Date: 03, 27, 2023

## Effects of core stability exercises and cognitive tasks compared to general exercises and cognitive tasks on chronic non-specific back pain.

## Statistical analysis

SPSS 21 software and STATA 13.0 software will be used in this study for statistical analysis.

## **Descriptive Statistics**

Descriptive information related to the participants of this research, including age, sex, weight, height, body mass index, and all the main variables, will be reported in summary and separated into groups. Before any statistical test, all variables will be checked for normal distribution using the Shapiro-Wilk statistical test. If any variables do not follow the normal distribution, we will use the "Gladder" command in Stata software. In that case, the possibility of creating a normal distribution will be checked by one of the methods of changing the variable. If possible, the variable will be altered for analysis. And after performing the statistical test and reporting the results, it will be returned to the raw scale (20). If none of the variable change methods can normalize the distribution, non-parametric tests will be used for the statistical analysis of the relevant variable.

## **Analytical statistics**

The mixed model ANOVA test will be used to analyze the variables related to the primary and secondary outcomes with normal distribution -2 groups, two situations, and two times (a total of 8 situations (2 situations x 2 times x 2 groups)). A post hoc test will be performed to check for any changes within the group, using the Bonferroni method. Friedman test will also be used for variables with non-normal distribution. A significance level (P value) of less than 0.05 will be considered to report the results.