

CENTRAL UNIVERSITY OF KERALA
DEPARTMENT OF YOGA STUDIES
M.Sc. YOGA THERAPY

MYG 5001: Research methodology and Statistics

Course Code	MYG5001	Semester	
Course Title	<i>Research methodology and Statistics</i>		
Credits	3	Type	Elective

Course Description

This course is oriented to provide a knowledge based skill in the area of research that enhances the employability as a Researcher in the field of Yoga Therapy. The course introduces research methodology and scientific research process in the field of yoga therapy.

Course outcome

- **Students get thorough knowledge in the research methodology**
- Students get the knowledge in the evidence based research method in the interventional studies.
- Students get exposure in previously conducted research studies in the field of yoga therapy.
- **Skill in the application of various statistical procedures and hypothesis testing.**
- **Develops the skill in communicating scientifically and systematically.**
- **Skill in reading and analysing the research activities.**

Course Structure

The following is a detailed syllabus MYG5001 Research Methodology and Statistics.

Module .

First and second units are teaches the basic of research methodology concepts in detail. Third and fourth units are teaches the method of statistical analysis and different statistical tools for hypothesis testing. Fifth unit teaches research activities done in the field of yoga therapy and recent developments.

Unit I. Research methodology concepts– I (10 hours)

- Introduction to research methodology – definition of research, types of research, need for yoga research. The research process, Literature review, Purpose, Process, digital source: PubMed, etc., presentation of literature review.
- Ethics of research Laboratory ethics, Publication ethics, Ethical bodies IEC & IRB, Guidelines for good clinical practice.
- Scales of measurement – nominal, ordinal, interval, ratio. Data collection methods: Observation, Interview, psychological tests, questionnaire, physiological tests, and archive.

Unit II. Research methodology concepts –II (10 hours)

- Sampling methods - Population and Sample; Simple Random Sampling, Systematic Sampling, Stratified Sampling, Cluster Sampling Methods of controlling biases - Randomization Types of variables Independent, dependent, confounding variable.
- Types of research design Experimental designs, cross sectional design, Case study, Survey.
- Reliability: Test-Retest Reliability, Internal Consistency, Inter rater Reliability.

- Validity: Construct Validity, Face Validity, Content Validity, Criterion Validity, Convergent and Discriminant Validity. Issues of bias and confounding.
- Selection bias, Recall bias, Observer or measurement bias, Publication bias Randomization, Matching, Crossover design, Restriction (or blocking), Stratification.

Unit III. Statistical concepts – I

(9 hours)

- Descriptive statistics, inferential statistics, Hypothesis, Null hypothesis.
- Statistics and Parameters, Sample and Population.
- Generalization, One tailed, two tailed hypothesis.
- Types of Errors and its control, Central Limit Theorem.

Unit IV. Statistical concepts - II

(8 hours)

- Point estimate and interval estimate, Power analysis, Effect size, Sample size.
- P Value, Confidence Interval, Statistical tests and design, assumptions of tests.
- Statistical tests for various designs: Correlation, proportions, paired sample and independent sample.
- t-tests, Chi-Square tests, ANOVA, Repeated Measures ANOVA, parametric and non-parametric tests.

Unit V. Scientific studies in yoga

(8 hours)

- Scientific studies in Yoga – procedure.
- Procedure for publication in Yoga.
- Analysis of 10 Research works in Yoga. (Decided by the BOS)
- Presentation and Discussion.

Testing & Evaluation

Internal Assessment - 40 marks.

Internal examination - 20 marks, Assignments - 10, Overall performance 10

End semester examination - 60 marks

Objective type questions -10 marks, short notes – 30 marks, essay - 20

References:

1. C R Kothari. Research Methodology: Methods and Techniques. New Age International (P) Ltd. New delhi; 2009.
2. R. L. Bijlani, Medical Research: All You Wanted to Know But Did Not Know Who to Ask. Jaypee Brothers Medical Publishers Pvt. Ltd. New Delhi; 2008.