

# Savitribai Phule Pune University

(Formerly University of Pune)

## Syllabus for Ph.D. (PET) Entrance Exam : Health Science

### Research Methodology

- 1) **Foundation of Research:** Meaning, purpose and utility; motivation. Concept of theory, empiricism, deductive and inductive theory. Characteristics of scientific method - the process of research (Kothari, 2013, WHO, 2001)
- 2) Public health research: The roles of quantitative and qualitative research, mixed methods research (Creswal, J., 2013)
- 3) Epidemiology and its utility in public health decision making (Gordis L., 2013)
- 4) Steps of epidemiological research: Selection of a research problem- Literature review: electronic search engines PubMed, Scopus, health literature databases - Reference Management Software like Zotero/Mendeley, Endnote, the architecture of a good research question, PE/ICO; formulation of objectives - construction of hypothesis- null hypothesis & alternative hypothesis. hypothesis testing (UIC,2015)
- 5) Epidemiological research designs – observational and experimental – variables: types and uses, independent & dependent variables. (Gordis L., 2013)
- 6) Developing qualitative research designs surveys, observational studies, case studies and action research (Green and Thorogood, 2013)
- 7) Ethical and biosafety issues in the public health sciences, ICMR guidelines, ethical issues in clinical trials (ICMR,2006, CDSCO,2013).
- 8) Basic statistics: Sampling methods, sample size estimation, descriptive statistics, test of significance, probability testing- univariate, bivariate and multivariate analysis, risk measurement, measurement of morbidity and mortality, causal association, bias and confounding (WHO,2011). Reporting guidelines for epidemiological studies (CONSORT Checklist-CONSORT Statement,2010)
- 9) **Writing a research paper and a thesis:** Journals, peer-review, impact factor, sections of research paper; Structure and components of scientific reports - Types of report - Technical reports and thesis - Significance - Different steps in the preparation - Layout, Structure and Language of typical reports - Illustrations and tables - Bibliography, referencing and footnotes
- 10) **Publication ethics:** Ethical issues related to publishing, Authorship credit and acknowledgement, conflict of interest, Plagiarism - Reproduction of published material - citation and acknowledgement, Reproducibility and accountability.

## References

- 1) Health Research Methodology: A guide for training in research methods. Second Edition. WHO, 2001.
- 2) Gordis Leon., Epidemiology, 5<sup>th</sup> Edition, Elsevier Health-USA, 2013
- 3) Kothari, C.R., 1990. Research Methodology: Methods and Techniques. New Age International. 418p.
- 4) Judith Green and Nicki Thorogood. Qualitative Methods for Health Research. SAGE Publications, London, 2004
- 5) John Creswell (2013). Research Design: Qualitative, Quantitative, and mixed methods approaches. Fourth edition, Sage Publications
- 6) ICMR, 2006. Ethical Guidelines for Biomedical Research on Human Participants, ICMR, New Delhi.
- 7) CDSCO, 2013. Regulations and Guidelines Specific to Ethics Schedule Y & CDSCO-GCP., Available on [www.cdsaindia.in/sites/default/files/02\\_Regulations\\_Dr.Bangaruranjan.pdf](http://www.cdsaindia.in/sites/default/files/02_Regulations_Dr.Bangaruranjan.pdf)
- 8) CONSORT Checklist-CONSORT statement. 2010. Available on [www.consort-statement.org/media/default/downloads/consort2010](http://www.consort-statement.org/media/default/downloads/consort2010)
- 9) The University of Illinois at Chicago. Evidence Based Medicine: PICO. Available on <http://researchguides.uic.edu>.

## Subject Concerned Syllabus Health Science

1. Principles of public health
2. Determinants of health including nutrition, environment, social determinants
3. Epidemiology
4. Biostatistics
5. Health Care delivery systems
6. National health programmes of India
7. Global health challenges and initiatives
8. Health indicators
9. Emerging infectious diseases; epidemiological transition
10. Public health laws and regulations
11. Health Policy
12. Bioethics and human rights

### Suggested readings

Students are referred to standard textbooks in these subjects.

Textbooks referred for the MPH course or PSM courses can be used for the examination.