



Research Methodology (Introductory)

Year 2 — Bachelor of Dental Surgery

Reference and Resource List — Chapters 1 to 16

Supporting the MCQ, SBA, SAQ and flashcard question bank

BM Education FZE

Disclaimer

Questions in this bank were generated with the assistance of artificial intelligence and reviewed against the references listed. They are provided for educational revision only, are not a substitute for prescribed textbooks, clinical guidelines or supervised clinical training, and no warranty is given as to their accuracy or completeness.

References are presented in Vancouver style. Part 1 lists the core sources that apply across the whole subject; Part 2 lists, for each chapter, the relevant sections of those core texts together with sources specific to that chapter. Numbers in square brackets in Part 2 refer to the core list in Part 1.

PART 1 — CORE REFERENCES (ALL CHAPTERS)

1.1 Principal texts — research methodology, epidemiology and clinical research design

1. Browner WS, Newman TB, Cummings SR, Grady DG, Huang AJ, Kanaya AM, Pletcher MJ. Designing Clinical Research. 5th ed. Philadelphia: Wolters Kluwer; 2022.
2. Greenhalgh T, Dijkstra P. How to Read a Paper: The Basics of Evidence-Based Healthcare. 7th ed. Hoboken (NJ): Wiley Blackwell; 2025.
3. Celentano DD, Szklo M. Gordis Epidemiology. 6th ed. Philadelphia: Elsevier; 2019.
4. Fletcher RH, Fletcher SW, Fletcher GS. Clinical Epidemiology: The Essentials. 6th ed. Philadelphia: Wolters Kluwer; 2020.
5. Park K. Park's Textbook of Preventive and Social Medicine. 28th ed. Jabalpur: Banarsidas Bhanot; 2025.
6. Bonita R, Beaglehole R, Kjellström T. Basic Epidemiology. 2nd ed. Geneva: World Health Organization; 2006.
7. Rothman KJ. Epidemiology: An Introduction. 2nd ed. New York: Oxford University Press; 2012.
8. Kumar R. Research Methodology: A Step-by-Step Guide for Beginners. 5th ed. London: SAGE Publications; 2019.

1.2 Dentistry-specific texts and dental public health

9. Peter S. Essentials of Public Health Dentistry (Community Dentistry). 7th ed. New Delhi: Arya (Medi) Publishing House; 2021.
10. Hiremath SS. Textbook of Preventive and Community Dentistry. 3rd ed. New Delhi: Elsevier India; 2016.
11. Daly B, Batchelor P, Treasure E, Watt R. Essential Dental Public Health. 2nd ed. Oxford: Oxford University Press; 2013.

12. Burt BA, Eklund SA. Dentistry, Dental Practice, and the Community. 6th ed. St Louis: Elsevier Saunders; 2005.
13. Hackshaw A, Paul E, Davenport E. Evidence-Based Dentistry: An Introduction. Oxford: Blackwell Munksgaard; 2006.
14. Richards D, Clarkson J, Matthews D, Niederman R. Evidence-Based Dentistry: Managing Information for Better Practice. London: Quintessence Publishing; 2008.

1.3 Biostatistics and quantitative methods

15. Bland M. An Introduction to Medical Statistics. 4th ed. Oxford: Oxford University Press; 2015.
16. Kirkwood BR, Sterne JAC. Essential Medical Statistics. 2nd ed. Oxford: Blackwell Science; 2003.
17. Petrie A, Sabin C. Medical Statistics at a Glance. 4th ed. Oxford: Wiley Blackwell; 2019.
18. Petrie A, Bulman JS. Statistics for Dentistry. 2nd ed. London: BDJ Books; 2006.
19. Altman DG. Practical Statistics for Medical Research. London: Chapman & Hall/CRC; 1991.
20. Daniel WW, Cross CL. Biostatistics: A Foundation for Analysis in the Health Sciences. 11th ed. Hoboken (NJ): Wiley; 2018.
21. Mahajan BK. Mahajan's Methods in Biostatistics for Medical Students and Research Workers. 9th ed. New Delhi: Jaypee Brothers Medical Publishers; 2018.
22. Field A. Discovering Statistics Using IBM SPSS Statistics. 6th ed. London: SAGE Publications; 2024.

1.4 Research ethics, good clinical practice and governance

23. World Medical Association. WMA Declaration of Helsinki: ethical principles for medical research involving human participants. JAMA. 2025;333(1):71–74. Available from: <https://www.wma.net/policies-post/wma-declaration-of-helsinki/>
24. International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use. ICH harmonised guideline: guideline for good clinical practice E6(R3). Geneva: ICH; 2025. Available from: <https://www.ich.org>
25. Council for International Organizations of Medical Sciences. International Ethical Guidelines for Health-related Research Involving Humans. 4th ed. Geneva: CIOMS; 2016. Available from: <https://cioms.ch>
26. National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. The Belmont Report: ethical principles and guidelines for the protection of human subjects of research. Washington (DC): US Department of Health, Education, and Welfare; 1979. Available from: <https://www.hhs.gov/ohrp/regulations-and-policy/belmont-report/index.html>
27. Indian Council of Medical Research. National Ethical Guidelines for Biomedical and Health Research Involving Human Participants. New Delhi: ICMR; 2017. Available from: <https://www.icmr.gov.in>
28. UK Health Departments. UK Policy Framework for Health and Social Care Research. London: Health Research Authority. Available from: <https://www.hra.nhs.uk>
29. World Health Organization. Standards and Operational Guidance for Ethics Review of Health-related Research with Human Participants. Geneva: WHO; 2011. Available from: <https://www.who.int>
30. Committee on Publication Ethics. Core practices. Eastleigh: COPE. Available from: <https://publicationethics.org/core-practices>
31. General Dental Council. Standards for the Dental Team. London: GDC; 2013. Available from: <https://www.gdc-uk.org>

1.5 Reporting guidelines and research transparency

32. EQUATOR Network. Enhancing the QUALity and Transparency Of health Research: reporting guideline library. Oxford: UK EQUATOR Centre. Available from: <https://www.equator-network.org>

33. Hopewell S, Chan AW, Collins GS, Hróbjartsson A, Moher D, Schulz KF, et al. CONSORT 2025 statement: updated guideline for reporting randomised trials. *BMJ*. 2025;389:e081123.
34. Chan AW, Boutron I, Hopewell S, Moher D, Schulz KF, Collins GS, et al. SPIRIT 2025 statement: updated guideline for protocols of randomised trials. *BMJ*. 2025;389:e081477.
35. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ*. 2021;372:n71.
36. von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. *Lancet*. 2007;370(9596):1453–7.
37. Gagnier JJ, Kienle G, Altman DG, Moher D, Sox H, Riley D. The CARE guidelines: consensus-based clinical case report guideline development. *J Clin Epidemiol*. 2014;67(1):46–51.
38. Ogrinc G, Davies L, Goodman D, Batalden P, Davidoff F, Stevens D. SQUIRE 2.0 (Standards for Quality Improvement Reporting Excellence): revised publication guidelines from a detailed consensus process. *BMJ Qual Saf*. 2016;25(12):986–92.
39. International Committee of Medical Journal Editors. Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals. ICMJE. Available from: <https://www.icmje.org>
40. Higgins JPT, Thomas J, Chandler J, Cumpston M, Li T, Page MJ, Welch VA, editors. *Cochrane Handbook for Systematic Reviews of Interventions*. Version 6.5. London: Cochrane; 2024. Available from: <https://www.cochrane.org/handbook>

1.6 Evidence appraisal, clinical audit and quality standards

41. Guyatt GH, Oxman AD, Vist GE, Kunz R, Falck-Ytter Y, Alonso-Coello P, et al. GRADE: an emerging consensus on rating quality of evidence and strength of recommendations. *BMJ*. 2008;336(7650):924–6.
42. OCEBM Levels of Evidence Working Group. The Oxford 2011 Levels of Evidence. Oxford: Centre for Evidence-Based Medicine, University of Oxford. Available from: <https://www.cebm.ox.ac.uk>
43. National Institute for Health and Care Excellence. Developing NICE Guidelines: The Manual. Process and methods guide PMG20. London: NICE. Available from: <https://www.nice.org.uk/process/pmg20>
44. Healthcare Quality Improvement Partnership. Best Practice in Clinical Audit. London: HQIP. Available from: <https://www.hqip.org.uk>
45. Scottish Dental Clinical Effectiveness Programme. Clinical guidance in dentistry. Dundee: SDCEP. Available from: <https://www.sdcep.org.uk>
46. Field JC, Cowpe JG, Walmsley AD. The Graduating European Dentist: a new undergraduate curriculum framework. *Eur J Dent Educ*. 2017;21(Suppl 1):2–10.

1.7 Key journals for currency

Journal of Dental Research • Community Dentistry and Oral Epidemiology • Journal of Dentistry • JDR Clinical & Translational Research • Evidence-Based Dentistry • British Dental Journal • International Dental Journal • Journal of Clinical Periodontology • Caries Research • Journal of Clinical Epidemiology • BMJ • The Lancet • European Journal of Dental Education

PART 2 — CHAPTER-SPECIFIC REFERENCES

Chapter 1 — Introduction to Research in Dentistry

1.1 What is research? · 1.2 Why dentists need research skills · 1.3 Types of research in dentistry

Core texts: [1] Chs. 1–2 · [2] Chs. 1–2 · [3] Ch. 1 · [5] Ch. on epidemiology and research methods · [8] Chs. 1–2 · [9] Chs. on research methodology and epidemiology · [11] Ch. 1 · [46]

Additional

- Sackett DL, Rosenberg WM, Gray JA, Haynes RB, Richardson WS. Evidence based medicine: what it is and what it isn't. *BMJ*. 1996;312(7023):71–2.
- Chalmers I, Glasziou P. Avoidable waste in the production and reporting of research evidence. *Lancet*. 2009;374(9683):86–9.
- Glasziou P, Chalmers I. Research waste is still a scandal. *BMJ*. 2018;363:k4645.
- Niederman R, Badovinac R. Tradition-based dental care and evidence-based dental care. *J Dent Res*. 1999;78(7):1288–91.
- Health Research Authority, Medical Research Council. Is my study research? Decision tool. London: HRA. Available from: <https://www.hra-decisiontools.org.uk/research/>
- General Dental Council. Preparing for Practice: dental team learning outcomes for registration. London: GDC; 2015. Available from: <https://www.gdc-uk.org>
- Pitts N. Understanding the jigsaw of evidence-based dentistry: 1. Introduction, research and synthesis. *Evid Based Dent*. 2004;5(1):2–4.

Chapter 2 — Research Ethics and Good Clinical Practice (GCP)

2.1 Ethical principles · 2.2 Ethical guidelines (intro awareness) · 2.3 Research involving human participants · 2.4 Research misconduct (intro)

Core texts: [23] · [24] · [25] · [26] · [27] · [28] · [29] · [30] · [31] · [1] Ch. on ethical issues in clinical research · [39]

Additional

- Beauchamp TL, Childress JF. Principles of Biomedical Ethics. 8th ed. New York: Oxford University Press; 2019.
- Emanuel EJ, Wendler D, Grady C. What makes clinical research ethical? *JAMA*. 2000;283(20):2701–11.
- The Nuremberg Code (1947). *BMJ*. 1996;313(7070):1448.
- World Medical Association. WMA Declaration of Taipei on ethical considerations regarding health databases and biobanks. Ferney-Voltaire: WMA; 2016. Available from: <https://www.wma.net>
- Fanelli D. How many scientists fabricate and falsify research? A systematic review and meta-analysis of survey data. *PLoS One*. 2009;4(5):e5738.
- Nishimura A, Carey J, Erwin PJ, Tilburt JC, Murad MH, McCormick JB. Improving understanding in the research informed consent process: a systematic review of 54 interventions tested in randomized control trials. *BMC Med Ethics*. 2013;14:28.
- Wager E, Kleinert S. Responsible research publication: international standards for authors. Eastleigh: Committee on Publication Ethics; 2011.
- Bibbins-Domingo K, Brubaker L, Curfman G. The 2024 revision to the Declaration of Helsinki: modern ethics for medical research. *JAMA*. 2025;333(1):30–1.

Chapter 3 — Formulating a Research Question

3.1 Identifying a research problem · 3.2 Research question frameworks (PICO, PEO) · 3.3 Aims, objectives and hypotheses · 3.4 Variables

Core texts: [1] Chs. 2–3 · [2] Ch. on formulating the problem · [4] Ch. on abnormality and risk · [8] Chs. on the research problem and hypotheses · [40] Ch. 2 (Determining the scope of the review and the questions it will address)

Additional

- Richardson WS, Wilson MC, Nishikawa J, Hayward RS. The well-built clinical question: a key to evidence-based decisions. *ACP J Club*. 1995;123(3):A12–3.
- Riva JJ, Malik KM, Burnie SJ, Endicott AR, Busse JW. What is your research question? An introduction to the PICOT format for clinicians. *J Can Chiropr Assoc*. 2012;56(3):167–71.
- Farrugia P, Petrisor BA, Farrokhyar F, Bhandari M. Research questions, hypotheses and objectives. *Can J Surg*. 2010;53(4):278–81.
- Thabane L, Thomas T, Ye C, Paul J. Posing the research question: not so simple. *Can J Anaesth*. 2009;56(1):71–9.
- Cooke A, Smith D, Booth A. Beyond PICO: the SPIDER tool for qualitative evidence synthesis. *Qual Health Res*. 2012;22(10):1435–43.
- Munn Z, Stern C, Aromataris E, Lockwood C, Jordan Z. What kind of systematic review should I conduct? A proposed typology and guidance for systematic reviewers in the medical and health sciences. *BMC Med Res Methodol*. 2018;18:5.
- Hulley SB, Cummings SR, Browner WS, Grady DG, Newman TB. Getting started: the anatomy and physiology of clinical research. In: *Designing Clinical Research*. Philadelphia: Lippincott Williams & Wilkins; 2013.

Chapter 4 — Review of Literature

4.1 Purpose of literature review · 4.2 Sources of literature · 4.3 Search strategies (intro) · 4.4 Referencing and citation basics

Core texts: [40] Ch. 4 (Searching for and selecting studies) · [2] Ch. 2 (Searching the literature) · [35] · [39] · [32]

Additional

- Booth A, Sutton A, Clowes M, Martyn-St James M. *Systematic Approaches to a Successful Literature Review*. 3rd ed. London: SAGE Publications; 2021.
- Grant MJ, Booth A. A typology of reviews: an analysis of 14 review types and associated methodologies. *Health Info Libr J*. 2009;26(2):91–108.
- Bramer WM, Rethlefsen ML, Kleijnen J, Franco OH. Optimal database combinations for literature searches in systematic reviews: a prospective exploratory study. *Syst Rev*. 2017;6:245.
- Paez A. Grey literature: an important resource in systematic reviews. *J Evid Based Med*. 2017;10(3):233–40.
- US National Library of Medicine. Medical Subject Headings (MeSH). Bethesda (MD): NLM. Available from: <https://www.nlm.nih.gov/mesh/>
- US National Library of Medicine. PubMed User Guide. Bethesda (MD): NLM. Available from: <https://pubmed.ncbi.nlm.nih.gov/help/>
- Patrias K. *Citing Medicine: The NLM Style Guide for Authors, Editors, and Publishers*. 2nd ed. Bethesda (MD): National Library of Medicine; 2007.
- Cochrane Library. London: Cochrane. Available from: <https://www.cochranelibrary.com>

Chapter 5 — Study Designs (Foundation Level)

5.1 *Observational studies* · 5.2 *Experimental studies* · 5.3 *Other commonly referenced designs* · 5.4 *Strengths and limitations*

Core texts: [1] Chs. 7–11 · [3] Chs. 6–10 · [4] Chs. on treatment and risk · [5] Ch. on principles of epidemiology and epidemiologic methods · [7] Chs. 5–7 · [33] · [36] · [37] · [40] Ch. 1

Additional

- Grimes DA, Schulz KF. An overview of clinical research: the lay of the land. *Lancet*. 2002;359(9300):57–61.
- Mann CJ. Observational research methods. Research design II: cohort, cross sectional, and case-control studies. *Emerg Med J*. 2003;20(1):54–60.
- Schulz KF, Grimes DA. Case-control studies: research in reverse. *Lancet*. 2002;359(9304):431–4.
- Sedgwick P. Cross sectional studies: advantages and disadvantages. *BMJ*. 2014;348:g2276.
- Umscheid CA, Margolis DJ, Grossman CE. Key concepts of clinical trials: a narrative review. *Postgrad Med*. 2011;123(5):194–204.
- Faggion CM Jr. Guidelines for reporting pre-clinical in vitro studies on dental materials. *J Evid Based Dent Pract*. 2012;12(4):182–9.
- Percie du Sert N, Hurst V, Ahluwalia A, Alam S, Avey MT, Baker M, et al. The ARRIVE guidelines 2.0: updated guidelines for reporting animal research. *PLoS Biol*. 2020;18(7):e3000410.
- Levin KA. Study design III: cross-sectional studies. *Evid Based Dent*. 2006;7(1):24–5.
- Levin KA. Study design IV: cohort studies. *Evid Based Dent*. 2006;7(2):51–2.
- Levin KA. Study design VI: case-control studies. *Evid Based Dent*. 2006;7(3):83–4.
- Levin KA. Study design VII: randomised controlled trials. *Evid Based Dent*. 2007;8(1):22–3.
- Murad MH, Asi N, Alsawas M, Alahdab F. New evidence pyramid. *Evid Based Med*. 2016;21(4):125–7.

Chapter 6 — Sampling and Sample Size (Intro)

6.1 *Population and sample* · 6.2 *Sampling methods* · 6.3 *Sample size concepts*

Core texts: [1] Chs. 3 and 5 · [8] Ch. on selecting a sample · [15] Chs. on sampling and study size · [16] Chs. 34–35 · [17] Chs. on sampling and sample size · [18] Ch. on sampling

Additional

- Kadam P, Bhalerao S. Sample size calculation. *Int J Ayurveda Res*. 2010;1(1):55–7.
- Whitley E, Ball J. Statistics review 4: sample size calculations. *Crit Care*. 2002;6(4):335–41.
- Suresh K, Chandrashekara S. Sample size estimation and power analysis for clinical research studies. *J Hum Reprod Sci*. 2012;5(1):7–13.
- Charan J, Biswas T. How to calculate sample size for different study designs in medical research? *Indian J Psychol Med*. 2013;35(2):121–6.
- Elfil M, Negida A. Sampling methods in clinical research; an educational review. *Emerg (Tehran)*. 2017;5(1):e52.
- Columb MO, Atkinson MS. Statistical analysis: sample size and power estimations. *BJA Educ*. 2016;16(5):159–61.
- Altman DG, Bland JM. Absence of evidence is not evidence of absence. *BMJ*. 1995;311(7003):485.

Chapter 7 — Data Collection Methods

7.1 Types of data · 7.2 Tools for data collection · 7.3 Questionnaire design (intro) · 7.4 Calibration and standardization

Core texts: [1] Chs. 4 and 16–17 · [9] Chs. on survey procedures and indices · [10] Chs. on epidemiological methods · [11] Chs. on measuring oral health · [17] Ch. on assessing agreement

Additional

- Boynton PM, Greenhalgh T. Selecting, designing, and developing your questionnaire. *BMJ*. 2004;328(7451):1312–5.
- Boynton PM. Administering, analysing, and reporting your questionnaire. *BMJ*. 2004;328(7452):1372–5.
- Landis JR, Koch GG. The measurement of observer agreement for categorical data. *Biometrics*. 1977;33(1):159–74.
- Cohen J. A coefficient of agreement for nominal scales. *Educ Psychol Meas*. 1960;20(1):37–46.
- McHugh ML. Interrater reliability: the kappa statistic. *Biochem Med (Zagreb)*. 2012;22(3):276–82.
- Bland JM, Altman DG. Statistical methods for assessing agreement between two methods of clinical measurement. *Lancet*. 1986;1(8476):307–10.
- Streiner DL, Norman GR, Cairney J. *Health Measurement Scales: A Practical Guide to Their Development and Use*. 5th ed. Oxford: Oxford University Press; 2015.
- World Health Organization. *Oral Health Surveys: Basic Methods*. 5th ed. Geneva: WHO; 2013. Available from: <https://www.who.int/publications/i/item/9789241548649>
- Ismail AI, Sohn W, Tellez M, Amaya A, Sen A, Hasson H, et al. The International Caries Detection and Assessment System (ICDAS): an integrated system for measuring dental caries. *Community Dent Oral Epidemiol*. 2007;35(3):170–8.

Chapter 8 — Biostatistics (Introductory Applied Research)

8.1 Data presentation · 8.2 Descriptive statistics · 8.3 Inferential statistics (intro) · 8.4 Common tests (recognition level)

Core texts: [15] Chs. 1–10 · [16] Chs. 3–12 · [17] Chs. 1–24 · [18] Chs. on descriptive and inferential statistics · [19] Chs. 2–9 · [20] Chs. 1–8 · [21] Chs. on measures of central tendency, dispersion and tests of significance

Additional

- Whitley E, Ball J. Statistics review 1: presenting and summarising data. *Crit Care*. 2002;6(1):66–71.
- Altman DG, Bland JM. Statistics notes: the normal distribution. *BMJ*. 1995;310(6975):298.
- Gardner MJ, Altman DG. Confidence intervals rather than P values: estimation rather than hypothesis testing. *Br Med J (Clin Res Ed)*. 1986;292(6522):746–50.
- Wasserstein RL, Lazar NA. The ASA statement on p-values: context, process, and purpose. *Am Stat*. 2016;70(2):129–33.
- Greenland S, Senn SJ, Rothman KJ, Carlin JB, Poole C, Goodman SN, et al. Statistical tests, P values, confidence intervals, and power: a guide to misinterpretations. *Eur J Epidemiol*. 2016;31(4):337–50.
- du Prel JB, Röhrig B, Hommel G, Blettner M. Choosing statistical tests: part 12 of a series on evaluation of scientific publications. *Dtsch Arztebl Int*. 2010;107(19):343–8.
- McCrum-Gardner E. Which is the correct statistical test to use? *Br J Oral Maxillofac Surg*. 2008;46(1):38–41.
- Lang TA, Altman DG. Basic statistical reporting for articles published in biomedical journals: the SAMPL guidelines. *Int J Nurs Stud*. 2015;52(1):5–9.

Chapter 9 — Bias, Error and Confounding

9.1 Types of bias · 9.2 Confounding · 9.3 Random error

Core texts: [1] Chs. 1, 3 and 9–10 · [3] Chs. on bias, confounding and interaction · [4] Ch. on risk · [7] Chs. on validity and bias · [15] Ch. on the design of experiments · [36] · [40] Chs. 7–8

Additional

- Sackett DL. Bias in analytic research. *J Chronic Dis.* 1979;32(1-2):51-63.
- Delgado-Rodríguez M, Llorca J. Bias. *J Epidemiol Community Health.* 2004;58(8):635-41.
- Pannucci CJ, Wilkins EG. Identifying and avoiding bias in research. *Plast Reconstr Surg.* 2010;126(2):619-25.
- Sterne JAC, Savović J, Page MJ, Elbers RG, Blencowe NS, Boutron I, et al. RoB 2: a revised tool for assessing risk of bias in randomised trials. *BMJ.* 2019;366:l4898.
- Sterne JA, Hernán MA, Reeves BC, Savović J, Berkman ND, Viswanathan M, et al. ROBINS-I: a tool for assessing risk of bias in non-randomised studies of interventions. *BMJ.* 2016;355:i4919.
- Schulz KF, Chalmers I, Hayes RJ, Altman DG. Empirical evidence of bias: dimensions of methodological quality associated with estimates of treatment effects in controlled trials. *JAMA.* 1995;273(5):408-12.
- Jager KJ, Zoccali C, Macleod A, Dekker FW. Confounding: what it is and how to deal with it. *Kidney Int.* 2008;73(3):256-60.
- Skelly AC, Dettori JR, Brodt ED. Assessing bias: the importance of considering confounding. *Evid Based Spine Care J.* 2012;3(1):9-12.
- Levin KA. Study design II: issues of chance, bias, confounding and contamination. *Evid Based Dent.* 2005;6(4):102-3.

Chapter 10 — Data Analysis and Interpretation (Intro)

10.1 Data coding and entry · 10.2 Interpreting results · 10.3 Presentation of results

Core texts: [15] Chs. on analysing and presenting data · [16] Chs. on data handling and interpretation · [17] Chs. on data presentation and interpretation · [19] Chs. 2-5 · [22] Chs. on entering and exploring data · [35] · [36]

Additional

- Van den Broeck J, Cunningham SA, Eeckels R, Herbst K. Data cleaning: detecting, diagnosing, and editing data abnormalities. *PLoS Med.* 2005;2(10):e267.
- Ranganathan P, Pramesh CS, Buyse M. Common pitfalls in statistical analysis: clinical versus statistical significance. *Perspect Clin Res.* 2015;6(3):169-70.
- Hill AB. The environment and disease: association or causation? *Proc R Soc Med.* 1965;58(5):295-300.
- Fedak KM, Bernal A, Capshaw ZA, Gross S. Applying the Bradford Hill criteria in the 21st century: how data integration has changed causal inference in molecular epidemiology. *Emerg Themes Epidemiol.* 2015;12:14.
- Altman DG, Bland JM. Statistics notes: presentation of numerical data. *BMJ.* 1996;312(7030):572.
- Sterne JAC, White IR, Carlin JB, Spratt M, Royston P, Kenward MG, et al. Multiple imputation for missing data in epidemiological and clinical research: potential and pitfalls. *BMJ.* 2009;338:b2393.
- Ranganathan P, Pramesh CS, Aggarwal R. Common pitfalls in statistical analysis: absolute risk reduction, relative risk reduction, and number needed to treat. *Perspect Clin Res.* 2016;7(1):51-3.

Chapter 11 — Writing a Research Protocol

11.1 Components of a protocol · 11.2 Gantt chart (intro awareness)

Core texts: [34] · [1] Chs. on writing a proposal and implementing the study · [8] Chs. on the research proposal · [24] · [28] · [32] · [39]

Additional

- Chan AW, Tetzlaff JM, Gøtzsche PC, Altman DG, Mann H, Berlin JA, et al. SPIRIT 2013 explanation and elaboration: guidance for protocols of clinical trials. *BMJ.* 2013;346:e7586.
- Al-Jundi A, Sakka S. Protocol writing in clinical research. *J Clin Diagn Res.* 2016;10(11):ZE10-13.

- Ohtake PJ, Childs JD. Why publish study protocols? *Phys Ther.* 2014;94(9):1208–9.
- World Health Organization. Recommended format for a research protocol. Geneva: WHO. Available from: <https://www.who.int>
- Health Research Authority. Applying to a research ethics committee. London: HRA. Available from: <https://www.hra.nhs.uk>
- National Institute for Health and Care Research. Research governance and good clinical practice. London: NIHR. Available from: <https://www.nihr.ac.uk>
- Moher D, Schulz KF, Simera I, Altman DG. Guidance for developers of health research reporting guidelines. *PLoS Med.* 2010;7(2):e1000217.

Chapter 12 — Scientific Writing and Communication

12.1 Structure of a scientific paper (IMRAD) · 12.2 Abstract writing (intro) · 12.3 Referencing and plagiarism avoidance · 12.4 Presentation skills (intro)

Core texts: [39] · [30] · [32] · [33] · [35] · [2] Ch. on getting your bearings · [1] Ch. on writing and publishing

Additional

- Sollaci LB, Pereira MG. The introduction, methods, results, and discussion (IMRAD) structure: a fifty-year survey. *J Med Libr Assoc.* 2004;92(3):364–7.
- Hartley J. Current findings from research on structured abstracts. *J Med Libr Assoc.* 2004;92(3):368–71.
- Masic I. Plagiarism in scientific publishing. *Acta Inform Med.* 2012;20(4):208–13.
- Roig M. Avoiding Plagiarism, Self-plagiarism, and Other Questionable Writing Practices: A Guide to Ethical Writing. Rockville (MD): Office of Research Integrity; 2015.
- Erren TC, Bourne PE. Ten simple rules for a good poster presentation. *PLoS Comput Biol.* 2007;3(5):e102.
- Bourne PE. Ten simple rules for making good oral presentations. *PLoS Comput Biol.* 2007;3(4):e77.
- Patrias K. Citing Medicine: The NLM Style Guide for Authors, Editors, and Publishers. 2nd ed. Bethesda (MD): National Library of Medicine; 2007.
- Docherty M, Smith R. The case for structuring the discussion of scientific papers. *BMJ.* 1999;318(7193):1224–5.

Chapter 13 — Evidence-Based Dentistry (EBD)

13.1 Principles of EBD · 13.2 Hierarchy of evidence · 13.3 Critical appraisal (intro)

Core texts: [2] Chs. 1–4 and 9 · [13] · [14] · [40] Chs. 1 and 14 · [41] · [42] · [43] · [45]

Additional

- Sackett DL, Rosenberg WM, Gray JA, Haynes RB, Richardson WS. Evidence based medicine: what it is and what it isn't. *BMJ.* 1996;312(7023):71–2.
- Straus SE, Glasziou P, Richardson WS, Haynes RB. Evidence-Based Medicine: How to Practice and Teach EBM. 5th ed. Edinburgh: Elsevier; 2019.
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Chapter 14 — Research in Dental Education and Audit (Intro)

14.1 Clinical audit vs research • 14.2 Quality improvement projects

Core texts: [38] • [43] • [44] • [45] • [46] • [2] Ch. on quality improvement • [28]

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Chapter 15 — Research Governance and Regulatory Awareness

15.1 Institutional approvals • 15.2 Data protection and record keeping • 15.3 Funding and conflicts of interest (intro)

Core texts: [23] • [24] • [25] • [27] • [28] • [29] • [30] • [31] • [39]

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Chapter 16 — Introduction to Biostatistical Software and AI Tools (Awareness)

16.1 Statistical software awareness • 16.2 Reference managers • 16.3 AI tools in research (intro)

Core texts: [22] • [15] Ch. on using a computer for statistics • [17] Ch. on statistical software • [39] • [30] • [40] Ch. 4

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