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BACHELOR OF BUSINESS ADMINISTRATION
B.Sc Sports Science (613)
EXAMINATION : DECEMBER - 2025
SEMESTER - IV
Sub: Research Methodology (BSC23-413)

Date: 29/12/2025**Total marks: 60****Time: 2.00 pm To 4.30 pm****Q. 1. Answer in Detail (30)**

1. Describe components of an informed consent form
2. Describe the different parts of a research paper and what information they provide.
3. Write examples of non-probability sampling, with their pros and cons.

Q. 2. Write Short Notes (Any Two) (10)

1. Measurement scales in research
2. Types of Validity
3. Prospective vs retrospective studies
4. You want to measure Vertical jump height of 50 athletes. Vertical jump height can be assessed by many methods, including force plate, wall and chalk, a phone app and the vertec device. How will you choose the best test for your study?

Q. 3. Answer in Short (10)

1. Effect Size
2. Define Variable
3. Define population
4. Confounding variable
5. Which study type is highest in the hierarchy of evidence?

Q. 4. Case Study (10)

A study's title abstract has been attached below. Summarize the key information you were able to extract. Identify the study's objective, methods, participant details, findings, and conclusion in your response.

Dumbbell versus cable lateral raises for lateral deltoid hypertrophy: an experimental study

Abstract

This study compared the effects of dumbbell versus cable lateral raises on lateral deltoid muscle thickness (MT) in resistance-trained men and women, with shoulder adduction/abduction range of motion standardised and matched between conditions. Twenty-four participants completed an eight-week intervention comprising two weekly resistance training sessions of five sets of lateral raises completed to momentary failure. The study used a within-participant design with each participant's arms randomly allocated to the cable or dumbbell lateral raise. MT of the proximal and distal lateral deltoid was assessed via B-mode ultrasound. Data were analysed in a Bayesian framework including both univariate and multivariate mixed effect models with random effects. Within-intervention results indicated that conditions produced small or small to medium improvements based on resistance training specific thresholds. In conclusion, our data suggests that both dumbbell and cable lateral raises are similarly effective for increasing lateral deltoid muscle hypertrophy in resistance-trained lifters.