**Results**

**Upper-Tailed Independent Samples *t*-Test**

***Introduction***

An upper-tailed independent samples *t*-test was conducted to examine whether the mean of smok1 was significantly different between the nicotine patch only and nicotine patch and motivational support categories of group.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Nicotine Patch  n= | | Nicotine patch & motivational support  n= | |
|  |  | Mean | SD | Mean | SD |
| **Age (years)** |  |  |  |  |  |
| **Baseline Values**  Depression |  |  |  |  |  |
| Anxiety |  |  |  |  |  |
| Number cigarettes smokes/day |  |  |  |  |  |
| **Gender** |  | Frequency | % | Frequency | % |
| Female |  |  |  |  |  |
| Male |  |  |  |  |  |

***Assumptions***

**Normality.** Shapiro-Wilk tests were conducted to determine whether smok1 could have been produced by a normal distribution for each category of group (Razali & Wah, 2011). The result of the Shapiro-Wilk test for smok1 in the nicotine patch only category was not significant based on an alpha value of 0.05, *W* = 0.93, *p* = .113. This result suggests that a normal distribution cannot be ruled out as the underlying distribution for smok1 in the nicotine patch only category. The result of the Shapiro-Wilk test smok1 in the nicotine patch and motivational support category was not significant based on an alpha value of 0.05, *W* = 0.94, *p* = .237. This result suggests that a normal distribution cannot be ruled out as the underlying distribution for smok1 in the nicotine patch and motivational support category. The Shapiro-Wilk test was not significant for either the nicotine patch only or nicotine patch and motivational support categories of group, indicating the normality assumption is met.

**Homogeneity of Variance.** Levene's test was conducted to assess whether the variance of smok1 was equal between the categories of group. The result of Levene's test for smok1 was not significant based on an alpha value of 0.05, *F*(1, 42) = 1.47, *p* = .231. This result suggests it is possible that the variance of smok1 is equal for each category of group, indicating the assumption of homogeneity of variance was met.

***Results***

The result of the upper-tailed independent samples *t*-test was not significant based on an alpha value of 0.05, *t*(42) = 0.25, *p* = .402, indicating the null hypothesis cannot be rejected. This finding suggests the mean of smok1 in the nicotine patch only category of group was not significantly higher than the mean of smok1 in the nicotine patch and motivational support category. The results are presented in Table 1. A bar plot of the means is presented in Figure 1.

**Table 1**

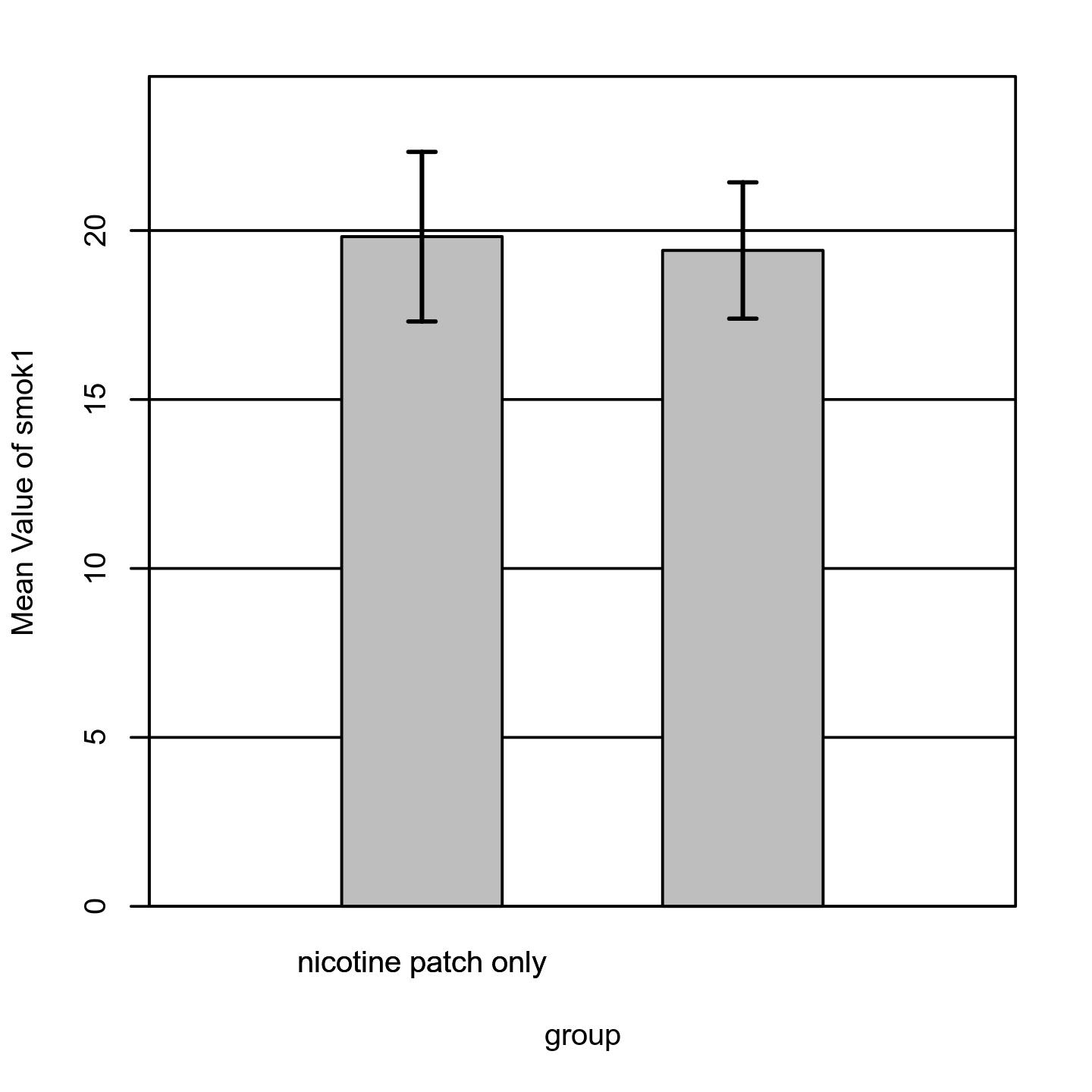
*Upper-Tailed Independent Samples t-Test for smok1 by group*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | nicotine patch only | | nicotine patch and motivational support | |  |  |  |
| Variable | *M* | *SD* | *M* | *SD* | *t* | *p* | *d* |
| smok1 | 19.82 | 6.01 | 19.41 | 4.83 | 0.25 | .402 | 0.08 |

*Note.* N = 44. Degrees of Freedom for the *t*-statistic = 42. *d* represents Cohen's *d.*

**Figure 1**

*The mean of smok1 by levels of group with 95% CI Error Bars*



**Descriptives**

***Introduction***

Summary statistics were calculated for each interval and ratio variable, and frequencies and percentages were calculated for each nominal variable split by group.

**Results**

***Frequencies and Percentages***

The most frequently observed categories of sex within the nicotine patch only category of group were male and female (*n* = 11, 50%). The most frequently observed category of sex within the nicotine patch and motivational support category of group was female (*n* = 12, 55%). Frequencies and percentages are presented in Table 2.

**Table 2**

*Frequency Table for Nominal Variables*

|  |  |  |  |
| --- | --- | --- | --- |
|  | group | | |
| Variable | nicotine patch only | nicotine patch and motivational support | Missing |
| sex |  |  |  |
| male | 11 (50%) | 10 (45%) | 0 (0%) |
| female | 11 (50%) | 12 (55%) | 0 (0%) |
| Missing | 0 (0%) | 0 (0%) | 0 (0%) |
| Total | 22 (100%) | 22 (100%) | 0 (100%) |

*Note.* Due to rounding error, percentages may not sum to 100%.

***Summary Statistics***

For nicotine patch only, the observations of anx1 had an average of 43.05 (*SD* = 4.82, *SEM* = 1.03, Min = 33.00, Max = 50.00, Skewness = -0.54, Kurtosis = -0.32). For nicotine patch and motivational support, the observations of anx1 had an average of 41.27 (*SD* = 4.72, *SEM* = 1.01, Min = 34.00, Max = 50.00, Skewness = 0.21, Kurtosis = -0.84). For nicotine patch only, the observations of dep1 had an average of 37.68 (*SD* = 5.48, *SEM* = 1.17, Min = 24.00, Max = 47.00, Skewness = -0.45, Kurtosis = 0.26). For nicotine patch and motivational support, the observations of dep1 had an average of 40.18 (*SD* = 5.46, *SEM* = 1.16, Min = 30.00, Max = 50.00, Skewness = -0.18, Kurtosis = -0.75). For nicotine patch only, the observations of smok1 had an average of 19.82 (*SD* = 6.01, *SEM* = 1.28, Min = 11.00, Max = 29.00, Skewness = 0.09, Kurtosis = -1.27). For nicotine patch and motivational support, the observations of smok1 had an average of 19.41 (*SD* = 4.83, *SEM* = 1.03, Min = 12.00, Max = 29.00, Skewness = 0.13, Kurtosis = -0.75). For nicotine patch only, the observations of age had an average of 26.55 (*SD* = 7.97, *SEM* = 1.70, Min = 19.00, Max = 46.00, Skewness = 1.45, Kurtosis = 0.99). For nicotine patch and motivational support, the observations of age had an average of 27.27 (*SD* = 8.99, *SEM* = 1.92, Min = 19.00, Max = 45.00, Skewness = 1.19, Kurtosis = -0.11). When the skewness is greater than 2 in absolute value, the variable is considered to be asymmetrical about its mean. When the kurtosis is greater than or equal to 3, then the variable's distribution is markedly different than a normal distribution in its tendency to produce outliers (Westfall & Henning, 2013). The summary statistics can be found in Table 3.

**Table 3**

*Summary Statistics Table for Interval and Ratio Variables by group*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variable | *M* | *SD* | *n* | *SEM* | Min | Max | Skewness | Kurtosis |
| anx1 |  |  |  |  |  |  |  |  |
| nicotine patch only | 43.05 | 4.82 | 22 | 1.03 | 33.00 | 50.00 | -0.54 | -0.32 |
| nicotine patch and motivational support | 41.27 | 4.72 | 22 | 1.01 | 34.00 | 50.00 | 0.21 | -0.84 |
| dep1 |  |  |  |  |  |  |  |  |
| nicotine patch only | 37.68 | 5.48 | 22 | 1.17 | 24.00 | 47.00 | -0.45 | 0.26 |
| nicotine patch and motivational support | 40.18 | 5.46 | 22 | 1.16 | 30.00 | 50.00 | -0.18 | -0.75 |
| smok1 |  |  |  |  |  |  |  |  |
| nicotine patch only | 19.82 | 6.01 | 22 | 1.28 | 11.00 | 29.00 | 0.09 | -1.27 |
| nicotine patch and motivational support | 19.41 | 4.83 | 22 | 1.03 | 12.00 | 29.00 | 0.13 | -0.75 |
| age |  |  |  |  |  |  |  |  |
| nicotine patch only | 26.55 | 7.97 | 22 | 1.70 | 19.00 | 46.00 | 1.45 | 0.99 |
| nicotine patch and motivational support | 27.27 | 8.99 | 22 | 1.92 | 19.00 | 45.00 | 1.19 | -0.11 |

*Note.* '-' indicates the statistic is undefined due to constant data or an insufficient sample size.

**Upper-Tailed Paired Samples *t*-Test**

***Introduction***

An upper-tailed paired samples *t*-test was conducted to examine whether the mean difference of smok1 and smok2 was significantly different from zero.

***Assumptions***

**Normality.** A Shapiro-Wilk test was conducted to determine whether the differences in smok1 and smok2 could have been produced by a normal distribution (Razali & Wah, 2011). The results of the Shapiro-Wilk test were not significant based on an alpha value of 0.05, *W* = 0.98, *p* = .490. This result suggests the possibility that the differences in smok1 and smok2 were produced by a normal distribution cannot be ruled out, indicating the normality assumption is met.

**Homogeneity of Variance.** Levene's test was conducted to assess whether the variances of smok1 and smok2 were significantly different. The result of Levene's test was not significant based on an alpha value of 0.05, *F*(1, 86) = 0.02, *p* = .886. This result suggests it is possible that smok1 and smok2 were produced by distributions with equal variances, indicating the assumption of homogeneity of variance was met.

***Results***

The result of the upper-tailed paired samples *t*-test was significant based on an alpha value of 0.05, *t*(43) = 6.53, *p* < .001, indicating the null hypothesis can be rejected. This finding suggests the difference in the mean of smok1 and the mean of smok2 was significantly greater than zero. The mean of smok1 was significantly higher than the mean of smok2. The results are presented in Table 4. A bar plot of the means is presented in Figure 2.

**Table 4**

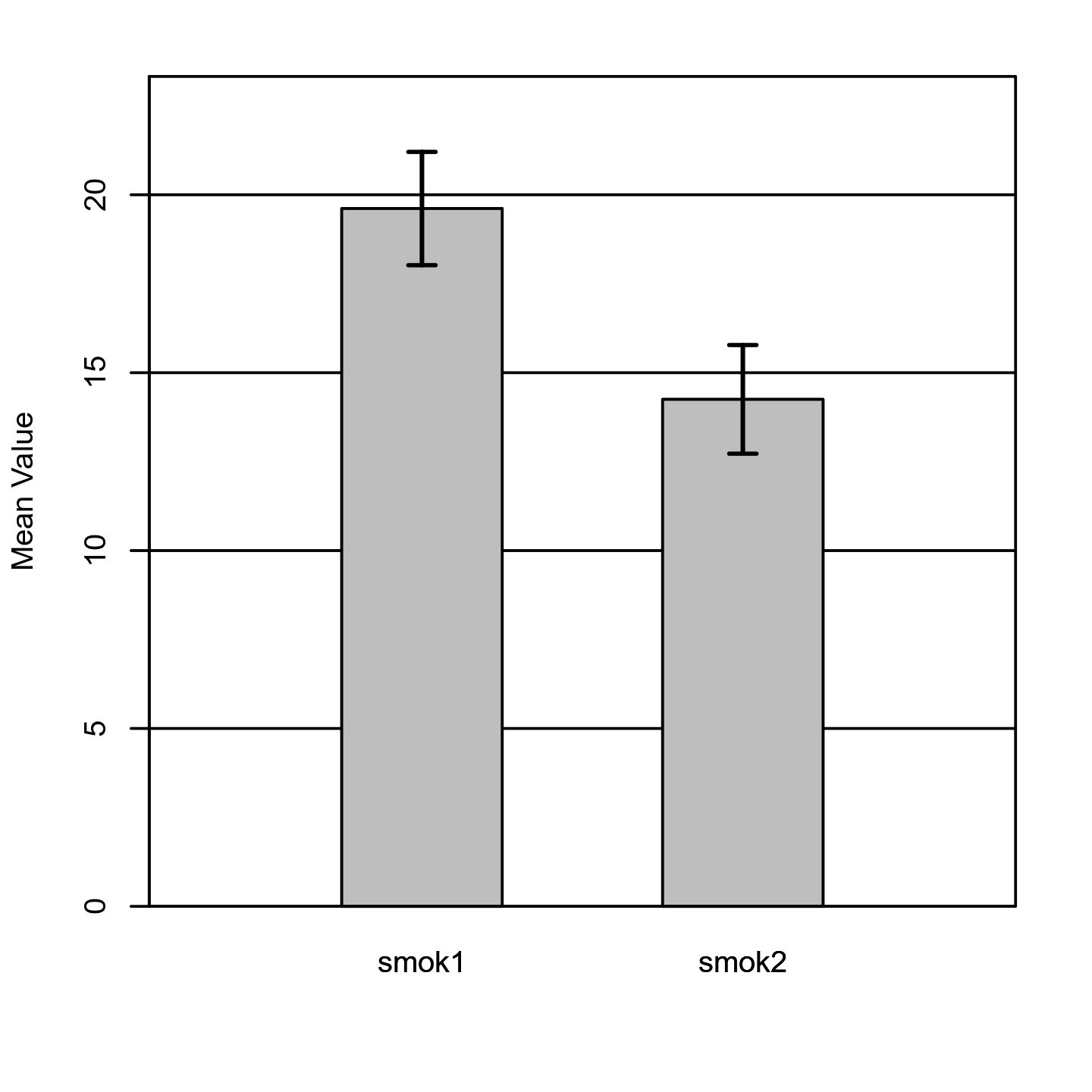
*Upper-Tailed Paired Samples t-Test for the Difference Between smok1 and smok2*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| smok1 | | smok2 | |  |  |  |
| *M* | *SD* | *M* | *SD* | *t* | *p* | *d* |
| 19.61 | 5.39 | 14.25 | 5.17 | 6.53 | < .001 | 0.98 |

*Note.* N = 44. Degrees of Freedom for the *t*-statistic = 43. *d* represents Cohen's *d.*

**Figure 2**

*The means of smok1 and smok2 with 95% CI Error Bars*



**ANOVA**

***Introduction***

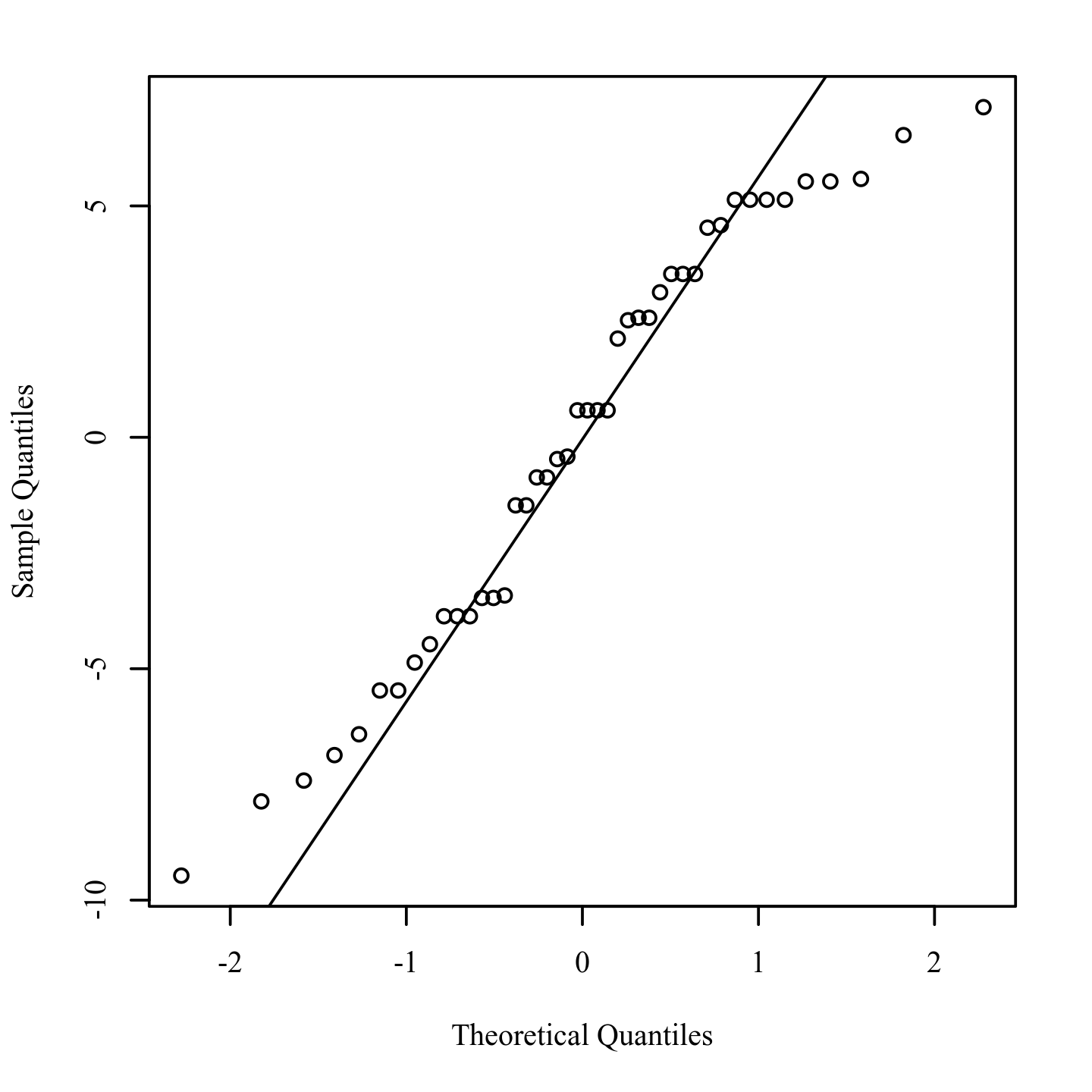
An analysis of variance (ANOVA) was conducted to determine whether there were significant differences in smok2 by dep1\_lev3.

***Assumptions***

**Normality.** The assumption of normality was assessed by plotting the quantiles of the model residuals against the quantiles of a Chi-square distribution, also called a Q-Q scatterplot (DeCarlo, 1997). For the assumption of normality to be met, the quantiles of the residuals must not strongly deviate from the theoretical quantiles. Strong deviations could indicate that the parameter estimates are unreliable. Figure 3 presents a Q-Q scatterplot of model residuals.

**Figure 3**

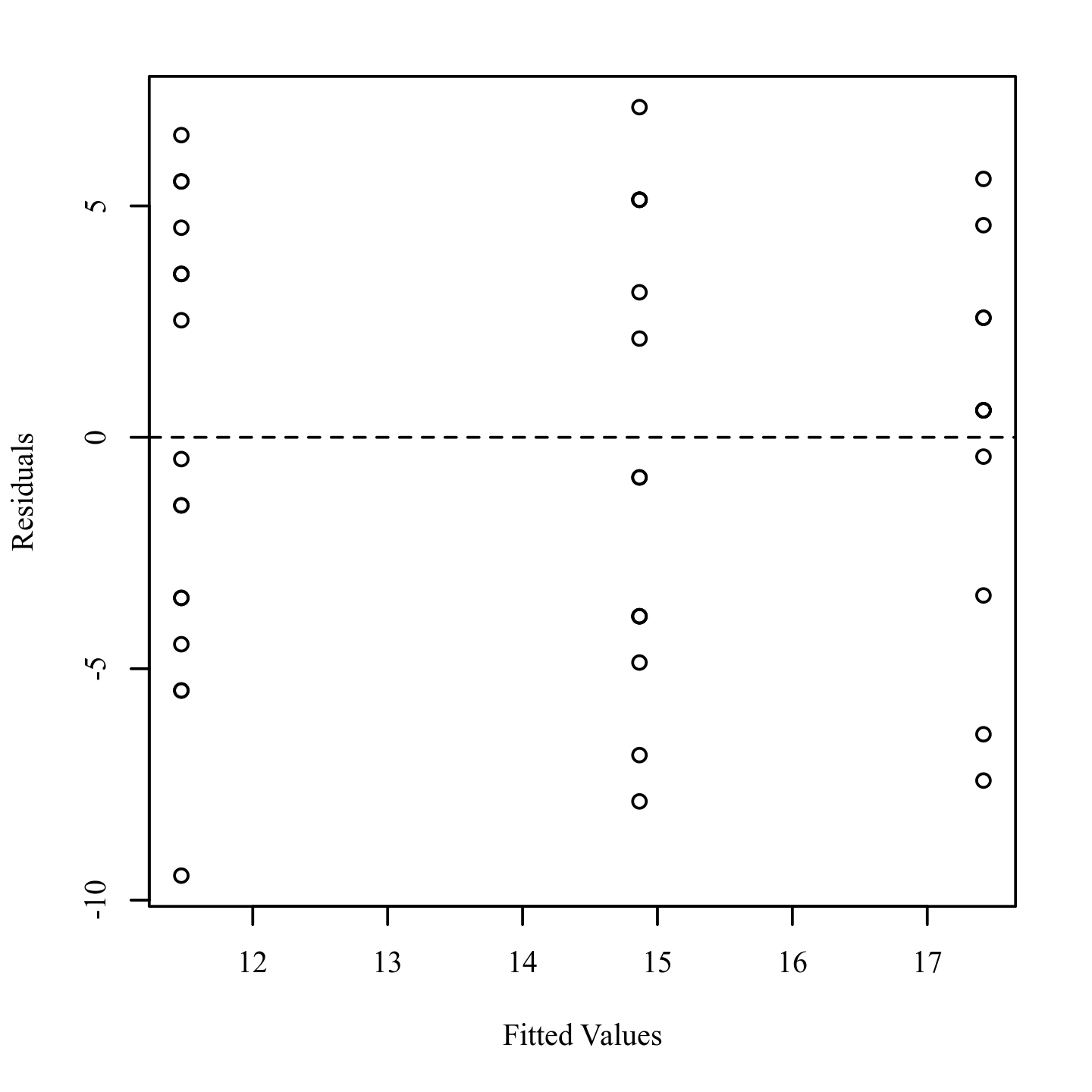
*Q-Q scatterplot for normality of the residuals for the regression model.*



***Homoscedasticity.*** Homoscedasticity was evaluated by plotting the residuals against the predicted values (Bates et al., 2014; Field, 2017; Osborne & Walters, 2002). The assumption of homoscedasticity is met if the points appear randomly distributed with a mean of zero and no apparent curvature. Figure 4 presents a scatterplot of predicted values and model residuals.

**Figure 4**

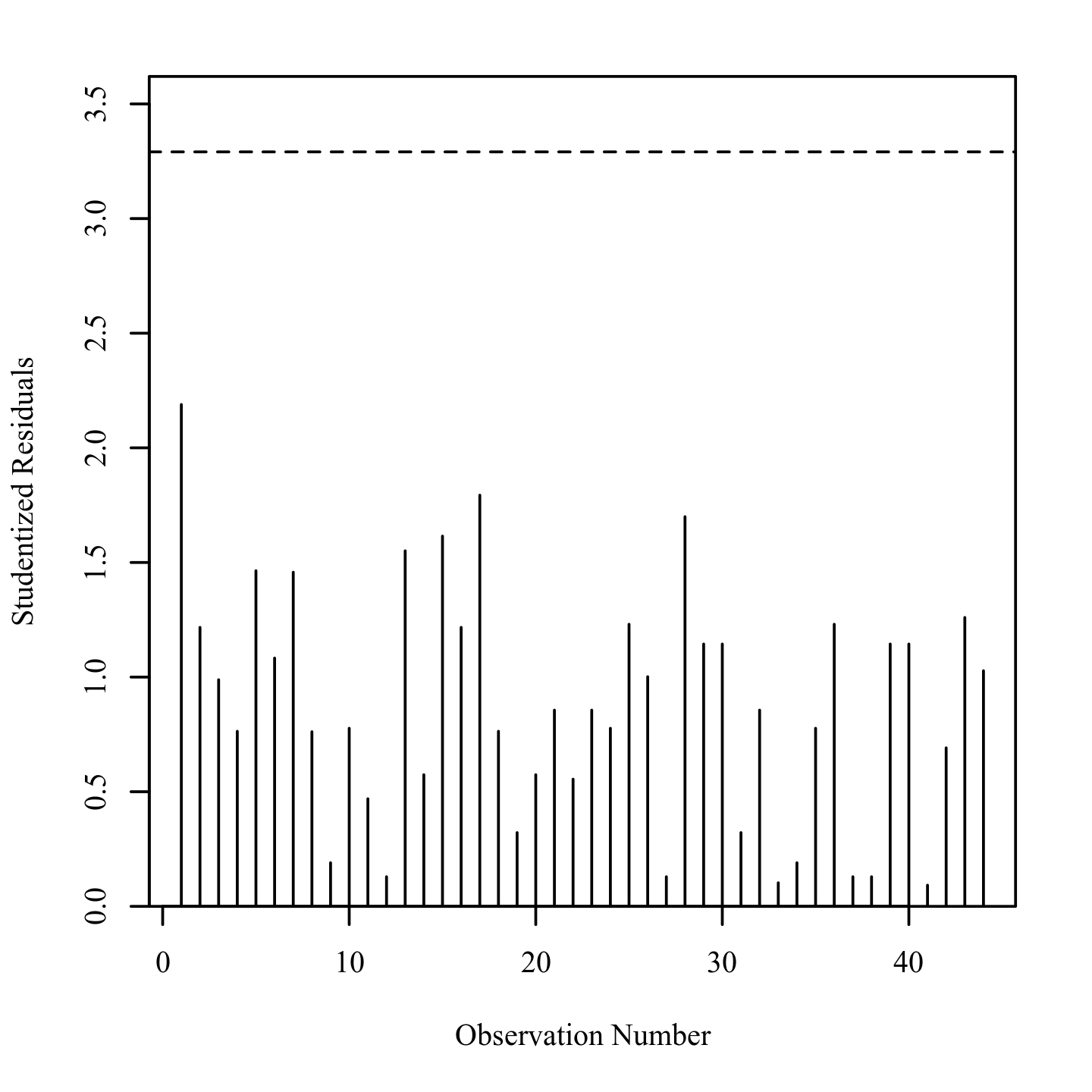
*Residuals scatterplot testing homoscedasticity*



**Outliers.** To identify influential points, Studentized residuals were calculated and the absolute values were plotted against the observation numbers (Field, 2017; Pituch & Stevens, 2015). Studentized residuals are calculated by dividing the model residuals by the estimated residual standard deviation. An observation with a Studentized residual greater than 3.29 in absolute value, the 0.999 quantile of a *t* distribution with 43 degrees of freedom, was considered to have significant influence on the results of the model. Figure 5 presents the Studentized residuals plot of the observations. Observation numbers are specified next to each point with a Studentized residual greater than 3.29.

**Figure 5**

*Studentized residuals plot for outlier detection*



***Results***

The ANOVA was examined based on an alpha value of 0.05. The results of the ANOVA were significant, *F*(2, 41) = 5.92, *p* = .006, indicating there were significant differences in smok2 among the levels of dep1\_lev3 (Table 5). The eta squared was 0.22 indicating dep1\_lev3 explains approximately 22% of the variance in smok2. The means and standard deviations are presented in Table 6.

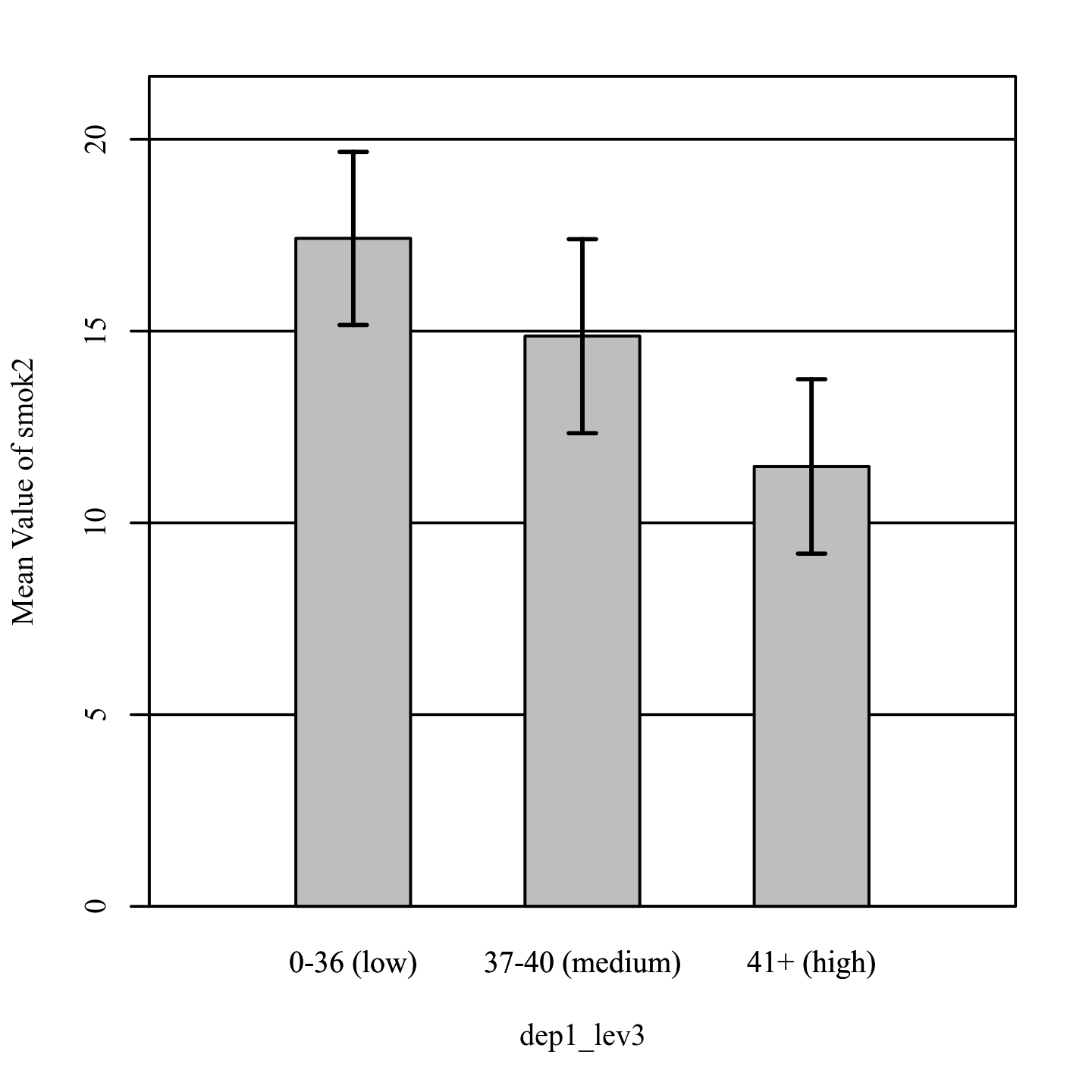
**Table 5**

*Analysis of Variance Table for smok2 by dep1\_lev3*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Term | *SS* | *df* | *F* | *p* | ηp2 |
| dep1\_lev3 | 257.36 | 2 | 5.92 | .006 | 0.22 |
| Residuals | 890.89 | 41 |  |  |  |

**Figure 6**

*Means of smok2 by dep1\_lev3 with 95% CI Error Bars*



**Table 6**

*Mean, Standard Deviation, and Sample Size for smok2 by dep1\_lev3*

|  |  |  |  |
| --- | --- | --- | --- |
| Combination | *M* | *SD* | *n* |
| 0-36 (low) | 17.42 | 3.99 | 12 |
| 37-40 (medium) | 14.87 | 5.00 | 15 |
| 41+ (high) | 11.47 | 4.78 | 17 |

*Note.* A '-' indicates the sample size was too small for the statistic to be calculated.

***Post-hoc***

Paired *t*-tests were calculated between each pair of measurements to further examine the differences among the variables based on an alpha of 0.05. The Tukey HSD p-value adjustment was used to correct for the effect of multiple comparisons on the family-wise error rate. For the main effect of dep1\_lev3, the mean of smok2 for 0-36 (low) (*M* = 17.42, *SD* = 3.99) was significantly larger than for 41+ (high) (*M* = 11.47, *SD* = 4.78), *p* = .004. No other significant effects were found.

**References**

Bates, D., Mächler, M., Bolker, B., & Walker, S. (2014). Fitting linear mixed-effects models using lme4: arXiv preprint arXiv, *Journal of Statistical Software*. https://doi.org/10.18637/jss.v067.io1

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Pituch, K. A., & Stevens, J. P. (2015). *Applied multivariate statistics for the social sciences* (6th ed.). Routledge Academic. https://doi.org/10.4324/9781315814919

Razali, N. M., & Wah, Y. B. (2011). Power comparisons of Shapiro-Wilk, Kolmogorov-Smirnov, Lilliefors and Anderson-Darling tests. *Journal of Statistical Modeling and Analytics, 2*(1), 21-33.

Westfall, P. H., & Henning, K. S. S. (2013). *Texts in statistical science: Understanding advanced statistical methods.* Taylor & Francis.

**Glossaries**

**Independent Samples *t*-Test**  
  
The independent samples *t*-test is used to determine if there is a significant difference between two groups (e.g., men vs. women) on a scale-level dependent variable. This test uses the difference between the average scores of the two groups to compute the *t* statistic, which is used with the *df* to compute the *p*-value (i.e., significance level). A significant result indicates the observed test statistic would be unlikely under the null hypothesis. The independent samples *t*-test carries the assumptions of independence of observations, normality, and equality (or homogeneity) of variance. ***Fun Fact!*** *William Sealy Gosset, who published a paper about the t distribution in 1908, worked for the Guinness Brewery in Dublin, Ireland.* **Cohen's *d*:** Effect size for the *t*-test; determines the strength of the differences between the matched scores. The larger the effect size, the greater the differences in the matched scores. **Degrees of Freedom (*df*):** Refers to the number of values used to compute a statistic. The *df* is determined by the number of observations in the sample and equal the number of observations - 1; used with *t* to compute the *p*-value. **Levene's Test:** Test to assess if the assumption of equality of variance is met; if significance is found, the groups differ in their spread of the dependent variable scores; this may differ from the output found from other statistical packages (such as SPSS), as Intellectus Statistics™ uses the median instead of the mean for calculations; the median tends to provide a more-robust choice that can account for non-normality. **Mean (*M*):** The average value of a scale-level variable. **Normality:** Refers to the distribution of the data. The assumption is that the data follows the bell-shaped curve. ***p*-value:** The probability of obtaining the observed results if the null hypothesis is true. A result is usually considered statistically significant if the *p*-value is ≤ .05. **Shapiro-Wilk Test:** A test to assess if the assumption of normality is met. If statistical significance is found in this test, the data is *not* normally distributed. **Standard Deviation (*SD*):** The spread of the data around the mean of a scale-level variable. ***t*-Test Statistic (*t*):** Used with the *df* to determine the *p* value.

**Descriptive Statistics**  
  
Descriptive statistics are typically used to describe or summarize the data. It is used as an exploratory method to examine the variables of interest, potentially before conducting inferential statistics on them. They provide summaries of the data and are used to answer descriptive research questions. ***Fun Fact!*** *A GPA is actually a descriptive statistic. It does not tell you how well you performed in a single class, only your average performance across multiple classes.* **Kurtosis:** The measure of the tail behavior of a distribution. Positive kurtosis signifies a distribution is more prone to outliers, and negative kurtosis implies a distribution is less prone to outliers. **Mean (*M*):** The average value of a scale variable. **Percentage (*%*):** The percentage of the frequency or count of a nominal or ordinal category. **Sample Minimum (Min):** The smallest numeric value in a given sample. **Sample Maximum (Max):** The largest numeric value in a given sample. **Sample Size (*n*):** The frequency or count of a nominal or ordinal category. **Skewness:** The measure of asymmetry in the distribution of a variable. Positive skewness indicates a long right tail, while negative skewness indicates a long left tail. **Standard Deviation (*SD*):** The spread of the data around the mean of a scale variable. **Standard Error of the Mean (*SEM*):** The estimate of how far the sample mean is likely to differ from the actual population mean.

**Paired Samples *t*-Test**  
  
The paired (dependent) samples *t*-test is used to assess for significant differences between two scale variables that can be matched. Typically, the scale variables are matched by time (e.g. pretest vs. posttest), but the data can also be matched in other ways (e.g. husband vs. wife). The test uses the average difference between each pair of matched scores to compute the t statistic, which is used with the *df* to compute the *p*-value (i.e., significance level). A significant result indicates the observed test statistic would be unlikely under the null hypothesis. The dependent samples *t*-test assumes that the differences between pairs of matched scores are normally distributed (i.e., normality). ***Fun Fact!*** *This test is based on the Student's t distribution. This distribution was named after William Sealy Gosset, who published a paper about the distribution in 1908 under the pseudonym "Student."* **Cohen's *d*:** Effect size for the *t*-test; determines the strength of the differences between the matched scores. The larger the effect size, the greater the differences in the matched scores. **Degrees of Freedom (*df*):** Refers to the number of values used to compute a statistic. The *df* is determined by the number of observations in the sample and equal the number of observations - 1; used with *t* to compute the *p*-value. **Mean (*M*):** The average value of a scale-level variable. **Normality:** Refers to the distribution of the data. The assumption is that the data follows the bell-shaped curve. ***p*-value:** The probability of obtaining the observed results if the null hypothesis is true. A result is usually considered statistically significant if the *p*-value is ≤ .05. **Shapiro-Wilk Test:** A test to assess if the assumption of normality is met. If statistical significance is found in this test, the data is *not* normally distributed. **Standard Deviation (*SD*):** The spread of the data around the mean of a scale-level variable. ***t*-Test Statistic (*t*):** Used with the *df* to determine the *p* value.

**ANOVA (Analysis of Variance)**  
  
The ANOVA is used to assess differences in a dependent variable by the given independent variable(s). If the independent variable(s) have more than two levels, and statistical significance is found in the ANOVA, pairwise comparisons (called post-hoc tests) are conducted to determine the paired differences. **Degrees of Freedom (*df*):** Used with the *F* to determine the *p*-value. The two dfs are derived from the number of groups and sample size. ***F* Ratio (*F*):** Used with the two *df* values to determine the *p* value, calculated by dividing the between subjects *MS* by the residuals *MS*. **Mean Square (*MS*):** Used to determine the *F* ratio; calculated by dividing the *SS* by *df*. **Normality:** Refers to the distribution of the data. The assumption is that the data follows the bell-shaped curve. If the data are not normally distributed, the results may not be reliable. **Outlier:** A data point that is abnormally distant from a set of observations. ***p*-value:** The probability that the null hypothesis - no difference in the dependent variable by the independent variable - is true. **Residuals:** Refers to the difference between the predicted value for the dependent variable and the actual value of the dependent variable. **Studentized Residuals:** Residuals that are scaled by diving the each residual by the estimated standard deviation of the residuals. **Sum of Squares (*SS*):** Used with the *df* to determine the *MS*.

**Raw Output**

**Independent t-Test for smok1 by group**

Included Variables:  
smok1 and group

Sample Size (Complete Cases):  
N = 44

Shapiro-Wilk Test:  
nicotine patch only: W = 0.928, p = 0.11  
nicotine patch and motivational support: W = 0.944, p = 0.24  
Overall: W = 0.938, p = 0.021

Levene's Test:  
dfn = 1, dfd = 42, F = 1.475, p = 0.23

Results:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | nicotine patch only | | nicotine patch and motivational support | |  |  |  |
| Variable | M | SD | M | SD | t | p | d |
| smok1 | 19.818 | 6.005 | 19.409 | 4.827 | 0.249 | 0.40 | 0.075 |

Note. n = 44, df = 42.000.

Confidence Interval Based on α = 0.05:  
Lower Limit = -2.354, Mean Difference = 0.409, Upper Limit = Inf

**Descriptives**

Included Variables:  
anx1, dep1, smok1, sex, and age

Sample Size (Complete Cases):  
N = 44

Frequency Table for Nominal Variables

|  |  |  |  |
| --- | --- | --- | --- |
|  | group |  |  |
| Variable | nicotine patch only | nicotine patch and motivational support | Missing |
| sex |  |  |  |
| male | 11 (50%) | 10 (45%) | 0 (0%) |
| female | 11 (50%) | 12 (55%) | 0 (0%) |
| Missing | 0 (0%) | 0 (0%) | 0 (0%) |
| Total | 22 (100%) | 22 (100%) | 0 (100%) |

Note: Due to rounding error, percentages may not sum to 100%.

Summary Statistics: Scale

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variable | M | SD | n | SEM | Min | Max | Skewness | Kurtosis |
| anx1 |  |  |  |  |  |  |  |  |
| nicotine patch only | 43.045 | 4.815 | 22 | 1.027 | 33.000 | 50.000 | -0.544 | -0.321 |
| nicotine patch and motivational support | 41.273 | 4.723 | 22 | 1.007 | 34.000 | 50.000 | 0.206 | -0.843 |
| dep1 |  |  |  |  |  |  |  |  |
| nicotine patch only | 37.682 | 5.481 | 22 | 1.168 | 24.000 | 47.000 | -0.451 | 0.261 |
| nicotine patch and motivational support | 40.182 | 5.457 | 22 | 1.163 | 30.000 | 50.000 | -0.179 | -0.749 |
| smok1 |  |  |  |  |  |  |  |  |
| nicotine patch only | 19.818 | 6.005 | 22 | 1.280 | 11.000 | 29.000 | 0.085 | -1.271 |
| nicotine patch and motivational support | 19.409 | 4.827 | 22 | 1.029 | 12.000 | 29.000 | 0.128 | -0.751 |
| age |  |  |  |  |  |  |  |  |
| nicotine patch only | 26.545 | 7.975 | 22 | 1.700 | 19.000 | 46.000 | 1.445 | 0.986 |
| nicotine patch and motivational support | 27.273 | 8.988 | 22 | 1.916 | 19.000 | 45.000 | 1.193 | -0.110 |

Quantiles:

|  |  |  |
| --- | --- | --- |
| anx1 | nicotine patch only | nicotine patch and motivational support |
| 10% | 38.100 | 35.200 |
| 20% | 39.000 | 37.200 |
| 25% | 39.250 | 38.000 |
| 30% | 40.600 | 38.300 |
| 40% | 43.000 | 39.000 |
| 50% | 44.000 | 41.000 |
| 60% | 44.600 | 43.000 |
| 70% | 45.700 | 44.000 |
| 75% | 46.000 | 44.750 |
| 80% | 46.800 | 45.000 |
| 90% | 48.900 | 46.800 |
|  |  |  |
| dep1 | nicotine patch only | nicotine patch and motivational support |
| 10% | 32.000 | 32.100 |
| 20% | 33.000 | 35.400 |
| 25% | 33.750 | 37.250 |
| 30% | 36.300 | 38.300 |
| 40% | 37.400 | 39.400 |
| 50% | 38.500 | 40.000 |
| 60% | 39.000 | 42.000 |
| 70% | 40.400 | 42.700 |
| 75% | 41.000 | 43.750 |
| 80% | 41.000 | 45.600 |
| 90% | 43.800 | 46.000 |
|  |  |  |
| smok1 | nicotine patch only | nicotine patch and motivational support |
| 10% | 12.100 | 13.000 |
| 20% | 13.200 | 14.200 |
| 25% | 14.250 | 15.250 |
| 30% | 15.300 | 16.300 |
| 40% | 18.200 | 18.800 |
| 50% | 20.500 | 20.500 |
| 60% | 21.000 | 21.000 |
| 70% | 23.400 | 22.000 |
| 75% | 24.000 | 22.000 |
| 80% | 25.600 | 22.000 |
| 90% | 28.000 | 24.000 |
|  |  |  |
| age | nicotine patch only | nicotine patch and motivational support |
| 10% | 20.100 | 21.000 |
| 20% | 21.200 | 21.000 |
| 25% | 22.000 | 21.000 |
| 30% | 22.000 | 21.300 |
| 40% | 22.000 | 22.400 |
| 50% | 23.500 | 23.000 |
| 60% | 25.000 | 24.200 |
| 70% | 26.700 | 28.800 |
| 75% | 27.750 | 30.000 |
| 80% | 29.600 | 31.600 |
| 90% | 37.000 | 44.800 |

Results for Significance Testing against the levels of group using *t*-Tests and Chi-square Tests

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | n | Statistic | df | p |
| anx1 | 44 | 1.233a | 41.98 | .225 |
| dep1 | 44 | -1.516a | 42.00 | .137 |
| smok1 | 44 | 0.249a | 40.15 | .805 |
| sex | 44 | 0.091b | 1 | .763 |
| age | 44 | -0.284a | 41.41 | .778 |

Note. a = *t*-Test and b = Chi-square test.

**Paired t-Test for smok1 and smok2**

Included Variables:  
smok1 and smok2

Sample Size (Complete Cases):  
N = 44

Shapiro-Wilk Test:  
W = 0.976, p = 0.49

Levene's Test:  
dfn = 1, dfd = 86, F = 0.021, p = 0.89

Results:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| smok1 | | smok2 | |  |  |  |
| M | SD | M | SD | t | p | d |
| 19.614 | 5.388 | 14.250 | 5.168 | 6.526 | 3.141e-08 | 0.984 |

Note. n = 44, df = 43.

Confidence Interval Based on α = 0.05:  
Lower Limit = 3.982, Mean Difference = 5.364, Upper Limit = Inf

**Analysis of Variance Table for smok2 by dep1\_lev3**

Included Variables:  
smok2 and dep1\_lev3

Sample Size (Complete Cases):  
N = 44

ANOVA Results:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Term | SS | df | F | p | ηp2 |
| dep1\_lev3 | 257.365 | 2 | 5.922 | 0.0055 | 0.224 |
| Residuals | 890.885 | 41 |  |  |  |

Means Table:

|  |  |  |  |
| --- | --- | --- | --- |
| Combination | M | SD | n |
| 0-36 (low) | 17.417 | 3.988 | 12 |
| 37-40 (medium) | 14.867 | 4.998 | 15 |
| 41+ (high) | 11.471 | 4.784 | 17 |

*Note.* A '-' indicates the sample size was too small for the statistic to be calculated.

Post-hoc Comparisons with Tukey's Honest Significant Difference Test:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Comparison | M | Lwr Limit | Upr Limit | p |
| 37-40 (medium)-0-36 (low) | -2.55 | -6.94 | 1.84 | 0.344 |
| 41+ (high)-0-36 (low) | -5.95 | -10.22 | -1.67 | 0.0044 |
| 41+ (high)-37-40 (medium) | -3.40 | -7.41 | 0.62 | 0.1117 |

Note. M is calculated on the differences between the groups in each comparison.  
Upper and lower limits for the means are calculated using a 95% confidence interval.