Lec:13 Hypothesis Testing & P-values

Epidemiology Lecture #13

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4. Chapter: Lec:13 Hypothesis Testing & P-values

1. Lec:13 Hypothesis Testing & P-values Questions

4.1.1. If we assume that age follows a normal or Gaussian distribution, wh...

Author: Janet Forrester

Questions 1?-4 are based on the following information:

A cohort study was conducted that examined the outcome of weight loss comparing two diets:

a traditional American diet and an all?-beet diet. Baseline characteristics are provided in Table 1 below.

Table 1: Baseline characteristics of study participants

[table]

;Traditional Diet ; All?-Beet Diet; p?-value

Age [Mean (SD)] ; 49.4 (3.9) ;52.2 (3.4) ;0.003

BMI [Mean (SD)] ; 32.7 (2.2) ;32.5 (2.1) ;0.687

Male sex (%) ;53.4% ;51.3% ;0.332

[/table]

If we assume that age follows a normal or Gaussian distribution, what test was most likely used to test whether or not there was a difference between the two groups at baseline in terms of age?

Please choose only one answer:

- chi square test
- t?-test
- confidence interval
- standard error test
- beta test

4.1.2. What test was used to obtain the p?-value associated with the diffe...

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[/table]

What test was used to obtain the p?-value associated with the difference between gender distribution in the two groups?

Please choose only one answer:

- a chi square test
- t?-test
- confidence interval
- standard error test
- beta test

4.1.3. What is the 95% confidence interval associated with mean BMI for th...

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[/table]

What is the 95% confidence interval associated with mean BMI for the traditional diet group?

Please choose only one answer:

- (32.2, 33.2)
- (30.5, 34.9)
- (28.3, 37.1)
- (26.1, 39.3)
- Cannot be determined from the information given without knowing the sample size

4.1.4. If the pre?-established alpha value for the study is 0.05, what do ...

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[/table]

If the pre?-established alpha value for the study is 0.05, what do we conclude about the difference(s) between persons on a traditional American diet vs. those on an all?-beet diet? (more than one answer may be correct)

Please choose all the answers that apply:

- There is no statistical difference in age.
- There is no statistical difference in BMI.
- There is no statistical difference in the proportion of men.
- There is a statistical difference in age.
- There is a statistical difference in BMI.
- There is a statistical difference in the proportion of men.

4.1.5. In this study, the researchers found that, on average, those on the...

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In this study, the researchers found that, on average, those on the all?-beet diet lost an

average of 4.5 pounds with a standard deviation of 4.0 pounds, compared to those on

the traditional diet, who lost an average of 4.6 pounds, with a standard deviation of 4.9

pounds. If the statistical test comparing weight lost between the two groups had a

statistically significant result, what would you conclude about the study?

Please choose only one answer:

- The study had inadequate power.
- The study had an inadequate sample size.
- The study has a type?-I error rate <0.05.
- The p?-value is <0.05.
- The results may be clinically significant, but not statistically significant.

4.1.6. A chi square test can only be used for 2x2 tables of frequencies or...

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A chi square test can only be used for 2x2 tables of frequencies or counts.

Please choose only one answer:

- True
- False

Check the answer of this question online at QuizOver.com:
Question: A chi square test can only be used for by Dr. Janet Forrester @Tufts

Flashcards:
http://www.quizover.com/flashcards/a-chi-square-test-can-only-be-used-for-by-dr-janet-forrester-tufts?pdf=1505

Interactive Question:
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4.1.7. If the p?-value < alpha, we reject the null hypothesis and infer th...

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If the p?-value < alpha, we reject the null hypothesis and infer that there is a statistical difference or association between the two groups.

Please choose only one answer:

- True
- False

4.1.8. The t?-test can be used to test for differences among three groups.

Author: Janet Forrester

The t?-test can be used to test for differences among three groups.

Please choose only one answer:

- True
- False

Check the answer of this question online at QuizOver.com:
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Flashcards:
http://www.quizover.com/flashcards/the-t-test-can-be-used-to-test-for-differences-by-dr-janet-forrester?pdf=1505

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4.1.9. Confidence intervals depend upon the standard deviation, the sample...

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Confidence intervals depend upon the standard deviation, the sample size, and the confidence level, which is based on alpha.

Please choose only one answer:

- True
- False

4.1.10. Type II error occurs when we do not reject the null hypothesis, whe...

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Type II error occurs when we do not reject the null hypothesis, when, in fact, we should.

Please choose only one answer:

- True
- False