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Chapter 02: Evidence-Based Decision Making

Newman: Clinical Periodontology for the Dental Hygienist, 1st Edition

MULTIPLE CHOICE

1. Using evidence from medical literature to answer questions, direct clinical action, and guide practice was pioneered by what university in the 1980s?
 - a. Stanford University
 - b. Oxford University
 - c. McMaster University
 - d. McGill University

ANS: C

Using evidence from the medical literature to answer questions, direct clinical action, and guide practice was pioneered at McMaster University in Ontario, Canada, in the 1980s.

DIF: Recall

REF: p. 10

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases

2. What word can be defined as “the synthesis of all valid research that answers a specific question and that, in most cases, distinguishes it from a single research study?”
 - a. Theory
 - b. Evidence
 - c. Hypothesis
 - d. Conclusion

ANS: B

Evidence is considered the synthesis of all valid research that answers a specific question and that, in most cases, distinguishes it from a single research study.

DIF: Comprehension

REF: p. 10

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases

3. Which of the following is one of the two fundamental principles of evidence-based decision making (EBDM)?
 - a. Evidence alone is never sufficient to make a clinical decision.
 - b. Always critically apply the results of evidence in clinical practice.
 - c. Rely on previously discovered information to formulate hypotheses.
 - d. Evaluate processes and performance throughout the process.

ANS: A

The two fundamental principles of evidence-based decision making (EBDM) are: (1) evidence alone is never sufficient to make a clinical decision, and (2) hierarchies of quality and applicability of evidence exist to guide clinical decision making.

DIF: Comprehension

REF: p. 10

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases

4. Which of the following is an example of a skill or ability that is needed to apply an evidence-based decision-making process?
 - a. Conduct a computerized or manual search with ample efficiency for finding

- evidence with which to answer the question.
- b. Keep the results applicable only to the question at hand.
 - c. Convert information needs and problems into theories.
 - d. Critically appraise the evidence for its validity and usefulness.

ANS: D

The skills and abilities needed to apply an evidence-based decision-making process can be found in 2.1 of the textbook, and are also listed here: (1) convert information needs and problems into clinical questions so that they can be answered, (2) conduct a computerized search with maximum efficiency for finding the best external evidence with which to answer the question, (3) critically appraise the evidence for its validity and usefulness (clinical applicability), (4) apply the results of the appraisal, or evidence, in clinical practice, and (5) evaluate the process and your performance.

DIF: Comprehension

REF: p. 11

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases

5. PICO stands for four components of a well-built question. What does the “I” stand for?
- a. Intervention
 - b. Information
 - c. Intuition
 - d. Inclusion

ANS: A

PICO stands for Population, Intervention, Comparison, and Outcomes.

DIF: Recall

REF: p. 11

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases

6. A controlled trial is a methodology of choice that can be used to answer what type of question?
- a. Etiology, causation, harm
 - b. Diagnosis
 - c. Therapy, prevention
 - d. Prognosis

ANS: B

A controlled trial can be used to answer a question related to a diagnosis because it measures the reliability of a particular diagnostic measure for a disease against the “gold standard” diagnostic measure for the same disease. Refer to Table 2.1 in the textbook for more information.

DIF: Comprehension

REF: p. 14

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases

7. Evidence-based article reviews are an example of which type of source of evidence?
- a. Primary source
 - b. Expert source
 - c. Secondary source
 - d. Highest source

ANS: C

Primary sources are original research studies and publications that have not been filtered or synthesized, such as an RCT or cohort study. Secondary sources are synthesized studies and publications of the already-conducted primary research, which include clinical practice questions (CPGs), SRs, MAs, and evidence-based article reviews and protocols.

DIF: Comprehension

REF: p. 12

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases

8. Clinical practice guidelines are considered a secondary source of evidence and are at which level of evidence?
- The lowest level of evidence
 - The second lowest level of evidence
 - The second highest level of evidence
 - The highest level of evidence

ANS: D

Clinical practice guidelines are a secondary source of evidence and is at the top of the hierarchy of evidence. CPGs should be based on the best available scientific evidence, typically from MAs and SRs, which put together all that is known about a topic in an objective manner.

DIF: Application REF: p. 15

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases

9. Which of the following is the National Library of Medicine's premier bibliographic database covering the fields of medicine, nursing, dentistry, veterinary medicine, the health care system, and the preclinical sciences?
- MEDLINE
 - DOCLINE
 - LOVELINE
 - PUBLINE

ANS: A

MEDLINE is the National Library of Medicine's premier bibliographic database covering the fields of medicine, nursing, dentistry, veterinary medicine, the health care system, and the preclinical sciences. It contains bibliographic citations and author abstracts from more than 5200 biomedical journals published in the United States and 80 other countries.

DIF: Recall REF: p. 16

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases

10. Although the use of evidence to help guide clinical decisions is not new, which of the following aspects of EBM are considered new?
- The methods of generating high-quality evidence, such as nonrandomized trials (NRTs) and other methods
 - The statistical tools for synthesizing and analyzing the evidence (systematic reviews [SRs] and meta-analyses [MA])
 - The way in which dental care professionals use evidence to steer patient decisions toward a common goal
 - The usage of current best evidence to sometimes replace clinical expertise or input from the patient

ANS: B

The use of evidence to help guide clinical decisions is not new. However, the following aspects of EBM are new: (1) the methods of generating high-quality evidence, such as randomized controlled trials (RCTs) and other well-designed methods, (2) the statistical tools for synthesizing and analyzing the evidence (systematic reviews [SRs] and meta-analyses [MA]); and (3) the ways of accessing evidence (electronic databases) and applying it (evidence-based decision making [EBDM] and practice guidelines).

DIF: Comprehension

REF: p. 10

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases

11. Which of the following is the definition for *evidence-based dentistry*?
- The synthesis of all valid research that answers a specific question and that, in most cases, distinguishes it from a single research study.
 - The integration of the best research evidence with our clinical expertise and our patient's unique values and circumstances.
 - An approach to oral health care that requires the judicious integration of systematic assessments of clinically relevant scientific evidence, relating to the patient's oral and medical condition and history, with the dentist's clinical expertise and the patient's treatment needs and preferences.
 - A structured process that incorporates a formal set of rules for interpreting the results of clinical research and places a lower value on authority or custom.

ANS: C

Evidence can be defined as "the synthesis of all valid research that answers a specific question and that, in most cases, distinguishes it from a single research study." *Evidence-based medicine* can be defined as "the integration of the best research evidence with our clinical expertise and our patient's unique values and circumstances." *Evidence-based dentistry* can be defined as "an approach to oral health care that requires the judicious integration of systematic assessments of clinically relevant scientific evidence, relating to the patient's oral and medical condition and history, with the dentist's clinical expertise and the patient's treatment needs and preferences." *Evidence-based decision making* is "a structured process that incorporates a formal set of rules for interpreting the results of clinical research and places a lower value on authority or custom."

DIF: Comprehension

REF: p. 10

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases

12. The first step in evidence-based decision making (EBDM) is:
- asking the right question.
 - conducting computerized research.
 - searching for and acquiring evidence.
 - appraising the evidence.

ANS: A

The first step in evidence-based decision making (EBDM) is asking the right question.

DIF: Recall

REF: p. 11

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases

13. The combination of _____ and good evidence allows health care professionals to apply the benefits from clinical research to patient care.
- technology
 - good doctors
 - practice
 - teamwork

ANS: A

The combination of technology and good evidence allows health care professionals to apply the benefits from clinical research to patient care.

DIF: Recall

REF: p. 11

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases

14. What can be a challenge when using EBDM?
- When only one research study is available on a particular topic.
 - The fact that technology has not caught up to the needs of the process.
 - When the clinician is forced to focus on what he or she and the patient believe to be the most important single issue and outcome.
 - The fact that hierarchies of the types of evidence exist.

ANS: A

The challenge in using EBDM arises when only one research study is available on a particular topic, or when limited research is available (and it is weak in quality or poorly conducted).

DIF: Comprehension

REF: p. 12

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases

15. Which of the following is true about guidelines in the dental industry?
- Guidelines need to be strictly followed and never questioned.
 - Guidelines are important to have in place so that dental care professionals do not veer from the course or goal.
 - Guidelines are meant to be followed only by the dentist, not by the support staff.
 - Guidelines will change over time as evidence evolves.

ANS: D

Guidelines will change over time as evidence evolves, thereby underscoring the importance of keeping current with scientific literature.

DIF: Comprehension

REF: p. 15

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases

16. Which of the following can be defined as “a statistical process used when the data from the individual studies in the systematic review can be combined into one analysis?”
- Clinical practice guidelines
 - Case reports
 - Meta-analysis
 - Scientific process

ANS: C

Meta-analysis (MA) is a statistical process used when the data from the individual studies in the systematic review (SR) can be combined into one analysis. When data from these studies are pooled, the sample size and power usually increase.

DIF: Comprehension

REF: p. 16

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases

17. The highest level of evidence associated with questions about therapy or prevention is from:
- CPGs based on MAs and/or SRs of inception cohort studies.
 - CPGs based on MAs and/or SRs of RCT studies.
 - CPGs based on MAs and/or SRs about case reports.
 - CPGs based on MAs and/or SRs about editorials.

ANS: B

The highest level of evidence associated with questions about therapy or prevention is from CPGs based on MAs and/or SRs of RCT studies. The highest level of evidence associated with questions about prognosis is from CPGs based on MAs and/or SRs of inception cohort studies.

DIF: Comprehension

REF: p. 16

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases

18. International evidence-based groups have made appraising evidence easier by developing appraisal forms and checklists that guide the user through a structured series of what types of questions?
- Open-ended questions
 - Specific and measurable questions
 - YES/NO questions
 - PICO questions

ANS: C

International evidence-based groups have made appraising evidence easier by developing appraisal forms and checklists that guide the user through a structured series of “YES/NO” questions to determine the validity of the individual study or SR. Refer to Table 2.4 in the textbook.

DIF: Comprehension

REF: p. 17

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases

19. What does CASP stand for?
- Continuous Advancement Skills Program
 - Critical Analysis Skills Program
 - Continuous Allocation Skills Program
 - Critical Appraisal Skills Program

ANS: D

CASP, which is an example of a critical analysis guide, stands for “Critical Appraisal Skills Program.”

DIF: Recall

REF: p. 17

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases

20. Which of the following is an example of a question that can be used to evaluate the effectiveness of the EBDM process?
- a. Would more people want to have participated in this process?
 - b. Did the selected intervention or treatment achieve the desired result?
 - c. Do we want to continue this process at a later date?
 - d. Did the hypothesis turn out to be the actual outcome of the process?

ANS: B

The final steps in the EBDM process are to evaluate the effectiveness of the intervention and clinical outcomes and to determine how effectively the EBDM process was applied. For example, one question to ask in evaluating the effectiveness of the intervention is, “Did the selected intervention or treatment achieve the desired result?”

DIF: Application REF: p. 18

TOP: NBDHE; 4.1 Etiology and pathogenesis of periodontal diseases