Al-Mustaqbal University College

Department of Anesthesia techniques

Third Stage

# Lecture 8

Asst. Lect. Raghda M. Alshemari

2021-2022

# Independent Samples T-Test - Assumptions

- Conclusions from an independent samples t-test can be trusted if the following assumptions are met:
- Independent observations. This often holds if each case in SPSS represents a different person or other statistical unit. This seems to hold for our data.
- Normality: the dependent variable must follow a normal distribution in the population. This is only needed for samples smaller than some 25 units. We'll see the actual samples sizes used for our t-test after running it so we won't bother about normality until then.

# Independent Samples T-Test - Assumptions

- Homogeneity: the standard deviation of our dependent variable must be equal in both populations. We only need this assumption if our sample sizes are (sharply) unequal.

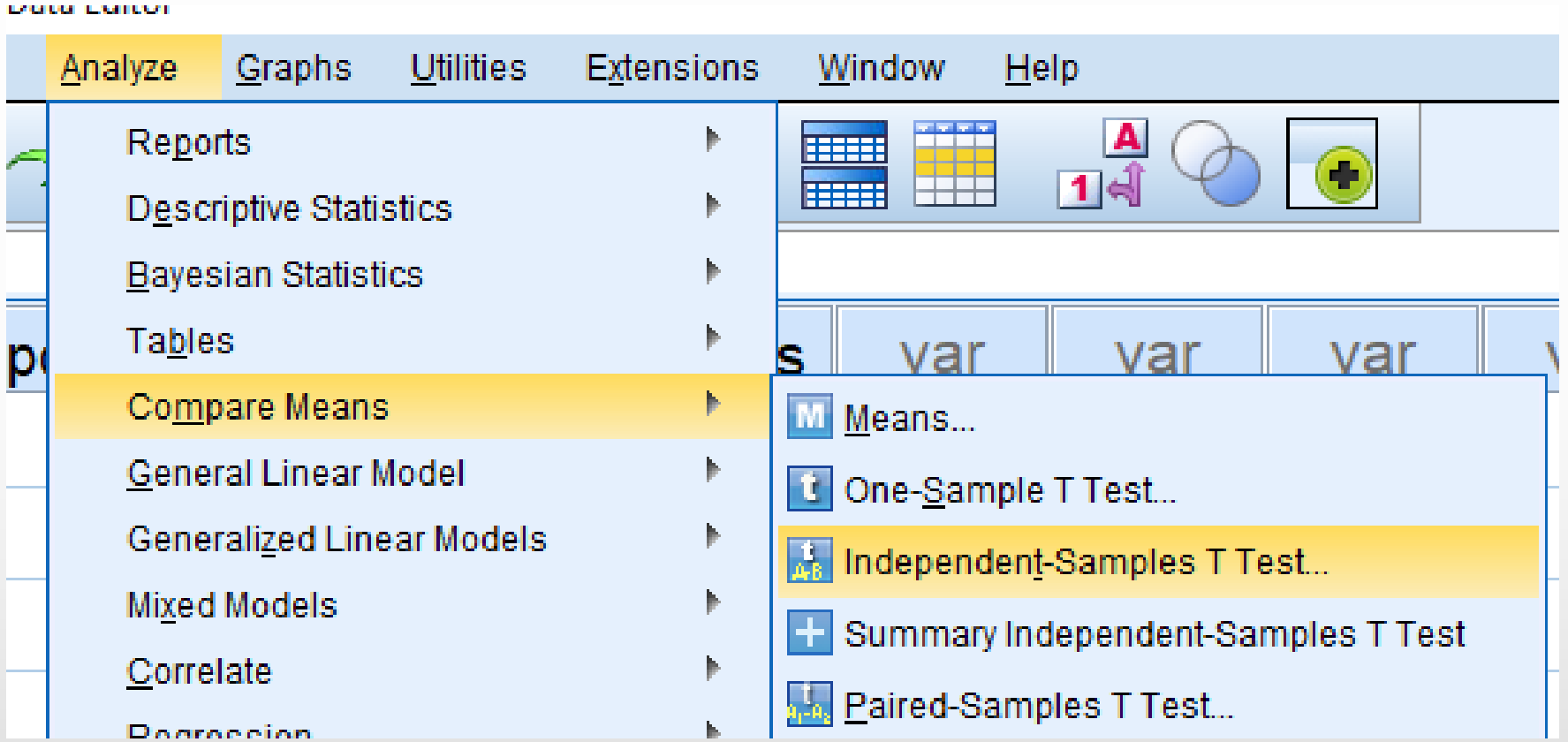
- SPSS tests if this holds when we run our t-test. If it doesn't, we can still report corrected test results.

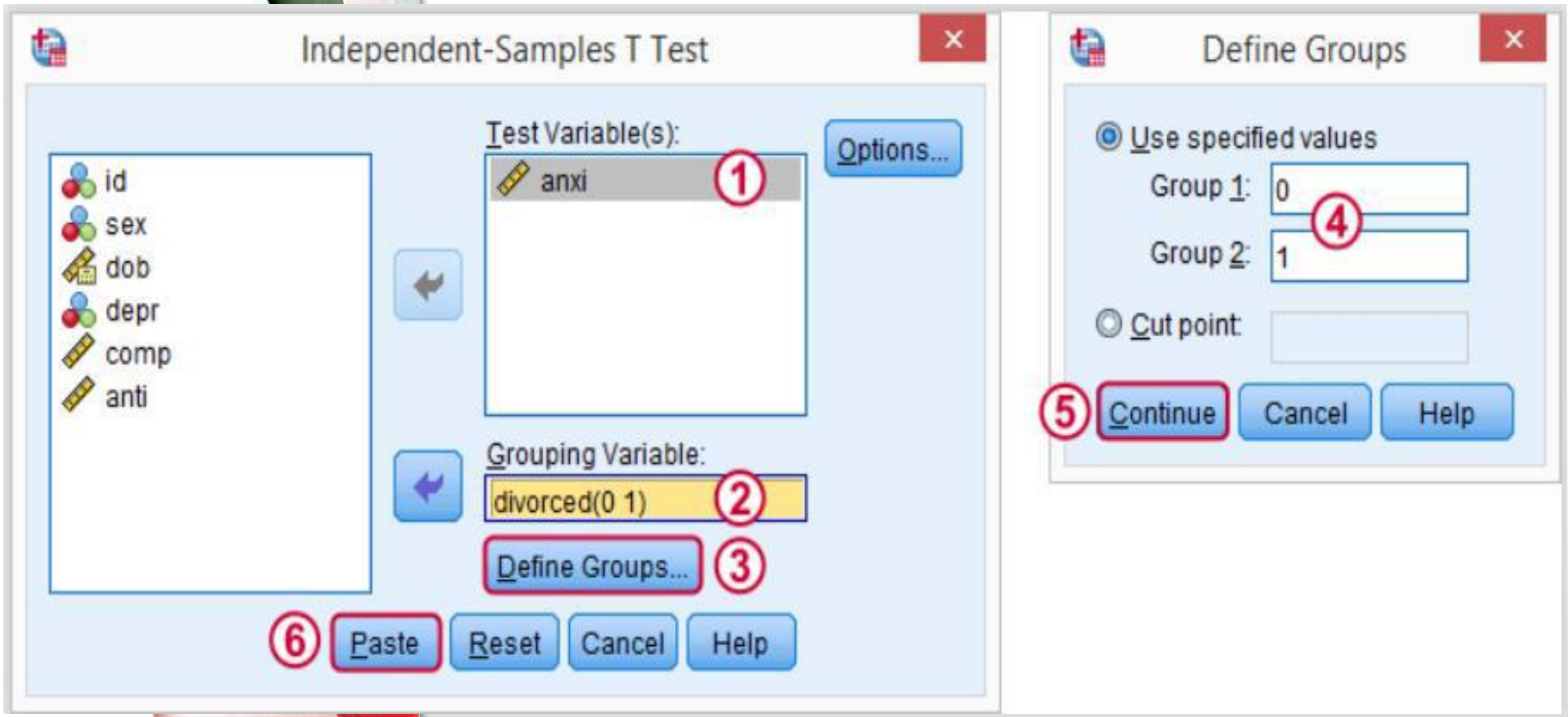
# Quick Data Check

- The data at hand have been prepared and are good to go.

However, if you run a t-test on other data, you should at least inspect some histograms of your dependent variable(s).

- Make sure their distributions look plausible. If they contain any extreme values, specify them as user missing values.


Analyze
Graphs
Utilities
Extensions
Window
Help
Reports
Descriptive Statistics
Bayesian Statistics
Tables
Compare Means
General Linear Model
Generalized Linear Models
Mixed Models
Correlate
Regression
var
var
var
Means...
One-Sample T Test...
Independent-Samples T Test...
Summary Independent-Samples T Test
Paired-Samples T Test...


Independent-Samples T Test
id
sex
dob
depr
comp
anti
Test Variable(s):
anxi
1
Options...
Grouping Variable:
divorced(0 1)
2
Define Groups...
3
6
Paste
Reset
Cancel
Help
Define Groups
Use specified values
Group 1:
0
4
Group 2:
1
Cut point:
5
Continue
Cancel
Help

① We'll first-test anxi and make sure we understand the output. We'll get to the other 3 dependent variables later.

⑥ Clicking Paste creates the syntax below. Let's run it.

## SPSS Independent Samples T-Test Syntax

```
*Independent-samples t-test syntax for anxi by divorced.

T-TEST GROUPS=divorced(0 1)
/MISSING=ANALYSIS
/VARIABLES=anxi
/CRITERIA=CI(.95).
```

Thank You