STATISTICAL ANALYSIS PLAN

Study Title:

Effect of Pursed-Lip Breathing on Physiological Parameters and Discharge Readiness in Children With Pneumonia

ID: ATU-PLB-2025

NCT Number: Pending Assignment

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Data Analysis

The data obtained from the study will be analyzed using the IBM SPSS Statistics software package (version 25 or higher). Before beginning the analysis, the normality distribution of all continuous variables (scale scores and physiological parameters) will be assessed. For this purpose, the Shapiro-Wilk test as well as skewness and kurtosis values will be considered. Skewness and kurtosis values within the ±1.5 range will be considered indicative of a normal distribution.

As part of descriptive statistics:

- For continuous variables: mean, standard deviation, minimum and maximum values will be reported.
- For categorical variables: frequency and percentage distributions will be reported.

The data obtained in the study will be analyzed to evaluate both **between-group differences** (intervention vs. control) and **within-group changes over time** (pre-test and post-test):

- **Between-group comparisons:**
  - For normally distributed variables: Independent Samples t-test
  - For non-normally distributed variables: Mann-Whitney U test
- **Within-group comparisons (pre- and post-test):**
  - For normally distributed variables: Paired Samples t-test
  - For non-normally distributed variables: Wilcoxon Signed Rank Test
- **To evaluate the interaction between group and time:**
  - If normality and variance homogeneity are satisfied: Two-way repeated measures ANOVA (Mixed ANOVA)
  - If assumptions are violated: Friedman test or Generalized Linear Model (GLM) will be used

In addition, to assess the effect of the PLB intervention, changes in physiological parameters such as oxygen saturation, heart rate, respiratory rate, and PEF values will be analyzed both over time and between groups.

Parental perceptions of readiness for discharge, as measured by the relevant scale, will also be evaluated through both between-group and within-group comparisons.

A significance level of $\mathbf{p < 0.05}$ will be considered statistically significant for all analyses.