Undergraduate Research Engages Life-Long Learners!!!

Teaching & Learning in a Diverse Community of Scholars

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Objectives for today

- Background and context

- Successful learning activities

- Lessons learned

- Competency outcomes

Objectives for Today

Context

ISU will position students to excel in a globally competitive, culturally diverse, technological and changing environment… by providing students with transformational learning experiences…[so that] students recognize their ability to influence social change and must be given the knowledge and skills necessary to do so.

Educating Illinois 2008-2014

Context

Professional nursing must be grounded in the translation of current evidence into practice.

Baccalaureate programs prepare graduates to use skills of *inquiry*, *analysis*, and *information literacy* to address practice issues.

Essentials of Baccalaureate Education for Professional Nursing Practice (2008)

Problem

As nursing educators and practicing clinicians, we began to understand that the real problem was not content knowledge, but the *challenge of shifting attitudes* that would result in observable behavioral change.

Gap in Knowledge

Journal Clubs to replicate real purpose

1. PICO ? to guide inquiry

2. PICO ? to guide search strategy

3. PICO ? to critically analyze articles

4. PICO ? to synthesize findings

5. PICO ? to evaluate evidence in relation to the question.

6. Reflection via discussion boards

Best Evidence-Based Practice in Undergraduate Education

- ***Background***
  - *Decide on a context for the problem*
    - <u>One sentence</u>
  - *Identify a gap in their knowledge*
    - <u>One sentence</u>
  - *Purpose of their inquiry*
    - <u>One sentence</u>

Journal Clubs as authentic learning places in clinical practice

Context

(_Background)_ The rate of labor induction has increased significantly over the past several years. _(Gap in Knowledge)_ While in some cases there are medical reasons for induction of labor, we are interested in the possible complications that arise from elective induction. _(Purpose)_ The purpose of this project is to identify potential complications of elective induction and to ultimately apply this knowledge to clinical practice.

Example

Research Question

- **P** = *population or patient* (the who)

- **I** = *intervention* (the what)

- **C** = *contrasting intervention* (optional)

- **O** = *outcome* (morbidity, mortality, quality of life)

PICO ? to guide inquiry

Research Question

- P – In expectant mothers,
- I – does elective induction of labor
- C – versus spontaneous labor
- O – carry more risk of physiological morbidity to mother or infant?

In expectant mothers, does elective induction of labor versus spontaneous labor carry more risk of physiological morbidity to mother or infant?

Example

Search Strategy

- **Librarian** assistance

- Using at least **4 databases**

- Using **key terms** taken from the PICO question and/or **mesh headings**

- **Inclusion** and **Exclusion** criteria

- **Results** of search

**PICO question to guide search strategy**

Search Strategy

Upon consultation with a **librarian,** the **CINAHL database** was searched using the heading **"labor, induced"** (**exploded to include subheadings fetal membranes and artificial rupture**) AND the **keyword "elective".** The **PUBMED database** was searched using the **MeSH heading "labor, induced"** AND the **key word "elective."** **The Cochrane Database** of Systematic Reviews, the **Database of Abstracts of Reviews of Effectiveness** (DARE), and the **National Guideline Clearinghouse** were also searched using the **terms "induced labor", "labor, induced", and "elective induction"** and no articles were found to meet our inclusion criteria. **Articles were included** if they focused on outcomes of elective induction for uncomplicated full-term pregnancies. **Articles stated to be "commentaries" and "expert opinion" were excluded**, as were articles that focused on physician effect of induction outcomes and mothers expecting multiples. **This criteria resulted in 8 unduplicated articles.**

Example

Critical Analysis (to take apart)

- Citation

- Type of article

- Level of Evidence

- Background (2 sentences)

- Purpose (1 sentence)

Synthesis
RCT
Quasi-experimental
Guidelines or Qualitative
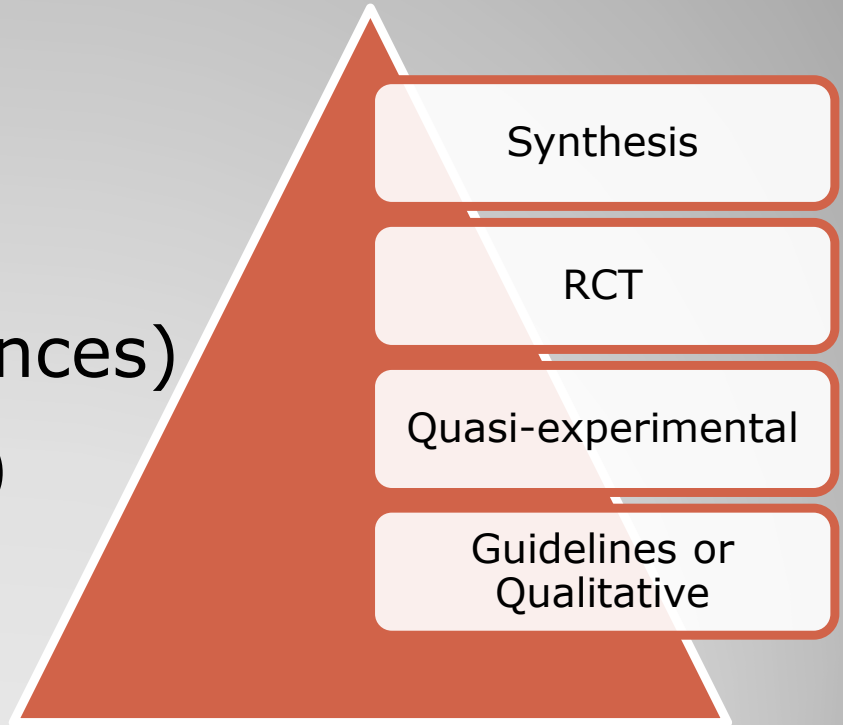
PICO question to critically analyze research reports

Critical Analysis (to take apart)

- Methodology
  - Design
  - Setting
  - Population
  - Sample
  - Independent variable
  - Tools to measure
  - Outcome variable
- Key findings (< 3)
- Clinical Meaningfulness (1)

| Synthesis |
| RCT |
| Quasi-experimental |
| Guidelines or Qualitative |
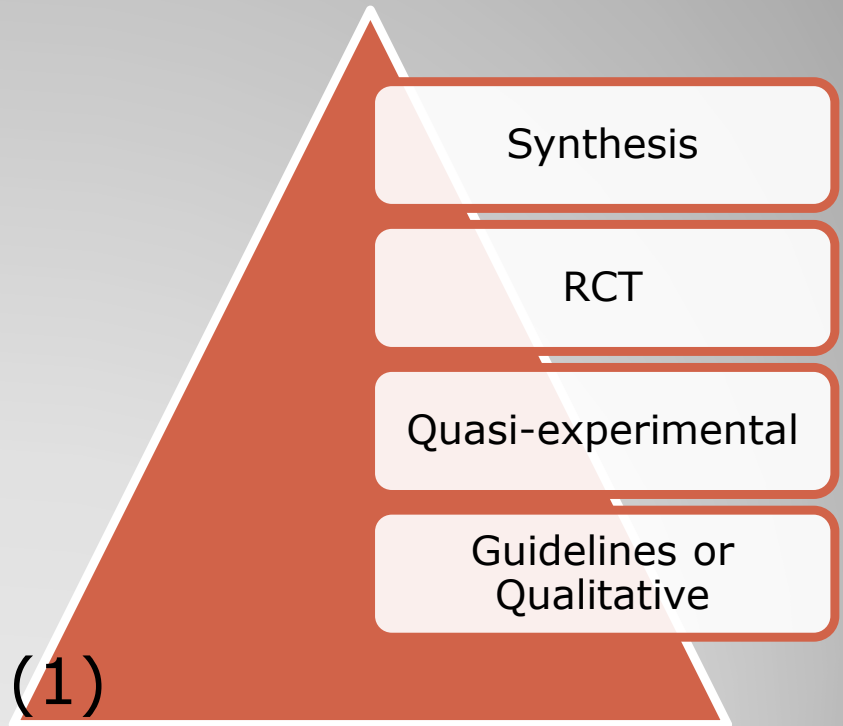
PICO question to critically analyze research reports

Clinical Meaningfulness (synthesis)

What is the answer to the research question?

In expectant mothers, does elective induction of labor versus spontaneous labor carry more risk of physiological morbidity to mother or infant?

*Very difficult for students to do without significant coaching.

PICO question to synthesize findings

Clinical Meaningfulness (evaluate)

The incident rate of uterine rupture to be 9.8 per 1000 vaginal births after cesarean sections (VBAC). The highest risk of uterine rupture occurred in nulliparous women and in women who had VBAC deliveries induced and augmented sequentially with prostaglandin and Pitocin. Level I, II, and III studies consistently reported that women receive inaccurate risk/benefit information necessary to facilitate informed decision.

PICO question to evaluate evidence in relation to the question.

Search strategy

"If I had to choose the ONE thing that I felt was most important about this class,

it's that we know so much more about how to pick good and credible articles. We

learned (the hard way) that not all articles are created equal and, for me, this was

the most important lesson to have learned."

Lessons Learned

Levels of Evidence

"I have learned that there is more to researching a topic than just going out there, grabbing any article I "think" applies and running with the information they provide… I really wish that this method of research was introduced to us before our last semester in nursing school, like in junior high."
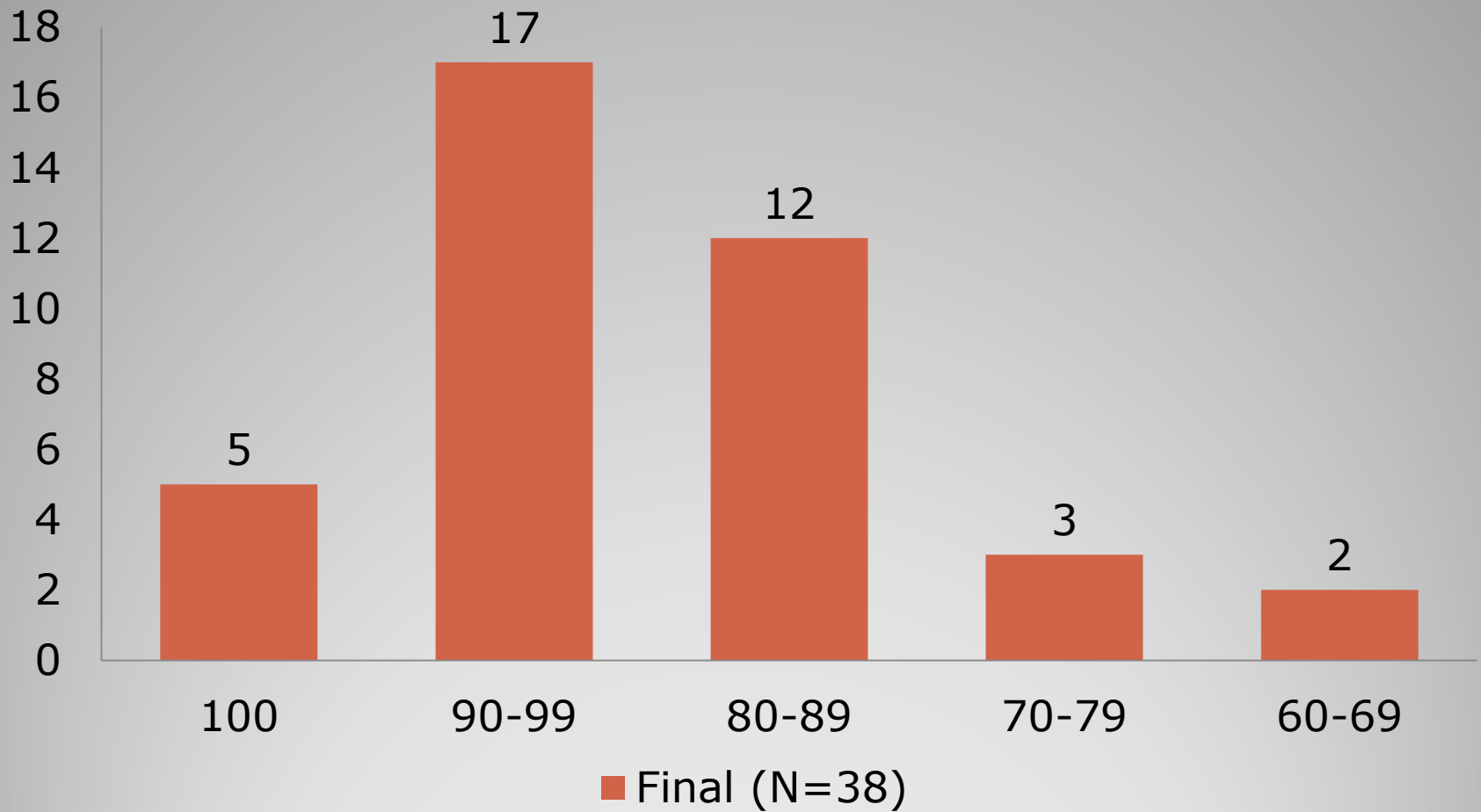
Lessons Learned

Critical appraisals

"Being able to attempt multiple critical appraisals on a variety of research articles in almost a trial and error fashion was probably one of the better teaching strategies. I have learned a lot by working to solve problems and taking the time to think, rather than simply memorize."

Lessons Learned

Critical Reflection

"For the first time I have realized that reflection – taking time to sit back and think about what we have actually learned and achieved in this class is very important and most of the time we miss out on this important thing in life."

Lessons Learned

Competency Outcomes