

Blood pressure measurement

[Health & Medicine](#)



1. Carry out a t test of two independent sample means for two groups (placebo/control and treatment/calcium) using the blood dataset

Process in SPSS

Analyse-> Compare means-> Independent sample T Test

95% confidence interval

99% confidence interval

Since Levene's Test value is higher than 0.05 we have to select the p-value for "Equal variances assumed". That is 0.726 for the initial blood pressure and 0.362 for the final blood pressure. Since both of these values are higher than 0.05 and both 99% and 95% Confidence Intervals include zero "0", there is no significant difference between the placebo and treatment groups. In other words the mean blood pressure in the treatment group is not significantly lower than that of the placebo group.

2. Check the sample distribution using a histogram and normal curve shape imposed on it

Procedure in SPSS

Graphs-> Interactive-> Histogram-> Then drag the variable to the X axis & select "normal curve" in the Histogram tab

3. Carry out tests of skewness of the distribution.

Procedure in SPSS

Analyze-> Nonparametric tests-> One sample K-S

One-Sample Kolmogorov-Smirnov Test

Initial blood pressure

N

21

<https://assignbuster.com/blood-pressure-measurement/>

Normal Parameters(a, b)

Mean

114.00

Std. Deviation

9.597

Most Extreme Differences

Absolute

.202

Positive

.202

Negative

-.090

Kolmogorov-Smirnov Z

.924

Asymp. Sig. (2-tailed)

.361

a Test distribution is Normal.

b Calculated from data.

4. Provide short definitions of the following terms:

Standard deviation: standard deviation is a measure of dispersion of a population or a data set from the observed mean. Low value indicates data has very close value to the mean while large values indicate highly deviated or spread data. In this test Standard deviations of initial blood pressure were <https://assignbuster.com/blood-pressure-measurement/>

9. 02 and 10. 62 in placebo and calcium groups respectively.

Variance: is a measure of average statistical dispersion. Like standard deviation it also gives an idea about the distance of its possible values from the expected value of the mean. Whereas the mean is a way to describe the location of a distribution, the variance is a way to capture its scale or degree of being spread out.

Hypothesis test: hypothesis test is a statistical method of identifying difference between two populations or samples. This helps to find out these populations are different or equal. Here independent sample T Test was performed as the hypothesis test.

Level of significance: the significance level of a test is a probability of null hypothesis to be true. As an example in above test level of significance for final blood pressure between placebo and treatment groups is 0. 36. This means null hypothesis (i. e. treatment has no effect) has 0. 36 or 36% probability to exit. Usual cutoff for significance level is 0. 05 or 5% and null hypothesis is rejected if the Level of significance is below 0. 05.

Standard error of the sample mean : is the standard deviation of the error in the sample mean relative to the actual mean. In this comparison standard error of the initial blood pressure in the placebo group is 2. 721.

References

Dodge, Yadolah (ed) 2003, The Oxford Dictionary of Statistical Terms, Oxford University Press Inc, NewYork.