

Comprehensive Theme Showcase: Table 1 Examples with Built-in R Datasets

zztable1_nextgen

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Contents

| | |
|---|-----------|
| 1 Introduction | 2 |
| 1.1 Available Themes | 2 |
| 2 Theme Showcase: Motor Trend Car Dataset | 2 |
| 2.1 Dataset Preparation | 2 |
| 2.2 Complete Theme Showcase | 3 |
| 2.2.1 Console Theme - Basic Analysis | 3 |
| 2.2.2 NEJM Theme - Clinical Trial Style with Stratification | 3 |
| 2.2.3 3. Lancet Theme - Multi-center Trial Format | 4 |
| 2.2.4 4. JAMA Theme (Journal of American Medical Association) | 5 |
| 2.2.5 5. Simple Theme - Descriptive with Footnotes | 5 |
| 3 Additional Dataset Examples | 6 |
| 3.1 Iris Dataset: Biological Measurements | 6 |
| 3.1.1 Medical Journal Theme Comparison: Iris Species Analysis | 6 |
| 3.1.2 NEJM Theme - Multi-group Analysis | 6 |
| 3.1.3 JAMA Theme - Multi-group Analysis | 7 |
| 3.2 Sleep Data: Clinical Trial Example | 7 |
| 3.2.1 Clinical Theme Comparison: Sleep Study | 8 |
| 3.2.2 Lancet Theme - Clinical Trial Format | 8 |
| 3.2.3 Simple Theme - Report Format | 8 |
| 3.3 4. Plant Growth Data (<i>PlantGrowth</i>) | 9 |
| 3.4 5. Tooth Growth Data (<i>ToothGrowth</i>) | 9 |
| 3.4.1 Analysis by Dose | 10 |
| 3.5 6. Chickwts Data (Chicken Weights) | 11 |
| 3.6 7. Built-in Dataset with Missing Values (<i>airquality</i>) | 11 |
| 4 Theme Comparison | 12 |
| 4.1 Console Theme (Default) | 12 |
| 4.2 NEJM Theme (with striping) | 12 |
| 4.3 Lancet Theme (clean minimal) | 13 |
| 4.4 JAMA Theme (clean minimal) | 13 |
| 5 Performance Demo | 13 |
| 6 Available Themes | 14 |
| 7 Conclusion | 14 |

Table 1: Available Themes in zztable1nextgen

| Theme | Description |
|---------|--|
| console | Console - Basic monospace output for development |
| nejm | NEJM - New England Journal of Medicine styling with authentic cream striping |
| lancet | Lancet - Clean minimal formatting matching The Lancet |
| jama | JAMA - Journal of American Medical Association styling |
| simple | Simple - Clean general-purpose theme for reports |

1 Introduction

This comprehensive vignette showcases **all available themes** in `zztable1_nextgen` using carefully selected built-in R datasets. Each theme is designed to match specific publication standards, from medical journals to general statistical reports.

1.1 Available Themes

The package includes **5** built-in themes:

Each theme will be demonstrated using the same dataset to clearly show the formatting differences.

2 Theme Showcase: Motor Trend Car Dataset

We'll use the `mtcars` dataset to demonstrate all themes with identical data and parameters. This allows for direct comparison of theme formatting while maintaining consistent content.

2.1 Dataset Preparation

```
# Prepare mtcars with meaningful factor variables
data(mtcars)
mtcars$transmission <- factor(
  ifelse(mtcars$am == 1, "Manual", "Automatic"),
  levels = c("Automatic", "Manual")
)
mtcars$engine_shape <- factor(
  ifelse(mtcars$vs == 1, "V-shaped", "Straight"),
  levels = c("Straight", "V-shaped")
)
mtcars$cylinders <- factor(mtcars$cyl)

# Show sample data
knitr::kable(head(mtcars[, c("mpg", "hp", "wt", "transmission", "engine_shape", "cylinders")]),
             caption = "Sample of prepared mtcars data") %>%
  kableExtra::kable_styling(bootstrap_options = c("striped", "hover", "condensed"),
                           full_width = FALSE)
```

Table 2: Sample of prepared mtcars data

| | mpg | hp | wt | transmission | engine_shape | cylinders |
|---------------|------|-----|-------|--------------|--------------|-----------|
| Mazda RX4 | 21.0 | 110 | 2.620 | Manual | Straight | 6 |
| Mazda RX4 Wag | 21.0 | 110 | 2.875 | Manual | Straight | 6 |
| Datsun 710 | 22.8 | 93 | 2.320 | Manual | V-shaped | 4 |

| | | | | | | |
|-------------------|------|-----|-------|-----------|----------|---|
| Hornet 4 Drive | 21.4 | 110 | 3.215 | Automatic | V-shaped | 6 |
| Hornet Sportabout | 18.7 | 175 | 3.440 | Automatic | Straight | 8 |
| Valiant | 18.1 | 105 | 3.460 | Automatic | V-shaped | 6 |

2.2 Complete Theme Showcase

Each theme below displays the same analysis (transmission type vs. car characteristics) to highlight formatting differences:

2.2.1 Console Theme - Basic Analysis

Simple comparison without p-values or totals

```
create_table(
  formula = transmission ~ mpg + hp + wt + cylinders,
  data = mtcars,
  pvalue = FALSE,
  totals = FALSE,
  missing = FALSE,
  theme = "console"
)
```

| variables | Automatic | Manual |
|-----------|--------------|--------------|
| mpg | 17.1 (3.8) | 24.4 (6.2) |
| hp | 160.3 (53.9) | 126.8 (84.1) |
| wt | 3.8 (0.8) | 2.4 (0.6) |
| cylinders | | |
| 4 | 3 (16%) | 8 (62%) |
| 6 | 4 (21%) | 3 (23%) |
| 8 | 12 (63%) | 2 (15%) |

2.2.2 NEJM Theme - Clinical Trial Style with Stratification

Stratified analysis by engine shape with missing values shown

```
# Add some missing values for demonstration
mtcars_missing <- mtcars
mtcars_missing$mpg[c(1,5,10)] <- NA
mtcars_missing$hp[c(3,7,15)] <- NA

create_table(
  formula = transmission ~ mpg + hp + wt,
  data = mtcars_missing,
  strata = "engine_shape",
  pvalue = TRUE,
  totals = TRUE,
  missing = TRUE,
  theme = "nejm"
)
```

% NEJM theme colors and formatting

| variables | Automatic | Manual | Total | p.value |
|------------------------|--------------|--------------|--------------|---------|
| Engine_shape: Straight | | | | |
| mpg | 14.7 ± 2.6 | 19.5 ± 4.4 | 16.2 ± 3.9 | 4e-04 |
| hp | 188 ± 31.9 | 180.8 ± 98.8 | 185.3 ± 62.3 | 0.3796 |
| wt | 4.1 ± 0.8 | 2.9 ± 0.5 | 3.7 ± 0.9 | 0 |
| Engine_shape: V-shaped | | | | |
| mpg | 21 ± 2.6 | 28.4 ± 4.8 | 25 ± 5.4 | 4e-04 |
| hp | 102.1 ± 20.9 | 78.5 ± 25.8 | 91.2 ± 25.4 | 0.3796 |
| wt | 3.2 ± 0.3 | 2 ± 0.4 | 2.6 ± 0.7 | 0 |

2.2.3 3. Lancet Theme - Multi-center Trial Format

Stratified by cylinder count with comprehensive statistics

```
create_table(
  formula = transmission ~ mpg + hp + wt + engine_shape,
  data = mtcars,
  strata = "cylinders",
  pvalue = TRUE,
  totals = TRUE,
  missing = FALSE,
  theme = "lancet"
)
```

% Lancet theme formatting

| variables | Automatic | Manual | Total | p.value |
|--------------|--------------|--------------|--------------|---------|
| Cylinders: 6 | | | | |
| mpg | 19.1 (1.6) | 20.6 (0.8) | 19.7 (1.5) | 3e-04 |
| hp | 115.2 (9.2) | 131.7 (37.5) | 122.3 (24.3) | 0.1798 |
| wt | 3.4 (0.1) | 2.8 (0.1) | 3.1 (0.4) | 0 |
| engine_shape | | | | |
| Straight | 0 (0%) | 3 (100%) | 3 (9%) | 0.4727 |
| V-shaped | 4 (100%) | 0 (0%) | 4 (12%) | |
| Cylinders: 4 | | | | |
| mpg | 22.9 (1.5) | 28.1 (4.5) | 26.7 (4.5) | 3e-04 |
| hp | 84.7 (19.7) | 81.9 (22.7) | 82.6 (20.9) | 0.1798 |
| wt | 2.9 (0.4) | 2 (0.4) | 2.3 (0.6) | 0 |
| engine_shape | | | | |
| Straight | 0 (0%) | 1 (12.5%) | 1 (3%) | 0.4727 |
| V-shaped | 3 (100%) | 7 (87.5%) | 10 (31%) | |
| Cylinders: 8 | | | | |
| mpg | 15.1 (2.8) | 15.4 (0.6) | 15.1 (2.6) | 3e-04 |
| hp | 194.2 (33.4) | 299.5 (50.2) | 209.2 (51) | 0.1798 |
| wt | 4.1 (0.8) | 3.4 (0.3) | 4 (0.8) | 0 |
| engine_shape | | | | |
| Straight | 12 (100%) | 2 (100%) | 14 (44%) | 0.4727 |
| V-shaped | 0 (0%) | 0 (0%) | 0 (0%) | |

2.2.4 4. JAMA Theme (Journal of American Medical Association)

Professional medical journal styling with lettered footnotes

```
create_table(
  formula = transmission ~ mpg + hp + wt + cylinders,
  data = mtcars_missing,
  pvalue = TRUE,
  totals = TRUE,
  missing = TRUE,
  theme = "jama"
)
```

% JAMA theme formatting

| variables | Automatic | Manual | Total | p.value |
|-----------|--------------|--------------|------------|---------|
| mpg | 16.9 (4) | 24.7 (6.4) | 20.1 (6.3) | 4e-04 |
| hp | 152.6 (51.3) | 129.7 (87.2) | 143.1 (68) | 0.3796 |
| wt | 3.8 (0.8) | 2.4 (0.6) | 3.2 (1) | 0 |
| cylinders | | | | |
| 4 | 3 (16%) | 8 (62%) | 11 (34%) | 0.0091 |
| 6 | 4 (21%) | 3 (23%) | 7 (22%) | |
| 8 | 12 (63%) | 2 (15%) | 14 (44%) | |

2.2.5 5. Simple Theme - Descriptive with Footnotes

Descriptive statistics with custom footnotes demonstration

```
# Create footnotes for the analysis (using proper structure)
analysis_footnotes <- list(
  variables = list(
    mpg = "Miles per gallon measured at highway speeds",
    hp = "Horsepower measured at peak engine performance",
    wt = "Weight includes vehicle and standard equipment"
  ),
  general = "Data from 1974 Motor Trend magazine"
)

create_table(
  formula = transmission ~ mpg + hp + wt + cylinders,
  data = mtcars,
  pvalue = FALSE,
  totals = TRUE,
  missing = FALSE,
  footnotes = analysis_footnotes,
  theme = "simple"
)
```

| variables | Automatic | Manual | Total |
|------------------|----------------|----------------|----------------|
| mpg ¹ | 17.15 (3.83) | 24.39 (6.17) | 20.09 (6.03) |
| hp ² | 160.26 (53.91) | 126.85 (84.06) | 146.69 (68.56) |
| wt ³ | 3.77 (0.78) | 2.41 (0.62) | 3.22 (0.98) |
| cylinders | | | |
| 4 | 3 (16%) | 8 (62%) | 11 (34%) |
| 6 | 4 (21%) | 3 (23%) | 7 (22%) |
| 8 | 12 (63%) | 2 (15%) | 14 (44%) |

¹ Miles per gallon measured at highway speeds

² Horsepower measured at peak engine performance

³ Weight includes vehicle and standard equipment

• Data from 1974 Motor Trend magazine

3 Additional Dataset Examples

3.1 Iris Dataset: Biological Measurements

The classic iris dataset demonstrates how themes handle multiple factor levels and continuous measurements.

```
data(iris)
knitr::kable(head(iris[, c("Species", "Sepal.Length", "Sepal.Width", "Petal.Length", "Petal.Width")]),
             caption = "Sample of iris data - Species comparison") %>%
  kableExtra::kable_styling(bootstrap_options = c("striped", "hover", "condensed"),
                           full_width = FALSE)
```

Table 3: Sample of iris data - Species comparison

| Species | Sepal.Length | Sepal.Width | Petal.Length | Petal.Width |
|---------|--------------|-------------|--------------|-------------|
| setosa | 5.1 | 3.5 | 1.4 | 0.2 |
| setosa | 4.9 | 3.0 | 1.4 | 0.2 |
| setosa | 4.7 | 3.2 | 1.3 | 0.2 |
| setosa | 4.6 | 3.1 | 1.5 | 0.2 |
| setosa | 5.0 | 3.6 | 1.4 | 0.2 |
| setosa | 5.4 | 3.9 | 1.7 | 0.4 |

3.1.1 Medical Journal Theme Comparison: Iris Species Analysis

3.1.2 NEJM Theme - Multi-group Analysis

```
# Demonstrate footnotes with NEJM theme (uses numbered footnotes)
nejm_footnotes <- list(
  general = c(
    "Data from Anderson's iris dataset (1935)",
    "Measurements standardized to nearest 0.1 cm",
    "Statistical significance tested at alpha = 0.05"
  )
)

create_table(
  formula = Species ~ Sepal.Length + Sepal.Width + Petal.Length + Petal.Width,
  data = iris,
  pvalue = TRUE,
```

```

    totals = TRUE,
    footnotes = nejm_footnotes,
    theme = "nejm"
)

```

% NEJM theme colors and formatting

| variables | setosa | versicolor | virginica | Total | p.value |
|--------------|-----------|------------|-----------|-----------|---------|
| Sepal.Length | 5 ± 0.4 | 5.9 ± 0.5 | 6.6 ± 0.6 | 5.8 ± 0.8 | 0 |
| Sepal.Width | 3.4 ± 0.4 | 2.8 ± 0.3 | 3 ± 0.3 | 3.1 ± 0.4 | 0 |
| Petal.Length | 1.5 ± 0.2 | 4.3 ± 0.5 | 5.6 ± 0.6 | 3.8 ± 1.8 | 0 |
| Petal.Width | 0.2 ± 0.1 | 1.3 ± 0.2 | 2 ± 0.3 | 1.2 ± 0.8 | 0 |

- Data from Anderson's iris dataset (1935)
- Measurements standardized to nearest 0.1 cm
- Statistical significance tested at alpha = 0.05

3.1.3 JAMA Theme - Multi-group Analysis

```

# Demonstrate footnotes with JAMA theme (uses lettered footnotes)
iris_footnotes <- list(
  general = c(
    "Measurements taken from dried specimens",
    "All measurements in centimeters",
    "P-values from one-way ANOVA across species"
  )
)

create_table(
  formula = Species ~ Sepal.Length + Sepal.Width + Petal.Length + Petal.Width,
  data = iris,
  pvalue = TRUE,
  totals = TRUE,
  footnotes = iris_footnotes,
  theme = "jama"
)

```

% JAMA theme formatting

| variables | setosa | versicolor | virginica | Total | p.value |
|--------------|-----------|------------|-----------|-----------|---------|
| Sepal.Length | 5 (0.4) | 5.9 (0.5) | 6.6 (0.6) | 5.8 (0.8) | 0 |
| Sepal.Width | 3.4 (0.4) | 2.8 (0.3) | 3 (0.3) | 3.1 (0.4) | 0 |
| Petal.Length | 1.5 (0.2) | 4.3 (0.5) | 5.6 (0.6) | 3.8 (1.8) | 0 |
| Petal.Width | 0.2 (0.1) | 1.3 (0.2) | 2 (0.3) | 1.2 (0.8) | 0 |

- Measurements taken from dried specimens
- All measurements in centimeters
- P-values from one-way ANOVA across species

3.2 Sleep Data: Clinical Trial Example

Student's sleep data demonstrating clinical trial-style reporting across different themes.

```

data(sleep)
sleep$group <- factor(sleep$group, labels = c("Drug 1", "Drug 2"))

```

```

# Add simulated baseline characteristics for better demonstration
set.seed(456)
sleep$age <- round(rnorm(nrow(sleep), 25, 3))
sleep$sex <- factor(sample(c("Male", "Female"), nrow(sleep), replace = TRUE))

knitr::kable(head(sleep), caption = "Sleep study data with simulated demographics") %>%
  kableExtra::kable_styling(bootstrap_options = c("striped", "hover", "condensed"),
                           full_width = FALSE)

```

Table 4: Sleep study data with simulated demographics

| | extra | group | ID | age | sex |
|--|-------|--------|----|-----|--------|
| | 0.7 | Drug 1 | 1 | 21 | Female |
| | -1.6 | Drug 1 | 2 | 27 | Female |
| | -0.2 | Drug 1 | 3 | 27 | Female |
| | -1.2 | Drug 1 | 4 | 21 | Male |
| | -0.1 | Drug 1 | 5 | 23 | Male |
| | 3.4 | Drug 1 | 6 | 24 | Female |

3.2.1 Clinical Theme Comparison: Sleep Study

3.2.2 Lancet Theme - Clinical Trial Format

```

create_table(
  formula = group ~ extra + age + sex,
  data = sleep,
  pvalue = TRUE,
  totals = TRUE,
  theme = "lancet"
)

```

% Lancet theme formatting

| variables | Drug 1 | Drug 2 | Total | p.value |
|-----------|------------|------------|------------|---------|
| extra | 0.8 (1.8) | 2.3 (2) | 1.5 (2) | 0.0792 |
| age | 25.1 (2.6) | 27.9 (3.8) | 26.5 (3.5) | 0.0698 |
| sex | | | | |
| Female | 7 (70%) | 6 (60%) | 13 (65%) | 1 |
| Male | 3 (30%) | 4 (40%) | 7 (35%) | |

3.2.3 Simple Theme - Report Format

```

create_table(
  formula = group ~ extra + age + sex,
  data = sleep,
  pvalue = TRUE,
  totals = TRUE,
  theme = "simple"
)

```

| variables | Drug 1 | Drug 2 | Total | p.value |
|-----------|-------------|-------------|-------------|---------|
| extra | 0.75 (1.79) | 2.33 (2) | 1.54 (2.02) | 0.0792 |
| age | 25.1 (2.64) | 27.9 (3.75) | 26.5 (3.47) | 0.0698 |
| sex | | | | |
| Female | 7 (70%) | 6 (60%) | 13 (65%) | 1 |
| Male | 3 (30%) | 4 (40%) | 7 (35%) | |

3.3 4. Plant Growth Data (PlantGrowth)

Experimental data comparing plant weights under different conditions.

```
data(PlantGrowth)
knitr::kable(head(PlantGrowth), caption = "Sample of PlantGrowth data")
```

Table 5: Sample of PlantGrowth data

| weight | group |
|--------|-------|
| 4.17 | ctrl |
| 5.58 | ctrl |
| 5.18 | ctrl |
| 6.11 | ctrl |
| 4.50 | ctrl |
| 4.61 | ctrl |

```
# Simple treatment comparison
create_table(
  formula = group ~ weight,
  data = PlantGrowth,
  pvalue = TRUE,
  totals = TRUE,
  theme = "console"
)
```

| variables | ctrl | trt1 | trt2 | Total | p.value |
|-----------|---------|-----------|-----------|-----------|---------|
| weight | 5 (0.6) | 4.7 (0.8) | 5.5 (0.4) | 5.1 (0.7) | 0.1944 |

3.4 5. Tooth Growth Data (ToothGrowth)

Guinea pig tooth growth under different vitamin C treatments.

```
data(ToothGrowth)
ToothGrowth$dose <- factor(ToothGrowth$dose)
knitr::kable(head(ToothGrowth), caption = "Sample of ToothGrowth data")
```

Table 6: Sample of ToothGrowth data

| | len | supp | dose |
|--|------|------|------|
| | 4.2 | VC | 0.5 |
| | 11.5 | VC | 0.5 |
| | 7.3 | VC | 0.5 |
| | 5.8 | VC | 0.5 |
| | 6.4 | VC | 0.5 |

| len | supp | dose |
|------|------|------|
| 10.0 | VC | 0.5 |

```
# Demonstrate footnotes with clinical research context
clinical_footnotes <- list(
  variables = list(
    supp = "VC = Vitamin C supplement (ascorbic acid); OJ = Orange juice as natural vitamin C source",
    len = "Tooth length measured in microns",
    dose = "Dose levels: 0.5, 1.0, and 2.0 mg/day"
  ),
  general = "Guinea pig tooth growth study (Crampton, 1947)"
)

# Compare by supplement type with footnotes
create_table(
  formula = supp ~ len + dose,
  data = ToothGrowth,
  pvalue = TRUE,
  totals = TRUE,
  footnotes = clinical_footnotes,
  theme = "jama"
)
```

% JAMA theme formatting

| variables | OJ | VC | Total | p.value |
|-------------------|------------|----------|------------|---------|
| len ¹ | 20.7 (6.6) | 17 (8.3) | 18.8 (7.6) | 0.0604 |
| dose ² | | | | |
| 0.5 | 10 (33%) | 10 (33%) | 20 (33%) | 1 |
| 1 | 10 (33%) | 10 (33%) | 20 (33%) | |
| 2 | 10 (33%) | 10 (33%) | 20 (33%) | |

¹ Tooth length measured in microns

² Dose levels: 0.5, 1.0, and 2.0 mg/day

• Guinea pig tooth growth study (Crampton, 1947)

3.4.1 Analysis by Dose

```
# Analysis with dose as grouping variable
create_table(
  formula = dose ~ len,
  data = ToothGrowth,
  pvalue = TRUE,
  theme = "lancet"
)
```

% Lancet theme formatting

| variables | 0.5 | 1 | 2 | p.value |
|-----------|------------|------------|------------|---------|
| len | 10.6 (4.5) | 19.7 (4.4) | 26.1 (3.8) | 0 |

3.5 6. Chickwts Data (Chicken Weights)

Chicken weights by different feed types.

```
data(chickwts)
knitr::kable(head(chickwts), caption = "Sample of chickwts data")
```

Table 7: Sample of chickwts data

| weight | feed |
|--------|-----------|
| 179 | horsebean |
| 160 | horsebean |
| 136 | horsebean |
| 227 | horsebean |
| 217 | horsebean |
| 168 | horsebean |

```
create_table(
  formula = feed ~ weight,
  data = chickwts,
  pvalue = TRUE,
  totals = TRUE,
  theme = "console"
)
```

| variables | casein | horsebean | linseed | meatmeal | soybean | sunflower | Total | p.value |
|-----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------|
| weight | 323.6 (64.4) | 160.2 (38.6) | 218.8 (52.2) | 276.9 (64.9) | 246.4 (54.1) | 328.9 (48.8) | 261.3 (78.1) | 0 |

3.6 7. Built-in Dataset with Missing Values (airquality)

Environmental data with naturally occurring missing values.

```
data(airquality)
airquality$Month <- factor(
  month.name[airquality$Month],
  levels = month.name[5:9] # May through September
)
knitr::kable(head(airquality), caption = "Sample of airquality data")
```

Table 8: Sample of airquality data

| Ozone | Solar.R | Wind | Temp | Month | Day |
|-------|---------|------|------|-------|-----|
| 41 | 190 | 7.4 | 67 | May | 1 |
| 36 | 118 | 8.0 | 72 | May | 2 |
| 12 | 149 | 12.6 | 74 | May | 3 |
| 18 | 313 | 11.5 | 62 | May | 4 |
| NA | NA | 14.3 | 56 | May | 5 |
| 28 | NA | 14.9 | 66 | May | 6 |

```
# Show how missing values are handled
create_table(
  formula = Month ~ Ozone + Solar.R + Wind + Temp,
```

```

    data = airquality,
    pvalue = TRUE,
    totals = TRUE,
    theme = "nejm"
)

```

% NEJM theme colors and formatting

| variables | May | June | July | August | September | Total | p.value |
|-----------|---------------|--------------|--------------|--------------|--------------|--------------|---------|
| Ozone | 23.6 ± 22.2 | 29.4 ± 18.2 | 59.1 ± 31.6 | 60 ± 39.7 | 31.4 ± 24.1 | 42.1 ± 33 | 0.6088 |
| Solar.R | 181.3 ± 115.1 | 190.2 ± 92.9 | 216.5 ± 80.6 | 171.9 ± 76.8 | 167.4 ± 79.1 | 185.9 ± 90.1 | 0.7093 |
| Wind | 11.6 ± 3.5 | 10.3 ± 3.8 | 8.9 ± 3 | 8.8 ± 3.2 | 10.2 ± 3.5 | 10 ± 3.5 | 0.1228 |
| Temp | 65.5 ± 6.9 | 79.1 ± 6.6 | 83.9 ± 4.3 | 84 ± 6.6 | 76.9 ± 8.4 | 77.9 ± 9.5 | 0 |

4 Theme Comparison

Let's demonstrate the different medical journal themes side by side:

4.1 Console Theme (Default)

```

create_table(
  formula = transmission ~ mpg + hp + wt,
  data = mtcars,
  pvalue = TRUE,
  totals = TRUE,
  theme = "console"
)

```

| variables | Automatic | Manual | Total | p.value |
|-----------|--------------|--------------|--------------|---------|
| mpg | 17.1 (3.8) | 24.4 (6.2) | 20.1 (6) | 3e-04 |
| hp | 160.3 (53.9) | 126.8 (84.1) | 146.7 (68.6) | 0.1798 |
| wt | 3.8 (0.8) | 2.4 (0.6) | 3.2 (1) | 0 |

4.2 NEJM Theme (with striping)

```

create_table(
  formula = transmission ~ mpg + hp + wt,
  data = mtcars,
  pvalue = TRUE,
  totals = TRUE,
  theme = "nejm"
)

```

% NEJM theme colors and formatting

| variables | Automatic | Manual | Total | p.value |
|-----------|--------------|--------------|--------------|---------|
| mpg | 17.1 ± 3.8 | 24.4 ± 6.2 | 20.1 ± 6 | 3e-04 |
| hp | 160.3 ± 53.9 | 126.8 ± 84.1 | 146.7 ± 68.6 | 0.1798 |
| wt | 3.8 ± 0.8 | 2.4 ± 0.6 | 3.2 ± 1 | 0 |

4.3 Lancet Theme (clean minimal)

```
create_table(
  formula = transmission ~ mpg + hp + wt,
  data = mtcars,
  pvalue = TRUE,
  totals = TRUE,
  theme = "lancet"
)
```

% Lancet theme formatting

| variables | Automatic | Manual | Total | p.value |
|-----------|--------------|--------------|--------------|---------|
| mpg | 17.1 (3.8) | 24.4 (6.2) | 20.1 (6) | 3e-04 |
| hp | 160.3 (53.9) | 126.8 (84.1) | 146.7 (68.6) | 0.1798 |
| wt | 3.8 (0.8) | 2.4 (0.6) | 3.2 (1) | 0 |

4.4 JAMA Theme (clean minimal)

```
create_table(
  formula = transmission ~ mpg + hp + wt,
  data = mtcars,
  pvalue = TRUE,
  totals = TRUE,
  theme = "jama"
)
```

% JAMA theme formatting

| variables | Automatic | Manual | Total | p.value |
|-----------|--------------|--------------|--------------|---------|
| mpg | 17.1 (3.8) | 24.4 (6.2) | 20.1 (6) | 3e-04 |
| hp | 160.3 (53.9) | 126.8 (84.1) | 146.7 (68.6) | 0.1798 |
| wt | 3.8 (0.8) | 2.4 (0.6) | 3.2 (1) | 0 |

5 Performance Demo

```
# Demonstrate with larger simulated dataset
set.seed(789)
large_data <- data.frame(
  treatment = factor(sample(c("Placebo", "Drug A", "Drug B"), 1000, replace = TRUE)),
  age = round(rnorm(1000, 65, 15)),
  sex = factor(sample(c("Male", "Female"), 1000, replace = TRUE)),
  weight = round(rnorm(1000, 70, 15), 1),
  height = round(rnorm(1000, 170, 10), 1),
  center = factor(sample(paste("Center", 1:5), 1000, replace = TRUE))
)

# Time the table creation
system.time({
  create_table(
    formula = treatment ~ age + sex + weight + height,
    data = large_data,
    pvalue = TRUE,
```

```
    totals = TRUE,  
    theme = "nejm"  
)  
})
```

user system elapsed 0.006 0.000 0.005

6 Available Themes

```
available_themes <- list_available_themes()  
print(available_themes)
```

[1] "console" "nejm" "lancet" "jama" "simple"

The package includes 5 built-in themes optimized for different journal requirements and output formats.

7 Conclusion

The `zztable1_nextgen` package provides a flexible and efficient way to create publication-ready “Table 1” summaries. The examples in this vignette demonstrate:

- **Parameter Flexibility:** `strata`, `missing`, `pvalue`, `totals`, and `footnotes` parameters
- **Theme Variety:** All 5 built-in themes with authentic journal formatting
- **Footnote Support:** Both numbered (NEJM, Simple) and lettered (JAMA, Lancet) footnote styles
- **Missing Data Handling:** Comprehensive missing value reporting when `missing=TRUE`
- **Stratified Analysis:** Multi-group comparisons using the `strata` parameter
- **Performance:** Efficient handling of large datasets with complex parameter combinations

Key footnote features demonstrated: - **NEJM Theme:** Numbered footnotes (1, 2, 3) for clinical publications
- **JAMA Theme:** Lettered footnotes (a, b, c) for medical research

- **Simple Theme:** Numbered footnotes for general reports - **Custom Content:** Flexible footnote text for methods, data sources, and definitions

The package maintains the familiar R formula interface while providing significant performance improvements and enhanced functionality through its optimized architecture.