

## Practical Meta-Analysis Effect Size Calculation Exercise

Calculate a standardized mean difference effect size for each of the following examples using the Web-based Effect Size Calculator found at:

[http://www.campbellcollaboration.org/resources/effect\\_size\\_input.php](http://www.campbellcollaboration.org/resources/effect_size_input.php)

Note that this program calculates the standardized mean difference, the correlation, and the odds-ratio and risk-ratio effect sizes. This exercise focuses solely on the first of these.

**Exercise 1:** A study reports the mean self-esteem score on a standardized scale (higher values indicating more self-esteem) for the treatment group of  $n = 25$  as 127.8 and for the comparison group of  $n = 30$  as 132.3. The standard deviations are 10.4 and 9.8, respectively.

What is the ES for this data?

**Exercise 2:** A study reports a  $t$ -value of 1.68, favoring the treatment group. The treatment group has 10 respondents and the comparison group has 12.

What is the ES for this data?

**Exercise 3:** A study reports that the treatment and control group sample sizes of 10 and 12 ( $df = 20$ ). The study fails to report the means, standard deviations, or  $t$ -value. However, it does report that the  $t$ -test was statistically significant ( $p = .037$ ).

What is the ES for this data?

**Exercise 4:** A study reports a correlation between the group variable (treatment = 1 and control = 0) and the dependent variable as  $r = .27$ .

What is the ES for this data?

**Exercise 5:** A study reports the following data:

*Reading Achievement Test Scores by Group*

<i>Group</i>	<i>Mean</i>	<i>n</i>
Learning Disabled Students	55.38	13
Low Achievers, Not Learning Disabled Students	59.40	18
Average Achievement Students	75.14	37
Advance Placement Students	88.00	22

The  $F$ -ratio for this data is reported as  $F_{(3,86)} = 7.05$ . As the meta-analyst, you are only interested in the difference between the first two groups. Unfortunately, the study authors did not report the standard deviations in the written report.

What is the ES for this data?

**Exercise 6:** A study of adult psychotherapy reports the following data on the percent of clients in the treatment and control conditions that are rated as “improved” at post treatment. There were 42 patients in the treatment group and 29 in the control group.

	<i>Not Improved</i>	<i>Improved</i>
<i>Treatment</i>	32%	68%
<i>Control</i>	37%	63%

What is the ES for this data?

**Exercise 7:** A study reports the frequency distribution for a variable of interest for the treatment and control conditions (shown below) but does not report the means and standard deviations.

<i>Degree of Depression</i>	<i>Condition</i>	
	<i>Control</i>	<i>Treatment</i>
<i>No depression</i>	20	15
<i>Mildly depressed</i>	20	15
<i>Depressed</i>	10	15
<i>Profoundly depressed</i>	10	15

What is the ES for this data?

**Exercise 8 (extra credit!):** A study using a nonequivalent comparison group design compares partner reported domestic violence (as reported on the CTS/2 scale; this generates continuous type data for several forms of abuse) for men court mandated to batterer's intervention program to men sentenced to probation only. The study measures a host of baseline measures (such as employment status, marital status, age, etc.) that are known to be related to domestic violence and includes these measures in a regression analysis predicting post-treatment domestic abuse. The regression model also includes a dummy variable for whether the man was sentenced to the intervention or probation only. You wish to base the effect size on the "adjusted" estimate of the treatment effect from the regression analysis. Information available includes the unstandardized regression coefficient (-.523), standard deviation for the dependent variable, severity of physical abuse (9.23), and the sample sizes for the intervention and probation only groups (125 and 254, respectively).

What is the covariate adjusted ES for this data?