

# 國立成功大學

## 115學年度碩士班招生考試試題

編 號：204

系 所：公共衛生學系

科 目：生物統計學與流行病學

日 期：0203

節 次：第 2 節

注 意：1. 可使用計算機  
2. 請於答案卷(卡)作答，於  
試題上作答，不予計分。

Answer the questions based on the abstract that is from the following article. There is only one correct answer. There are 20 questions, 5 points each.

Sihvonen R, Paavola M, Malmivaara A, et al. Arthroscopic partial meniscectomy versus sham surgery for a degenerative meniscal tear. *N Engl J Med* 2013;369:2515-24.

## Abstract

**Background:** Arthroscopic partial meniscectomy is one of the most common orthopedic procedures, yet rigorous evidence of its efficacy is lacking.

**Methods:** We conducted a multicenter, randomized, double-blind, sham-controlled trial in 146 patients 35 to 65 years of age who had knee symptoms consistent with a degenerative medial meniscus tear and no knee osteoarthritis. Patients were randomly assigned to arthroscopic partial meniscectomy or sham surgery. The primary outcomes were changes in the Lysholm and Western Ontario Meniscal Evaluation Tool (WOMET) scores (each ranging from 0 to 100, with lower scores indicating more severe symptoms) and in knee pain after exercise (rated on a scale from 0 to 10, with 0 denoting no pain) at 12 months after the procedure.

**Results:** In the intention-to-treat analysis, there were no significant between-group differences in the change from baseline to 12 months in any primary outcome. The mean changes (improvements) in the primary outcome measures were as follows: Lysholm score, 21.7 points in the partial-meniscectomy group as compared with 23.3 points in the sham-surgery group (between-group difference, -1.6 points; 95% confidence interval [CI], -7.2 to 4.0); WOMET score, 24.6 and 27.1 points, respectively (between-group difference, -2.5 points; 95% CI, -9.2 to 4.1); and score for knee pain after exercise, 3.1 and 3.3 points, respectively (between-group difference, -0.1; 95% CI, -0.9 to 0.7). There were no significant differences between groups in the number of patients who required subsequent knee surgery (two in the partial-meniscectomy group and five in the sham-surgery group) or serious adverse events (one and zero, respectively).

**Conclusions:** In this trial involving patients without knee osteoarthritis but with symptoms of a degenerative medial meniscus tear, the outcomes after arthroscopic partial meniscectomy were no better than those after a sham surgical procedure. (Funded by the Sigrid Juselius Foundation and others; ClinicalTrials.gov number, NCT00549172.).

1. (5 points) What is the study type?

- A. Randomized controlled trial
- B. Case report
- C. Case-control study
- D. Cross-sectional study

2. (5 points) What is the placebo in this study?
- A. Arthroscopic partial meniscectomy
  - B. Sham surgery
  - C. Knee osteoarthritis
  - D. Degenerative meniscal tear
3. (5 points) Who was blinded in this study?
- A. Patients
  - B. Research staff
  - C. Surgeons
  - D. Both A and B
4. (5 points) A total of 70 patients were randomized to arthroscopic partial meniscectomy. What are the odds of requiring subsequent knee surgery in this group?
- A. 2/68
  - B. 3/68
  - C. 2/70
  - D. 3/70
5. (5 points) A total of 76 patients were randomized to sham surgery. What are the odds of requiring subsequent knee surgery in this group?
- A. 4/76
  - B. 5/76
  - C. 4/71
  - D. 5/71
6. (5 points) What is the odds ratio if sham surgery is the reference group?
- A. 1
  - B. 2.33
  - C. 0.43
  - D. None of the above

7. (5 points) Efficacy refers to whether an intervention works
- A. Under ideal conditions
  - B. In routine clinical settings
  - C. Using real-world data
  - D. In less optimal settings
8. (5 points) What term is used to describe the alternative to efficacy?
- A. Proof of concept trial
  - B. Effectiveness
  - C. Laboratory-controlled settings
  - D. Ecological fallacy
9. (5 points) What is the alternative to intention to treat analysis?
- A. Per protocol analysis
  - B. Intention to test analysis
  - C. Simple randomization
  - D. Stratified analysis
10. (5 points) What is a weakness of randomized controlled trials?
- A. High external validity
  - B. Less expensive to conduct
  - C. More likely to have ethical issues
  - D. No placebo effect
11. (5 points) What is a strength of randomized controlled trials over observational studies?
- A. Costs more
  - B. Less generalizability
  - C. Control for unmeasured confounding
  - D. Temporal sequence

12. (5 points) What is a potential limitation of surgical trials?

- A. Patients are more willing to be randomized to surgery
- B. Surgeons cannot be blinded
- C. Follow-up rates are always high
- D. Impossible to have a control group

13. (5 points) What is not a study design that can be used to answer a similar research question?

- A. Prospective cohort study
- B. Retrospective cohort study
- C. Cross-sectional study
- D. Propensity score-matched study

14. (5 points) What term is used to describe when a factor distorts the association between the intervention and outcome?

- A. Confounding
- B. Concealment of allocation
- C. Selection bias
- D. Information bias

15. (5 points) What term is used to describe when the study population is not representative of the target population?

- A. Confounding
- B. Concealment of allocation
- C. Selection bias
- D. Information bias

16. (5 points) What term is used to describe the measurement error if magnetic resonance imaging (MRI) was not used to diagnose patients?

- A. Confounding
- B. Concealment of allocation
- C. Selection bias
- D. Information bias

17-20. (20 points) Fill in the levels of evidence with the correct letter using the following study types:

- A. Case-control study
- B. Cohort study
- C. Meta-analysis
- D. Randomized controlled trial

