

## Medical Committee <br> The University of Jordan

## 2013_لجنة\#

## Biostatistics

## Mid exams:

- Find the messing value in the case-control table, $\mathrm{OR}=10-10$
- Find the prevalence in the cross-sectional table - 30\%
- "asbestos exposure precedes lung cancer" is connected to which Hill's postulate - temporality 100 children with lead exposure, 5 years they got disease
- Find incidence among exposed - 0.4
- Find RR-8
- Find AR - 0.35
- Wrong about RR - less than 1 indicates a protective factor for the unexposed group
- RR measures - magnitude of association between disease and exposure Z-test
- The hypothesis - H0: M1=M2 ; HA: M1<>M2 ; two sided
- Do you reject the null hypothesis - yes, because $z$ equals 2.58 and is $>$ than *the number*
- $\quad$-value -0.0104 (not sure of the number)
- Selection bias is a problem of - case-control study
- Definition of determinant in epidemiology - agent, host and environment
- Not an advantage in case control study - multiple diseases in one study
- The unit in ecological studies - population
- Affect internal validity - A, B and C

Distribution table

- $\mathrm{P}(<4)-0.93$
- $P(1<=x<=3)-0.48$
- Variance in a binomial distribution, $\mathrm{n}=75$ and $\mathrm{p}=0.6-18$
- Prevalence is almost equal to incidence in - C \& D (fatal and short duration diseases)
- Chi square with a X2 value less than that for an alpha $=0.05$ - we accept the null hypothesis (maybe)
- Degree of freedom in paired samples with a size of 17-16

Airfighters

- T value - 2.7
- Conclusion - airfighters have a faster decrease in their respiratory thing
- If left handed people in population where 0.5 , probability of having right handed people -0.95
- Probability of a patient for surgery given he is a male -0.343
- Sensitivity: 0.8 Specificity: 0.87 , rate of disease 0.004 , what is predictive value positive -0.0204 (mostly)
- A has a probability of $1 / 2$ and $B 1 / 3$, they are independent, the probability of both happening 0.167
- Arab country with most depression rates - Jordan
- Not a risk factor for depression - Old age
- First to acknowledge occupational health - old Egyptians
- Industrial revolution unions were most interested in - wages
- Correct statement - OSHA is a worldwide source of occupational health information
- A physical trauma - light
- Burnout is due to - stresses
- True about bullying - all of the others
- A struck against trauma - head hitting low ceilings
- Pneumoconiosis - dust in lungs
- Risk assessment involves - all
- A hazard - is something that can cause harm if not controlled


## Final exam ??:

- Wrong about error type II - is equal to 1-alpha
- Wrong about alpha - is the probability of correctly accepting the alternate hypothesis
- Not involved in the determination of $n$ - population mean
- In a sample (3, 4, 4, 5, 4, 9, 15), the best measure of central tendency - the median (according to doctor)
- Measures the variation of values around the mean - both the range and STDEV $(a+c)$ (maybe)
- True about nominal qualitative variables - can't be put in order
- Which statement is true about variables - the answer is supposed to be $(a+b+c+d)$ but $d$ was wrong

For these 10 values $20,25,26,28,29,34,36,37,36,44$ :

- Mean: 31.5
- Variance and standard deviation: 50.7, 7.12
- Median and range: 31.5, 24
- Mode and Coefficient of variance: 36, 22.6\%
- The critical value or $Z$ score is used for - Normal distribution.
- Significance test - $A \& B$ (used in hypothesis testing, Used to determine if the difference is real or due to chance)
- When we accept the null hypothesis knowing that alpha < 0.05 means - If the null hypothesis is true, we may wrongly reject it 5 times in every 100 times

For two samples of data, two populations, normally distributed

- The two hypotheses are: $\mathrm{H} 0: \mathrm{M} 1=\mathrm{M} 2 ; \mathrm{HA}: \mathrm{M} 1<>\mathrm{M} 2$, two sided
- Finding the test statistic calculated and from table $-2.04,1.96$ (the question seems to be wrong)
- The decision we make - Reject the null hypothesis and consider the alternative to be true
- The p-value: . 0414 (I think the question is wrong)
- Mean 160 pounds, standard deviation 36 , the $P(150<=Z<=180)=0.3226$
- Mean 160 pounds, standard deviation 36 , the $P(>210)=.0823$ (close to this)
- For paired $t$ test, if test static value is larger than critical value - we reject the null hypothesis. For a probability distribution table:
- $P(X<3)=0.88$
- $P(1<=X<=4)=0.51$
- $P(X>2)=0.12$
- In the Poisson distribution, lambda is 4, Probability for either 3 or 4 accident $=0.391$ $25 \%$ with diabetes, $80 \%$ of them low BDI; $75 \%$ without diabetes, $20 \%$ of them low BDI
- Probability for low BDI: 35\%
- After choosing a low BDI woman; probability of being diabetic: 57\%
- degree of freedom when $\mathrm{n}=20: 19$
- In a binomial distribution, $p=0.8, n=$ ??, find the variance: $=2^{*} p^{*}(1-p)$
- Which is wrong about ordinal variables: cannot be put in order
- In a binomial distribution, $\mathrm{p}=0.4, \mathrm{n}=15$, what is $\mathrm{P}(\mathrm{x}>4): 0.9095$ (maybe)
- In practice, we use the $t$ test in case of - all of above (maybe)
- Chi square test is used for - categorical data
- Wrong about subjective probability - can be applied for an event that occurs more than one time
- Wrong about the rules of probability - mutually exclusive events can happen at the same time In a screening test table
- The probability of having a person with the disease - .075 , marginal
- Sensitivity - can't remember


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