

Course VI-2, 2015

OpenEpi

<http://www.openepi.com>

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SLIDE 1

Useful when...

1. You want to calculate 95%CI of a proportion.
2. You have a filled contingency table and want to perform a statistical test.
3. You know mean (SD) of your data and want to perform a statistical test.
4. You want to calculate a sample size.



SLIDE 2

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- Counts
 - Std.Mort.Ratio
 - Proportion**
 - Two by Two Table
 - Dose-Response
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- Person Time
 - 1 Rate
 - Compare 2 Rates
- Continuous Variables
 - Mean CI
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 - t test**
 - ANOVA
- Sample Size
 - Proportion
 - Unmatched CC
 - Cohort/RCT**
 - Mean Difference**
- Power
- Random numbers

OpenEpi Open Source Epidemiology

Now in English, French, Spanish, Italian, and

Version 3.03a Updated 2015/05/04 Try it in a S



OpenEpi provides studies, stratified analysis, sample and other evaluation and other useful site

OpenEpi is free from a web server required. The program with recent Linux seeing this, you the browsers of

Test results are always a good idea. Links to hundreds manual at [Info

The programs have

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translated. Some of the components from other sources have

SLIDE 3

Proportion

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Start

Enter

Results

Examples

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Conf. level=95%

Calculate

Simple Proportion		
Sample	Numerator	10
	Denominator	100
Multiply results by	100	eg, 100 for %
Population size	1000000	if large, leave as 1000000
Compare to %	50.0	for optional statistics



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SLIDE 4

95% Confidence Limits for Proportion 10/100
Multiplier=100
Large population size or sample with replacement.
Lower CL Per 100 Upper CL

Proportion as Percent	10	100
Mid-P Exact	5.193	17.1
Fisher Exact(Clopper-Pearson)	4.9	17.62
Wald (Normal Approx.)	4.12	15.88
Modified Wald(Agresti-Coull)	5.349	17.61
Score(Wilson)*	5.523	17.44
Score with Continuity Correction (Fleiss Quadratic)	5.163	18.04

*LookFirst items: Editor's choice of items to examine first.

One-Sample Test for Binomial Proportion, Normal-Theory Method
 Does proportion 0.1 differ from 0.5?
 z-value = -8
 Two-sided p-value=<0.0000001

Results from OpenEpi, Version 3, open source calculator--Proportion
 Print from the browser with ctrl-P
 or select text to copy and paste to other programs.



Two by Two

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Start	Enter	Results	Examples	Help
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Conf. level=95%

		Disease		Totals
		(+)	(-)	
Exposure	(+)	10	20	30
	(-)	20	30	50
Totals		30	50	80



2 x 2 Table Statistics

Single Table Analysis

		Disease	
		(+)	(-)
Exposure	(+)	10	2030
	(-)	20	3050
		30	5080

Chi Square and Exact Measures of Association

Test	Value	p-value(1-tail)	p-value(2-tail)
Uncorrected chi square	0.3556	0.2755	0.5510
Yates corrected chi square	0.128	0.3603	0.7205
Mantel-Haenszel chi square	0.3511	0.2767	0.5535
Fisher exact		0.3621(P)	0.7243
Mid-P exact		0.2823(P)	0.5647



T test

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Clear Calculate

Two-Sample Independent t Test					
Confidence Interval (%) {two-sided}			95	<i>Enter a value between 0 and 100, usually 95%</i>	
	Sample Size	Mean	Std. Dev.	(or)	Std. Error
Group 1	50	10	2		
Group 2	50	20	3		

Two-Sample Independent *t* Test

Input Data

Two-sided confidence interval	95%			
	Sample size	Mean	Std. Dev.	Std. Error
Group-1	50	10	2	
Group-2	50	12	3	

Result	<i>t</i> statistics	<i>df</i>	p-value ¹	Mean Difference	Lower Limit	Upper Limit
Equal variance	-3.92232	98	0.0001628	-2	-3.01188	-0.988123
Unequal variance	-3.92232	85	0.0001772	-2	-3.01382	-0.98618

Test for equality of variance ²	<i>F</i> statistics	<i>df</i> (numerator,denominator)	p-value ¹
2.25		49,49	0.005325

¹ p-value (two-tailed)

² Hartley's *f* test for equality of variance



Sample size: Cohort/RCT

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Start Enter Results Examples Help

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Sample Size: X-Sectional, Cohort, & Randomized Clinical Trials

Two-sided confidence level(%)	95	(1-alpha) usually 95%
Power (1-beta or % chance of detecting)	80	Usually 80%
Ratio of Unexposed to Exposed in sample	1.0	For equal samples, use 1.0
Percent of Unexposed with Outcome	5	Between 0.0 and 99.9
Please fill in 1 of the following. The others will be calculated.		
Odds ratio		
Percent of Exposed with Outcome	10	between 0.0 and 99.9
Risk/Prevalence Ratio		
Risk/Prevalence difference		Between -99.99 and 99.99

Sample Size: X-Sectional, Cohort, & Randomized Clinical Trials

Two-sided significance level(1-alpha):	95
Power(1-beta, % chance of detecting):	80
Ratio of sample size, Unexposed/Exposed:	1
Percent of Unexposed with Outcome:	5
Percent of Exposed with Outcome:	10
Odds Ratio:	2.1
Risk/Prevalence Ratio:	2
Risk/Prevalence difference:	5

	Kelsey	Fleiss	Fleiss with CC
Sample Size - Exposed	437	436	475
Sample Size-Nonexposed	437	436	475
Total sample size:	874	872	950



Sample size: Mean Difference

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Start Enter Results Examples Help

Clear Calculate

Sample Size For Comparing Two Means			
Confidence Interval % (two-sided)	95	Enter a value between 0 and 100, usually 95%	
Power	80	Enter a value between 0 and 100, usually 80%	
Ratio of sample size (Group 2/Group 1)	1		
	Group 1	Group 2	Enter means OR difference on next line
Mean	10	and	12 or Difference
Std. Dev.	3		4 Enter Std. Deviation OR Variance of each group
Variance			

Sample Size For Comparing Two Means

Input Data

Confidence Interval (2-sided)	95%		
Power	80%		
Ratio of sample size (Group 2/Group 1)	1		
	Group 1	Group 2	Difference*
Mean	10	12	-2
Standard deviation	3	4	
Variance	9	16	
Sample size of Group 1	50		
Sample size of Group 2	50		
Total sample size	100		



Sample data

	<i>Mean (SD) or N(%)</i>		p-value*
	City A N=200	City B N=200	
Systolic blood pressure	123 (20)	120 (25)	
Hypertension			
Yes	20 (10%)	12 (6%)	
No	180 (90%)	188 (94%)	

* T-test or Chi-square test was used.





Assignments

1. Calculate 95% confidence interval of a prevalence of hypertension in each city. **“Proportion”**
2. Select and perform an appropriate statistical test for each item (BP and HT). **“Two by Two” or “t test”**
3. The sample data is from a pilot test. Calculate a sample size for the main survey. **“Cohort/RCT” or “Mean Difference”**

