Package 'rankinPlot'

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Type Package

Title Convenient Plotting for the Modified Rankin Scale and Other Ordinal Outcome Data

Version 1.0.1

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Description Provides convenient tools for visualising ordinal outcome data following the ``Grotta Bar'' approach pioneered by The National Institute of Neurological Disorders and Stroke rt-PA Stroke Study Group (1995) <doi:10.1056/NEJM199512143332401>.

License GPL (>= 2.0)

Encoding UTF-8

LazyData true

Depends R (>= 2.10)

Imports ggplot2 (>= 3.3), scales (>= 1.2)

RoxygenNote 7.2.0

NeedsCompilation no

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R topics documented:

alteplase *Effect of time to treatment on efficacy of rt-PA in treating acute stroke*

Description

A dataset reconstructing reported outcomes after stroke as reported in Lees et. al. (2010) which pooled the results of several studies.

Usage

```
alteplase
```

Format

A data frame with 3669 rows and 3 variables:

time Time interval (minutes) between stroke onset and treatment

treat Type of treatment received

mRS Outcome at 3 months measured using the modified Rankin Scale

References

Lees, K. R., Bluhmki, E., Von Kummer, R., Brott, T. G., Toni, D., Grotta, J. C., Albers, G. W., Kaste, M., Marler, J. R., Hamilton, S. A., Tilley, B. C., Davis, S. M., Donnan, G. A., Hacke, W. (2010). Time to treatment with intravenous alteplase and outcome in stroke: an updated pooled analysis of ECASS, ATLANTIS, NINDS, and EPITHET trials. *The Lancet*, 375(9727), 1695-1703.

grottaBar *grottaBar*

Description

Automates the production of a Grotta Bar using `ggplot()`

Usage

```
grottaBar(x,groupName,scoreName,strataName = NULL,
          colourScheme="lowGreen",
          printNumbers = "count",
          nCol = 1, dir = "v",
          width=0.9,
          textSize=15, numberSize=5,
          lineSize=0.5,
          returnData = FALSE
)
```

Arguments

x	a 2- or 3- dimensional table, returned by the table() function
groupName	a character string giving the name of the group varialble
scoreName	a character string giving outcome (mRS) labels
strataName	a character string giving the strata variable name
colourScheme	a character string indicating the colours that should be used by the plot
printNumbers	a character string indicating if numbers should be printed for each category.
nCol	an integer indicating the number of columns to use for displaying stratified results. Has no effect if no stratification is used.
dir	a character indicating if stratified results should be laid out vertically ("v") or horizontally "h".
width	a number adjusting the width of the lines between bars
textSize	a number indicating the size of text labels
numberSize	a number indicating the size of printed numbers
lineSize	a number indicating the thickness of lines in the plot
returnData	a boolean indicating if the data used to create the plot should be returned. For expert users only.

Details

This tool produces a "Grotta" bar chart based on a table of count data. A Grotta bar chart is a common data visualisation tool in stroke research, and is in essence a horizontally stacked proportional bar chart showing the distribution of ordinal outcome data (typically the modified Rankin Scale) across groups, with lines drawn connecting categories across groups.

The tool provides three default options for colourScheme:

- "lowGreen" A "traffic light" gradient from green to red, where low scores are coloured green
- "lowRed" A "traffic light" gradient from red to green, where low scores are coloured red
- "grayscale" A grayscale gradient for producing a black and white plot

In addition to these, setting colourScheme="custom" allows for a user-specified colour scheme by using the ggplot2 family of scale_fill_ functions.

There are four options for printNumbers:

- "count" The raw counts in the table.
- "proportion" The within-group proportion, rounded to 2 decimal places.
- "percentage" The within-group percentage, rounded to 2 decimal places.
- "none" Do not print any numbers.

Value

A ggplot object, or a list containing a ggplot object and the data used to generate it.

Examples

```
df <- alteplase
df$mRS <- df$mRS -1
x <- table(mRS=df$mRS,
           Group=df$treat,
           Time=df$time)

grottaBar(x,groupName="Group",
          scoreName = "mRS",
          strataName="Time",
          colourScheme ="lowGreen"
 )

  grottaBar(x,groupName="Time",
          scoreName = "mRS",
          strataName="Group",
          colourScheme ="grayscale"
 )

x <- table(mRS=df$mRS,
          Group=df$treat)
   grottaBar(x,groupName="Group",
             scoreName = "mRS",
             colourScheme ="custom"
   ) + ggplot2::scale_fill_brewer(palette = "Spectral", direction=-1)
```

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