Test Bank for

EVIDENCE-BASED GERIATRIC NURSING PROTOCOLS FOR BEST PRACTICE

Sixth Edition

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SPRINGER PUBLISHING COMPANY

Springer Publishing Company, LLC
11 West 42nd Street
New York, NY 10036
www.springerpub.com

ISBN: 978-0-8261-5187-2

Chapter 1: Developing and Evaluating Clinical Practice Guidelines: A Systematic Approach

Multiple Choice Test Questions

1. Models of evidence-based practice (EBP) involve which of the following steps when determining the process of developing protocols? Select all that apply.
   *a. Develop an answerable question
   b. Compare the evidence to what one feels to be true
   *c. Critically appraise the evidence
   *d. Locate the best evidence

Rationale: Evidence-based practice (EBP) involves five steps:
1. Develop an answerable question
2. Locate the best evidence
3. Critically appraise the evidence
4. Integrate evidence into practice using clinical expertise with attention to patient's values and perspectives; and
5. Evaluate the outcome(s)

Comparing the evidence to what one feels to be true is not a part of evidence-based practice.

2. When critically evaluating the evidence used in a study, which level of evidence is at the bottom of the level of evidence (LOE) hierarchy pyramid?
   *a. Opinions of respected authorities
   b. Systematic reviews of Clinical Practice Guidelines (CPGs)
   c. Single experimental studies (Randomized Controlled Trials)
   d. Nonexperimental studies

Rationale: The level of evidence (LOE) hierarchy pyramid highlights six levels of evidence. Opinions of respected authorities, internationally or nationally known, based on their clinical experience or the opinions of an expert committee, including regulatory or legal opinions, form the lowest level of evidence (i.e., Level VI, at the bottom of the LOE pyramid). The highest level of evidence, at the top of the pyramid, is comprised of systematic reviews, meta-analyses, or structured integrative reviews of evidence. Evidence judged to be at Level II comes from a single randomized controlled trial. Nonexperimental studies are considered Level IV evidence.

3. Which of the following questions are based on the PICO format? Select all that apply.
   *a. In patients with osteoarthritis of the knee, is hydrotherapy more effective than traditional physiotherapy in relieving pain?
   *b. For obese children, does the use of community recreation activities compared to educational programs on lifestyle changes reduce the risk of diabetes mellitus?
   *c. For deep vein thrombosis, is D-dimer testing or ultrasound more accurate for diagnosis?
   d. Do adults who binge drink have higher mortality rates?

Rationale: PICO stands for:
P - Population or patient problem
I - Intervention
C - Comparison group or standard practice
O - Outcomes

PICO format is used to frame the research question and facilitate literature search. Each research question is narrowed down to clearly state the population or the patient problem, the intervention being studied, the comparison group, and the outcome measures. In the question "In patients with osteoarthritis of the knee, is hydrotherapy more effective than traditional physiotherapy in relieving pain?", patients with osteoarthritis form the population, hydrotherapy is the intervention that is being compared with traditional physiotherapy, and pain relief is the expected outcome. In the question "For obese children, does the use of community recreation activities compared to educational programs on lifestyle changes reduce the risk of diabetes mellitus?", obese children form the study population, use of community recreation services is the intervention, being compared to educational programs on lifestyle changes, and reducing the risk of diabetes mellitus is the expected outcome. In the question "For deep vein thrombosis, is D-dimer testing or ultrasound more accurate for diagnosis?", deep vein thrombosis is the patient problem, D-dimer testing is the intervention, being compared to ultrasound for accuracy of diagnosis, that is the expected outcome. The question "Do adults who binge drink have higher mortality rates?" does not follow the PICO format. In this question, adults form the population being studied, binge drinking is the intervention, and higher mortality rate is the outcome being studied. However, the comparison group is not defined and stated in the question.

4. Which of the following statements regarding the AGREE II instrument are true? Select all that apply.
   *a. The AGREE instrument has 6 quality domains with 23 items divided among these domains.
   *b. Each domain is rated on a 4-point Likert-type scale from "strongly disagree" to "strongly agree" by a number of appraisers.
   c. The six domain scores are aggregated into a single quality score.
   d. The reliability of the AGREE instrument is decreased when each guideline is appraised by more than one appraiser.

Rationale: The AGREE II instrument has six quality domains: scope and purpose, stakeholder involvement, rigor of development, clarity and presentation, application, and editorial independence. A total of 23 items are divided into these domains. Each domain is rated on a 4-point Likert-type scale from "strongly disagree" to "strongly agree" by a number of appraisers. Appraisers evaluate how well the guideline they are assessing meets the criteria of the six quality domains. The six domain scores are independent and should not be aggregated into a single quality score. The reliability of the AGREE instrument is increased, not decreased, when each guideline is appraised by more than one appraiser.

5. Four appraisers give the following scores, as shown in the table below, for domain 1 (Scope & Purpose) in the AGREE II instrument. What will be the scaled domain score?

	Item 1	Item 2	Item 3	Item 4
Appraiser 1	5	6	6	17
Appraiser 2	6	6	7	19
Appraiser 3	2	4	3	9
Appraiser 4	3	3	2	8
	16	19	18	53

   a. 53%
   *b. 57%
   c. 47%
   d. 19%

Rationale:

Maximum possible score = 7 (strongly agree) × 3 (items) × 4 (appraisers) = 84
Minimum possible score = 1 (strongly disagree) × 3 (items) × 4 (appraisers) = 12

The scaled domain score will be:

$$\frac{\text{Obtained score} - \text{Minimum possible score}}{\text{Maximum possible score} - \text{Minimum possible score}}$$

$$\frac{53 - 12}{84 - 12} \times \frac{100}{72} = 41 \times 100 = 0.5694 \times 100 = 57\%$$

6. A 59-year-old patient is diagnosed with acute biliary pancreatitis and noninfected pancreatic necrosis on contrast enhanced computed tomography scan. The clinician plans to start a course of prophylactic antibiotics. Which study design is appropriate to evaluate if antibiotics prevent infection of noninfected pancreatic necrosis and decrease mortality?
   a. Case-controlled study
   b. Randomized controlled trial
   *c. Systematic review and meta-analysis
   d. Prospective cohort study

Rationale: Systematic review and meta-analysis of previous randomized control trials to evaluate use of antibiotics in preventing infection of noninfected pancreatic necrosis and decreasing mortality will be the appropriate study design in this case. Systematic reviews and meta-analysis constitute the highest level of evidence (Level I according to the level of evidence hierarchy pyramid).

Case-control studies are observational studies used to identify factors that may contribute to a medical condition by comparing subjects who have that condition/disease (the "cases") with subjects who do not have the condition/disease but are otherwise similar (the "controls'). Case-control studies require fewer resources but more time; also the evidence obtained is inferior to other types of study designs (Level IV on the level of evidence hierarchy pyramid). Thus, this will not be an appropriate study design in this case. A randomized control trial is a study design with two study groups: the experimental group, where the intervention being studied is applied; and the control group, where no intervention is used or a placebo is used instead. A randomized control trial can be used in this case to evaluate if antibiotics prevent infection of noninfected pancreatic necrosis and decrease mortality. However, it will be difficult to find matching controls (with the same stage and severity of disease, and other matching demographic characteristics). Also, the study will require significant time, as the two study groups will have to be followed up for a significant period of time to see results. The evidence obtained from a single randomized control trial will still be inferior (Level II on the level of evidence hierarchy pyramid) as compared to that from meta-analysis and systematic review. A prospective cohort study follows over time a group of similar individuals (cohorts) who differ with respect to certain factors under study to determine how these factors affect rates of a certain outcome. Such studies are important for research on the etiology of diseases. In a prospective cohort study, at the time of enrolling subjects and collecting baseline exposure information, none of the subjects have developed any of the outcomes of interest. After baseline information is collected, subjects are followed "longitudinally," i.e., over a period of time, usually for years, to determine if and when they become diseased and whether their exposure status changes outcomes. Thus, this will not be an appropriate study design to assess impact of an intervention.

7. In a study, patients with arthritic knee pain were identified and randomly allocated to two groups. One group of patients was given Ibuprofen for control of pain, and the other group was given a placebo. According to the level of evidence (LOE) hierarchy pyramid, what level of evidence will the results from this study generate??
   a. Level VI
   b. Level V
   *c. Level II
   d. Level III

Rationale: The study is a randomized control trial with two study groups: the experimental group, where the intervention—in this case Ibuprofen—is given; and the control group, where a placebo is used instead. Thus, this study will generate Level II evidence according to the level of evidence (LOE) hierarchy pyramid. Level VI is the lowest level of evidence in the LOE hierarchy pyramid and is made up of the opinions of respected authorities based on their clinical experience or the opinions of an expert committee, including regulatory or legal opinions. Level V evidence includes narrative literature reviews, case reports that are systematically obtained and of verifiable quality, or program evaluation data. A quasi-experimental study, such as a nonrandomized controlled single group pretest/posttest, time series or matched case-controlled study, is considered Level III evidence.

8. In a randomized double-blind trial to compare a new analgesic with a placebo for control of pain in arthritis, subjects report less pain while using the analgesic. The "p" value for the difference in pain scores between the two regimes is 0.002. What conclusions can be drawn from this study? Select all that apply.
   *a. The drug is an effective analgesic.
   *b. There is evidence that the drug reduces pain in arthritis.
   c. The drug is better than currently prescribed analgesics.
   d. There is a 2% probability that the difference in pain scores is obtained only due to chance.

Rationale: The results of the study show a "p" value of 0.002 for difference in pain scores between the two regimes. It can be concluded that the drug is an effective analgesic and provides evidence that the drug reduces pain in arthritis. It is not possible to conclude whether the new analgesic is better than the currently prescribed analgesics as the study does not compare it with the current regime, but rather uses a placebo. The "p" value for difference in pain scores between the two regimes is 0.002. This means there is a probability of 0.2% that this difference is obtained only due to chance (and 99.8% probability that the difference is not due to chance).

9. A study is conducted to compare chemotherapy given at home with outpatient treatment for rectal cancer. The study enrolls 97 patients. Of these patients, 42 are treated at an outpatient clinic and 45 are treated at home. Treatment related toxicity in both groups is obtained and compared. What is the study design in this case?
   a. Randomized control trial
   *b. Observational study
   c. Case-control study
   d. Quasi-experimental study

Rationale: This study is an observational study design where two methods of providing treatment are being compared: chemotherapy given at home versus outpatient treatment for patients with rectal cancer. No intervention is applied in this study. A randomized control trial is comprised of two study groups: the experimental group, where the intervention being studied is applied; and the control group, where no intervention is used or a placebo is used instead. Case–control studies are observational studies used to identify factors that may contribute to a medical condition by comparing subjects who have that condition/disease (the "cases") with subjects who do not have the condition/disease but are otherwise similar (the "controls"). A quasi-experimental study is a non-randomized experimental study that can be used to assess causal impact of an intervention on a population.

10. A hospital patient care program specifies use of the STRATIFY instrument to measure the risk of falls in older adult inpatients. What is this an example of?
   a. A guideline
   *b. A protocol
   c. A standard of practice
   d. A recommendation

Rationale: A protocol is a detailed guide for approaching a clinical problem and is tailored to a specific situation. It is specific and rigid, not leaving much room for adjustment and change. Use of the STRATIFY instrument to measure the risk of falls in older adult patients is an example of a protocol. A guideline is a general rule or a principle that is more flexible and can be adapted within a large variety of settings. Standards of practice are not specific or necessarily evidence-based; rather these are generally accepted, formal, and published frameworks of practice. A recommendation is a suggestion for practice, not necessarily sanctioned by a formal, expert group.