Statistical Analysis Plan
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ANALYSIS OF DATA

The data of the study were analyzed with SPSS 26 statistical package program. Descriptive statistics were analyzed as sample size (n), percentage (%), mean and standard deviation ($\bar{x}\pm ss$), highest / lowest value (max./min.), mode and median and shown in tables (Güriş and Turanlı, 2018).

In the cross-tabulation comparison, the Pearson Chi-Square test statistic was used if the expected frequency for each cell was greater than 5, and the Fisher's Exact Test (ET) statistic was used if the expected frequency for each cell was 5 and less than 5 (Pallant, 2020).

For the normality test, the kurtosis and skewness values of the VAS according to the independent variables were taken as a basis, and if this value was between -1.5 and +1.5, it was accepted that it provided a normal distribution (Fein et al, 2008).

If the correlation coefficient is less than 0.30, it is assumed to be low, if it is 0.31 to 0.49, it is moderate, and if it is above 0.50, it is assumed to be highly correlated, and Spearman's rho correlation coefficients, which are nonparametric correlations, are taken as a basis (Tabachnick and Fidell, 2013).

In the comparisons between groups, one-way analysis of variance (One-Way ANOVA) was used if the analysis conditions were met, and Kruskal Wallis test statistics were used when it was not met (Tabachnick and Fidell, 2013). In case the assumption of homogeneity of variances was violated ($p<0.05$) as a result of the Levene test performed before the analysis, the Welch ANOVA test, which does not require the assumption of homogeneity of variance, was preferred. The Welch test gives more reliable results when the variances are not equal (Field, 2013; Ruxton, 2006). Games-Howell test was used as post-hoc analysis for group comparisons. The Games-Howell test was preferred because the variances are not homogeneous and also gives more reliable results at small sample sizes (Howell, 2012; Field, 2013). The Games-Howell test is one of the recommended post-hoc tests, especially after the Welch ANOVA (Hayes, 2022).

The eta-squared (η^2) value was taken as the basis for the effect size. Eta square (η^2); If it takes a value between 0.01 and 0.06, it has a small effect, if it takes a value between 0.06 and 0.14, it has a medium effect, and if it takes a value greater than 0.14, it has a large effect size (George, 2002).

In order to determine the patterns between the variables, *Optimal Scaling Analysis, one of the Multiple Correspondence Analysis* techniques, was performed. Optimal scaling analysis provides visualization of relationships and understanding of patterns by digitizing qualitative or ordinal scale variables in multidimensional space. Optimal scaling is a multiple fit analysis technique that allows category-level variables to be quantified and modeled in multidimensional space. This method can be used in the analysis of data at the nominal or ordinal scale, making it easier to visually understand similarity or distance relationships between data (Gifi, 1990).

No test conditions such as sample size or normality are required for this analysis (Greenacre, 1993). In the optimal scaling process, categorical variables turn into quantitative data depending on a normalization. Thus, the homogeneity relationship of multiple *and different variables (categorical – continuous*) in the same space can be visualized (Roux and Rouanet, 2010).

The X and Y coordinates obtained in the analysis represent the positions of the variables in multidimensional space. Through these coordinates, similarities and distances between groups

and variables are determined (Meulman and Heiser, 2004). These positions indicate the relationship of the relevant variable to other variables. The factors obtained as a result of the analysis indicate how much of the variance in the data is explained, and the factor loads reveal the relationship of each variable to these factors (Takane, Young & De Leeuw, 1977).

The categories of the variables *form the dimensions by clustering in a certain place with the other categories they are related to, just like in factor analysis*. Thus, the relationships between the variables were visualized in two-dimensional space, and the reliability of the analysis was tried to be evaluated by calculating the eigenvalue of these dimensions, the amount of variance explained and the reliability coefficient (Funnell et al, 2004).

All statistical tests were performed at a 95% confidence level, so a threshold value of 0.05 was adopted as statistical significance (Büyüköztürk, 2012).

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