



Using PICO & PEO:

Developing your research question and search strategy

The PICO & PEO formats are used widely in nursing and health research to help manage and break down research questions. Applying one of these will help you to identify the key concepts in your question, develop appropriate search terms to describe these and determine your inclusion and exclusion criteria (which you will need to refer back to when making your final selection of articles).

PICO is most widely used in quantitative research whereas PEO is most useful for qualitative research questions. The elements are described below and can be used as required. Not all elements will apply and you should just use those that relate to your question.

It does not matter if your research question does not exactly fit one of these formats. You may find that some elements apply while others do not. It is all part of the process of helping you to examine your question in detail and develop an effective search strategy.

TIP! You may find that you have to enter your search in a different format in order to achieve the best results. However you will still be expected to use the same search terminology. Your frameworks will therefore inform but not drive your search.

PEO format - qualitative

P	Population and their problems	Who are the users, patients or community being affected? What are their symptoms, age, gender etc.
E	Exposure	Use for a specific <i>exposure</i> (this term is used loosely) such as "witnessed resuscitation" or "domestic violence" (Bettany-Saltikov, 2012)
O	Outcomes or themes	Are you looking for improvements in pain, responsiveness to treatment, mobility, quality of life, daily living? Usually there will be an element of looking at patient's experiences.

PICO format - quantitative

P	Population, Patient, Problem	Who are the users, patients or community being affected? What are their symptoms, age, gender etc.
I	Intervention	What is being done for the population e.g. screening, surgery, rehabilitation, services etc.
C	Comparison	Is there a control group or comparison element e.g. different treatment options, placebos etc.
O	Outcome	What do you want to achieve via the study? What do you hope to change or measure?

FINER & SPIDER models - qualitative or quantitative (mixed methods)

F	Feasibility	S	Sample
I	Interesting	PI	Phenomena of Interest
N	Novel	D	Design
E	Ethical	E	Evaluation
R	Relevant	R	Research type

Worked PICO example

Research topic: The use of repositioning to prevent pressure ulcers

P	Population, Patient, Problem	Patients with pressure ulcers
I	Intervention	Repositioning
C	Comparison	No repositioning
O	Outcome	Preventing pressure wounds

- For each key concept try to think of as many synonyms (similar words) or related words as possible. It might be useful to use a thesaurus or browse subject headings on individual databases.
- Allow for alternate spellings, synonyms and truncations

P	Population, Patient, Problem	Pressure ulcers, pressure wounds, pressure sores, pressure abscesses
I	Intervention	Repositioning, positioning, tilting, turning
C	Comparison	
O	Outcome	Preventing, treating, managing

Worked PEO examples

Research topic: What are the lived experiences of older people with colon cancer?

P	Population and their problems	Older people with colon cancer
E	Exposure	Colon cancer
O	Outcomes or themes	Experiences, daily living

P	Population and their problems	Older people, elderly, geriatric, ageing
E	Exposure	Colon cancer, bowel cancer, colorectal cancer
O	Outcomes or themes	Experiences, daily living, quality of life, QOL

Research topic: What are the experiences of mothers with postnatal depression?

P	Population and their problems	Mothers with postnatal depression
E	Exposure	Postnatal depression
O	Outcomes or themes	Experiences, daily living,

P	Population and their problems	Mothers, woman, women, maternal
E	Exposure	Postnatal depression, postpartum depression, PND
O	Outcomes or themes	Experiences, daily living, quality of life, QOL

In this example the population/problem element could well be superfluous in a search strategy as only women will experience this condition.

References

Bettany-Saltikov, J. (2012) *How to do a systematic literature review in nursing: a step-by-step guide*. Maidenhead: McGraw-Hill/Open University Press.