5 years ⌄   Source type ⌄   Advanced search

📖 All results   📄 Evidence-based care sheets   🗂 Quick lessons   ▶ Video

☐ 2 | ✅ Peer reviewed | Academic Journal   🔖   ⋮

Chronic lower _back pain_ among occupational workers: effect of relaxation technique on _quality_ of working _life_, _pain_ and disability _level_ with nurse-led intervention.

By: Sabola, Nabila ELSayed; Wifaq, Kamal; Alruwaili, Musaad M.; +3 more • **In:** BMC Nursing, 03/02/2025 • CINAHL Ultimate

Background: Lower _back pain_ (LBP) is the main cause of workplace impairment and a significant contributor to absenteeism. Implementing relaxation techniques in the workplace can be considered an investment because it can eventually lower th... Show more

Subjects: Blue Collar Workers Psychosocial Factors; Textile Industry Egypt; Low _Back Pain_; _Chronic_ Disease; +23 more

Step 7: Assess the Evidence

The final step to the perfect PICO(T) search is to determine the level of evidence within each relevant article. In searching for the best available evidence, a hierarchy exists regarding the level and strength of evidence. As you review the journal articles, select those that are based on highest level of evidence, such as a Meta-Analyses or a Systematic Review.
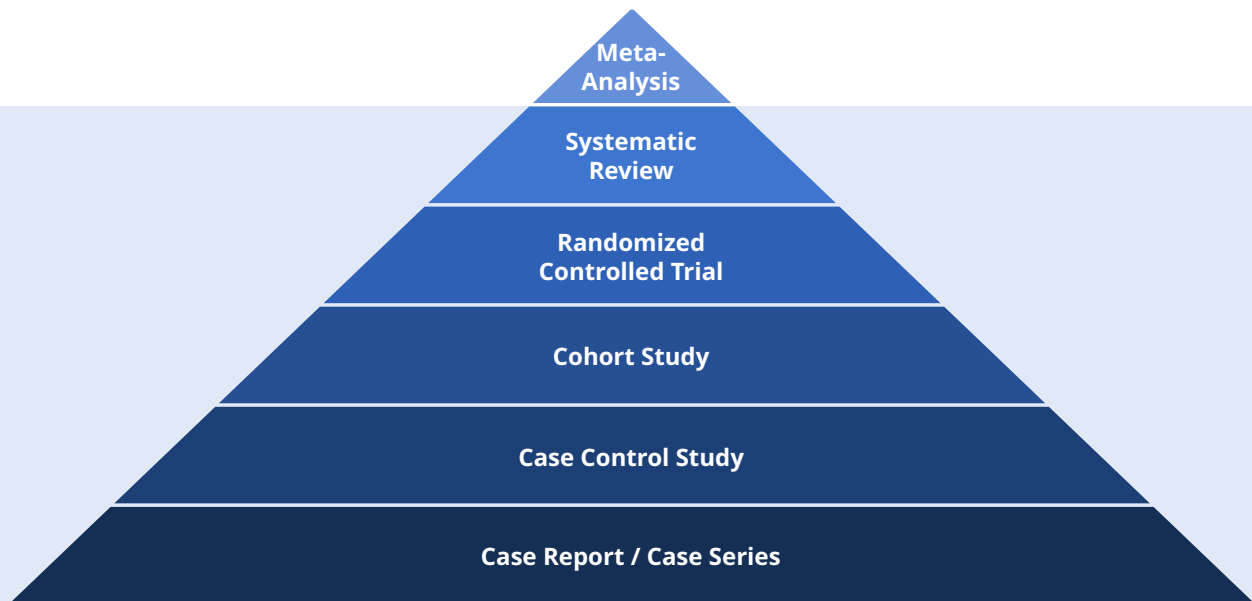
Hierarchy of Evidence

Studies Defined

Meta-Analysis: A systematic review that uses quantitative methods to synthesize & summarize results.

Systematic Review: A summary of the medical literature that uses explicit methods to perform a comprehensive literature search & critical appraisal of individual studies.

Randomized Controlled Trial: Participants are randomly allocated into experimental, or control groups & are followed over time for the variables/outcomes of interest.

Cohort Study: Identifies participants who currently have a certain condition or receive a treatment and are followed over time & compared with another group of people who are not affected by the condition.

Case Control Study: Identifies participants who have a certain outcome (cases) & participants without that outcome (controls).

Case Report/Case Series: A report on one or more participants with a particular outcome.

(Adapted from CEBM - Centre for Evidence-Based Medicine)

Conclusion

Fostering a culture of evidence-based nursing practice within a hospital is no easy task. It involves the integration of clinical expertise, patient values, and the best research evidence (Sackett D, 2002). The actual search for high quality clinical research evidence can be overwhelming to many. By utilizing the PICO(T) format, the search process will be streamlined and will yield the best available evidence to support clinical decisions and explore alternatives.

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