Forming Focused Research Questions with PICO

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Forming Focused Research Questions with PICO

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SLA
Baltimore, MD 10:30-11:30
Objectives

• What is PICO?
• Know why you should use PICO?
• Practice using PICO.
What is PICO?

- Patient/problem/population
- Intervention
- Comparison/Control
- Outcome
EBM

• Relatively new (1990’s)
• Systematic approach to review massive amounts of literature
• Make decisions
• BEFORE: Anectodal, textbook, peer review journals.
After: EBM

- **Clinical Scenario/Observation**
- **Ask**: Ask an answerable clinical question based on the health needs of a specific patient (PICO framework: Patient, Intervention, Comparison, Outcome).
- **Acquire**: Find the best available evidence by searching the literature.
- **Appraise**: Critically appraise the literature: check for validity, clinical relevance, and applicability.
- **Apply**: Apply the evidence in your clinical practice.
Clinical Scenario #1

- You are working in an out-patient Physical Therapy Department in a rural community in North Carolina. Your regular patient, Ms. Baxter is here for her monthly visit for physical therapy related to osteoarthritis of the hip. She is 65 years old, recently retired and has no other serious medical problems. She shows up wearing a new magnetic bracelet which her daughter sent her. Her daughter swears that this will help the hip pain. Ms. Baxter is very skeptical and asks you if you would recommend the bracelet for pain control. You don't know if there is any good evidence to demonstrate the effectiveness of the magnetic bracelets but promise to look into it before her next visit. Will this bracelet help her hip pain?
**Worksheet**

<table>
<thead>
<tr>
<th>Patient/Population/Problem</th>
<th>65 y.o. female w/osteoarthritis of hip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>Magnetic bracelet</td>
</tr>
<tr>
<td>Control/Comparison</td>
<td>Nothing/standard treatment</td>
</tr>
<tr>
<td>Outcome</td>
<td>Pain control/Reduction of pain</td>
</tr>
</tbody>
</table>

**Question:** Do magnetic bracelets help control pain in patients with osteoarthritis of the hip?

**Keywords:** osteoarthritis hip AND magnetic bracelet AND pain control
Play Doctor

• Search Google Scholar
• Read 2 abstracts
• Make your recommendation based on evidence
Clinical Scenario #2

- The patient is a 65 year old male with a long history of type 2 diabetes and obesity. Otherwise his medical history is unremarkable. He does not smoke. He had knee surgery 10 years ago but otherwise has had no other major medical problems. Over the years he has tried numerous diets and exercise programs to reduce his weight but has not been very successful. His granddaughter just started high school and he wants to see her graduate and go on to college. He understands that his diabetes puts him at a high risk for heart disease and is frustrated that he cannot lose the necessary weight. His neighbor told him about a colleague at work who had his stomach stapled and as a result not only lost over 100 lbs. but also "cured" his diabetes. He wants to know if this procedure really works.
### Worksheet

<table>
<thead>
<tr>
<th>Patient/Population/Problem</th>
<th>Obese, diabetes type 2, male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>Stomach stapling, gastric bypass surgery, bariatric surgery</td>
</tr>
<tr>
<td>Control/Comparison</td>
<td>Nothing/standard treatment</td>
</tr>
<tr>
<td>Outcome</td>
<td>Remission of diabetes, weight loss, mortality</td>
</tr>
</tbody>
</table>

**Question:** In obese patients with type 2 diabetes, is bariatric surgery more effective than standard medical therapy at increasing the probability of remission of diabetes?

**Keywords:** obesity AND diabetes type 2 AND bariatric surgery.
Play Doctor

• Search Google Scholar
• Read 2 abstracts
• Make your recommendation based on evidence
Why use PICO

• Form a focused, answerable question

• At the same time create search strategy

• Helps create better research questions
When to Use PICO

• In a clinical (medical) setting.
• In education
• In business
• In ethics
• In real life
PICO not used in other disciplines

- Control/Comparison
- Qualitative vs. Quantitative Research
Mind-mapping/Concept mapping

NOT MY JAM!!
PICO- This is my jam!

- **PICO Worksheet and Search Strategy**
- Define your question using **PICO**: Population, Intervention, Comparison, and Outcome.
- Population: _____________________________________________________________
- Intervention: ____________________________________________________________
- Comparison: _____________________________________________________________
- Outcome: _______________________________________________________________
- Write out your question: ___________________________________________________
- ________________________________________________________________
- List the main search terms and keywords from your question that you can use to search.
  - ________________________________  ________________________________
  - ________________________________  ________________________________

Kennesaw State University
Let’s use PICO to improve the questions

PICO
- Population
- Intervention
- Comparison
- Outcome
Characteristics of Bad Research Questions

• Too broad or too narrow
• Requires a yes or no answer
• There are insufficient academic or scholarly sources available to use.
Practice

• Is it better to take a gap year after high school?
• Are high school seniors who take a gap year more likely to graduate from college?
Practice

• Does assigning an academic “coach” help students?
• Will assigning an “academic coach” to incoming freshman improve first year retention rates?
• Are Trump’s policies of restrictive tariffs on aluminum & steel harmful?
• Will imposition of restrictive tariffs on Chinese aluminum and steel boost domestic aluminum and steel production?
More practice questions

• Are “no kill” shelters bad?
• Is it immoral to lie?
• Are Amazon employees burned out?
• Is minimal treatment for breast cancer better for the patient?
• Should Trump negotiate with Kim Jong Un?
Let’s use PICO to improve the questions