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## Promoting Personal Agency in Nursing Students' Ability to Evaluate Evidence

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## Evaluation of Evidence Assignment

Kaitlyn Kelly RN, MS

In NURS450: Transition to Practice Seminar

Course Objective: Access and evaluate information for effective, efficient, and ethical use in a variety of contexts

In NURS450: Transition to Practice Seminar, the senior capstone for graduating nursing students and an essential studies class focused on information literacy, we examine research studies with a CASP Programme checklist, which helps students understand the validity and applicability of published research to their patient populations. In this assignment AI, specifically ChatGPT, is used to generate a fictional randomized controlled trial. Students are guided through the checklist and a group discussion on whether that study meets the requirements to be considered valid and applicable to a local population (with the assumption that the study was real). The purpose is to develop students' agency in critiquing research, by starting with a study they know they will find issues with because it was AI generated. They will practice those skills on a real study for the second half of the assignment. Before the critique of the fictionalized study, the instructor would provide some background information on why the assignment was done as a group (instructor access only, not requiring a student account) and the limitations of the LLM ChatGPT as outlined by the following:

- This study is fictional—you'll definitely find problems with design because it's the product ChatGPT, not a nurse scientist who had the paper reviewed by peers before publication
- ChatGPT makes up citations, and does not always provide factual information, just predictive text
- It is trained on a knowledge base that ends at 9/2021 and is not the most current
- It reflects human biases around race, gender, etc. due to the source information it was trained on
- It doesn't access information from the internet—it doesn't "think"
- It collects data through user interaction (built that way, costs \$3 million to run monthly with the objective of data collection) NEVER INPUT PERSONAL INFORMATION OR PROTECTED HEALTH INFORMATION OF PATIENTS
- There are ethical costs to its use: Human labor, exploitation, ecological impacts
- Missing human thought: cultural contexts, inferring potential biases, etc.

After this introduction, introduce the CASP Programme checklist and critique the AI generated study below with students as a group. (See assignment given to students for directions)

Prompt to ChatGPT provided 8/15/2023:

"Write a publication of a randomized controlled trial to compare duration of labor with laboring patients who have an epidural who undergo regular position changes with those who have an epidural and do not undergo regular position changes. Include an abstract and a methods section in addition to the conclusion. Provide statistics to compare test and control groups."

Chat GPT Transcript:

**Title:** Comparison of Labor Duration in Patients with Epidural Analgesia: Effects of Regular Position Changes vs. Limited Position Changes – A Randomized Controlled Trial

**Abstract:** Background: Epidural analgesia is commonly used to provide pain relief during labor, but its impact on labor duration is a subject of ongoing research. This randomized controlled trial aimed to investigate whether regular position changes during labor in patients with epidural analgesia have an effect on the duration of labor compared to those who remain in limited positions.

**Methods:** Laboring patients with epidural analgesia were randomly assigned to either the intervention group (regular position changes) or the control group (limited position changes). The primary outcome was the duration of the active phase of labor, measured from full cervical dilation (10 cm) to the point of fetal descent through the birth canal. Secondary outcomes included rates of instrumental deliveries, cesarean sections, and maternal satisfaction. Statistical analysis included t-tests, chi-square tests, and multivariate regression analysis.

**Results:** A total of 320 patients were included in the analysis, with 160 in each group. The mean duration of the active phase of labor was significantly shorter in the intervention group compared to the control group (mean difference: -1.23 hours, 95% CI: -2.05 to -0.41,  $p = 0.003$ ). The intervention group also exhibited a lower rate of instrumental deliveries (13.8% vs. 22.5%,  $p = 0.042$ ) and a higher maternal satisfaction score (8.5 vs. 7.2,  $p < 0.001$ ) compared to the control group. There was no significant difference in the rate of cesarean sections between the two groups (15.0% vs. 17.5%,  $p = 0.512$ ).

**Conclusion:** Regular position changes during labor in patients with epidural analgesia are associated with a shorter duration of the active phase of labor, reduced rates of instrumental deliveries, and higher maternal satisfaction. These findings suggest that encouraging laboring patients with epidurals to change positions regularly may have potential benefits in optimizing labor progress and maternal outcomes.

**Methods:** Study Design: This randomized controlled trial was conducted at a tertiary care center between [Start Date] and [End Date]. Laboring patients aged 18-40 years with singleton pregnancies, cephalic presentation, and requesting epidural analgesia were eligible for inclusion. Patients with contraindications to position changes or those requiring urgent delivery were excluded. After obtaining informed consent, eligible patients were randomized using computer-generated randomization sequences to either the intervention group (regular position changes) or the control group (limited position changes).

**Intervention:** In the intervention group, laboring patients with epidural analgesia were encouraged to change positions at least every hour during the active phase of labor. Position changes included lateral, upright, and hands-and-knees positions. In the control group, patients were allowed to change positions according to their comfort, without any specific intervention to encourage regular position changes.

**Outcomes:** The primary outcome was the duration of the active phase of labor, defined as the time from full cervical dilation (10 cm) to fetal descent through the birth canal. Secondary outcomes included rates of instrumental deliveries, cesarean sections, and maternal satisfaction assessed using a Likert scale.

**Statistical Analysis:** Statistical analysis was performed using appropriate tests, including t-tests for continuous variables, chi-square tests for categorical variables, and multivariate regression analysis to adjust for confounding factors.

Conclusion: This randomized controlled trial provides evidence that laboring patients with epidural analgesia who undergo regular position changes during the active phase of labor experience a significantly shorter duration of labor, reduced rates of instrumental deliveries, and higher maternal satisfaction compared to those with limited position changes. Encouraging regular position changes in this population could be an effective strategy to optimize labor progress and improve maternal outcomes. Further research is warranted to explore the long-term effects and generalizability of these findings.

After this group exercise emphasize their authority to critique texts for validity as nursing students—even those published in peer-reviewed journals by nurse scientists. Have the students then use the CASP Programme checklist on a real RCT. Have them write a short reflection on their findings comparing the RCT generated by AI and one from real life and their comfort critiquing research.

Personal AI Guidelines that guided the development of this assignment:

Generative AI technology has the potential to both assist and hinder student learning,

AI tools should be used to enhance student learning to meet the objectives of the course. Example uses to increase student learning may be brainstorming topics or arguments, refining writing, thinking critically about the source of and validity of information, and discussing the use of AI in patient care (for example, sepsis warnings in electronic health records) and student learning (Computer Adaptive Testing).

Inappropriate uses of AI tools would be those that hinder student learning. This might include instances of presentation of AI generated text as original student work without citation, or failing to check AI generated work for validity of argument or sources.

If a student uses AI to complete an assignment, they should credit the program(s) appropriately in their references list.

## Evaluation of Evidence Assignment

**Due date:** *In-class assignment*

### **Purpose:**

**Course Objective:** Access and evaluate information for effective, efficient, and ethical use in a variety of contexts

**Lesson Objective:** Students will integrate theoretical nursing concepts, clinical reasoning, patient preferences, and evidence in planning, implementing, and evaluating outcomes of care.

- In this activity, students will evaluate two randomized controlled trials (RCTs) using the CASP Programme checklist for validity and applicability to use in local patient populations. The first RCT will be examined in discussion format as a large class and was generated by a Large Language Model Generative Artificial Intelligence program (ChatGPT). During this phase of the assignment, students will identify inconsistencies, design flaws, and other issues with the fictional RCT to build skills in evaluating research and develop confidence in this work. Individually, students will then complete the CASP Programme checklist for another RCT.

### **Skills:**

- *Analyzing study design for validity, result effects, study methodology, and local applicability of a randomized controlled trial using a systematic checklist*
- *Evaluating the intervention used in the randomized controlled trial for use in nursing practice*

**Attitude:** This assignment will also help you to become more confident in your identity as a nurse scholar, able to interpret research to improve patient care outcomes

### **Task:**

*Follow the link below to the provided checklist. We will practice the use of this checklist as a large group in class. After this introduction, you will fill out the same checklist using a real study.*

[Critical Appraisal Checklist Randomised Controlled Trial Word Document Link](#)

### **Criteria for Success:**

Students will be successful if feel more comfortable interpreting and analyzing research for application to patient care, and if they display understanding of each of the sections in the CASP Programme Checklist. The rubric for evaluation is attached.

The author developed an earlier version of this template at the University of Illinois, Urbana-Champaign.