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Editorial

Research protocols and guidelines for evidence-based dental research

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The goal of the evidence-based approach is to close the knowledge gap between research and practice while also raising the standard of healthcare. It was initially used in the medical field. "Conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients" was Sackett's original definition of it. The American Dental Association (ADA) defines evidence-based dentistry (EBD) as a method of making decisions about oral health care that calls for the careful integration of the dentist's clinical expertise, the patient's needs and preferences, and a systematic assessment of clinically relevant scientific evidence pertaining to the patient's oral health, medical condition, and history.[1]

The established frameworks and best practices known as research protocols and guidelines for evidence-based dentistry are intended to guarantee the rigorous, moral, and trustworthy conduct of dental research. Here's a summary of the essential elements:

1. Developing the Research Question

PICO Framework: To formulate a precise and targeted research question, define the Population, Intervention, Comparison, and Outcome.

2. Literature Review

Systematic evaluation: To identify gaps and support the research, conduct a comprehensive and methodical evaluation of the body of existing literature.

3. Designing the Study

In clinical research, randomized controlled trials (RCTs) are regarded as the gold standard. Cohort studies monitor a group of individuals across time to evaluate the impact of particular treatments or exposures.

Case-Control Studies: Compare patients with a condition to those without to identify factors that may contribute to the condition.

Cross-sectional studies: Analyze data from a population at one particular period in time.

4. Ethical Considerations

Make sure that each participant provides informed permission.

Obtain permission from the appropriate institutional review boards or ethical committees.

Maintaining patient data privacy and confidentiality is important.

5. Sampling and Recruitment

Describe the populace: Define the parameters for inclusion and exclusion. Method of Sampling: Select a suitable

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sample technique (e.g., stratified sampling, random sampling). Calculating Sample Size: Find out how big of a sample is required to have sufficient power.

6. Collection of the Data

To guarantee consistency and dependability, employ standardized procedures for gathering data.Training and Calibration: Ascertain that the doctors and researchers who are participating are suitably trained and calibrated.

7. Data Management

Data Entry and Storage: When entering and storing data, use trustworthy and secure techniques. Execute protocols to guarantee data completeness and accuracy as part of quality control.

8. Data Analysis

Statistical Techniques: To analyze the data, apply the relevant statistical techniques. Software Tools: For data analysis, make use of dependable software tools.

9. Statistical Analysis

Plan for Data Analysis: Prior to starting data collecting, create a thorough plan for statistical analysis. Use statistical techniques that are appropriate for the research topic and study design. Software: Make use of reliable statistical programmes (e.g., SAS (Statistical Analysis Software), R (programming language), SPSS (Statistical Package for Social Science).[2]

10. Reporting Results

CONSORT Guidelines: Report RCTs (Randomized controlled trials) in accordance with the Consolidated Standards of Reporting Trials (CONSORT).

PRISMA Guidelines: When conducting systematic reviews, adhere to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA).

STROBE Guidelines: For observational studies, adhere to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines.

11. Critical Appraisal

Evaluation of Bias: Examine and rectify any possible biases in the research design, data gathering, and analysis.

Peer Review: To verify the results, submit the study for review by other researchers.

12. Reporting and Dissemination

Transparent Reporting: Adhere to standards for reporting that include STROBE for observational studies, PRISMA for systematic reviews, and CONSORT for randomized controlled trials.

Scholarly Journals: Publicize results in journals with peer review.

Workshops and Conferences: Deliver research findings in workshops and conferences run by professionals.[3]

13. Implementation in Practice

Knowledge Translation: Create plans for integrating study results into medical procedures. Contribute to the creation of clinical guidelines by using the study findings as a basis.

14. Continuous Review and Improvement

Ongoing Education: To stay current on the newest techniques and best practices, partake in ongoing education.

Feedback Loop: To enhance upcoming research, take into account input from practitioners and colleagues. Researchers may make sure that their studies are ethical, strong, and provide important evidence for the field of dentistry by adhering to these rules and recommendations. Dental researchers can provide high-quality, trustworthy, and clinically relevant evidence to guide and enhance dental practice by following these meticulous study processes.

Dental professionals must create plans that will allow them to apply the results of pertinent, well-designed, practice-oriented research studies if they are to optimize their skills, attain practice excellence, and offer high-quality, reasonably priced treatments.

15. Conflict of Interest

None.

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