Package 'ggcorset'

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Type Package

Title The Corset Plot

Version 0.5.0

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Description Corset plots are a visualization technique used strictly to visualize repeat measures at 2 time points (such as pre- and post- data). The distribution of measurements are visualized at each time point, whilst the trajectories of individual change are visualized by connecting the pre- and post- values linearly. These lines can be coloured to represent the magnitude of change, or other user-defined value. This method of visualization is ideal for showing the heterogeneity of data, including differences by sub-groups. The package relies on 'ggplot2' allowing for easy integration so that users can customize their visualizations as required. Users can create corset plots using data in either wide or long format using the functions gg_corset() or gg_corset_elongated(), respectively.

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URL https://cran.r-project.org/package=ggcorset, https://github.com/kbelisar/ggcorset

BugReports https://github.com/kbelisar/ggcorset/issues

Depends R (>= 3.5.0)

Imports ggplot2, gghalves

Encoding UTF-8

LazyData true

RoxygenNote 7.2.3

Suggests rmarkdown, knitr, viridis, MetBrewer

VignetteBuilder knitr

NeedsCompilation no

Repository CRAN

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R topics documented:

`drinkdays` *DRINKDAYS*

Description

An example data set from simulated data.

Usage

```
data(drinkdays)
```

Format

An object of class `data.frame` with 300 rows and 3 columns.

Examples

```
## Not run:
data(drinkdays)

## End(Not run)
```

`gg_corset` *CORSET PLOT*

Description

This function visualizes a corset plot in wide format.

Arguments

`data`	The name of the data frame.
`y_var1`	The name of measured variable at time 1.
`y_var2`	The name of measured variable at time 2.
`group`	The name of units measured at each time point such as 'ID'. The trajectories of these units are visualized by the lines of the corset plot.

c_var	The name of variable to visualize by line colour, such as percent change, magnitude of change, or direction of change.
eyelets	Optional (default is FALSE). If set to true, this will visualize one of two mean types by c_var, as defined by the 'e_type' argument.
e_type	Optional eyelet type if the eyelets parameter is set to TRUE. One of "SE" or "SD". The default is standard error ("SE") means. Alternatively, standard deviations ("SD") with means can be specified, which include horizontal lines to denote +1 and -1 standard deviation. Note that the visualization of standard deviations works best in tandem with the faceted option.
faceted	Optional (default is FALSE). If set to true, the c_var will be faceted.
facet_design	Optional facet type when the faceted parameter is set to TRUE. One of "original","group", or "line". The default is "original", which provides facets void of any special features. The "group" option includes the overall distribution of the entire sample in the background of each facet (which defaults to the 'vio_fill' colour), alongside each distribution for each c_var group. The "line" option includes all individual trajectories in the background of each facet using a soft grey (default) or custom colour as chosen by 'line_col' argument.
vio_fill	Optional (defaults to a soft black). Use to change the fill colour of the half violins.
line_size	Optional. Use to change the size (thickness) of the lines which visualize change for each unit identified by the group variable. Default is 0.25.
line_col	Optional custom colour of the background individual lines when the facet_design is set to "line". Defaults to a soft grey.
line_dodge	Optional. Use to change the amount of vertical dodge of the lines which visualize each unit of the group variable. Default is 0.1.

Value

ggplot2 graphical object

Examples

```
wide.df <- data.frame(id = c(1:20),
             time1 = c(3,4,7,5,6,3,4,1,7,0,5,2,0,1,6,2,1,7,4,6),
             time2  = c(5,5,7,3,0,3,3,2,7,0,3,4,3,3,7,0,0,6,5,6))

wide.df$change <- wide.df$time2-wide.df$time1
wide.df$direction <- ifelse(wide.df$change==0,"No Change",
                            ifelse(wide.df$change>0,"Increase","Decrease"))

gg_corset(data = wide.df, y_var1 = "time1", y_var2 = "time2",
          group = "id", c_var = "change")

## Create corset plots with eyelets:

gg_corset(data = wide.df, y_var1 = "time1", y_var2 = "time2",
          group = "id", c_var = "direction", eyelets = TRUE)
```

```
## Create faceted corset plots based on direction of change:

gg_corset(data = wide.df, y_var1 = "time1", y_var2 = "time2",
          group = "id", c_var = "direction", faceted = TRUE)

## Create faceted corset plots with standard deviation eyelets:

gg_corset(data = wide.df, y_var1 = "time1", y_var2 = "time2", group = "id",
          c_var = "direction", e_type = "SD", faceted = TRUE)
```

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gg_corset_elongated *CORSET PLOT ELONGATED*

Description

This function visualizes a corset plot in long format.

Arguments

data	The name of the data frame.
x_var	The name of the x_axis variable.
x_vals	The values of the two time points.
y_var	The repeated measure variable name.
group	The name of units measured at each time point such as 'ID'. The trajectories of these units are visualized by the lines of the corset plot.
c_var	The name of variable to visualize by line colour, such as percent change.
eyelets	Optional (default is FALSE). If set to true, this will visualize one of two mean types by c_var, as defined by the 'e_type' argument.
e_type	Optional eyelet type if the eyelets parameter is set to TRUE. One of "SE" or "SD". The default is standard error ("SE") means. Alternatively, standard deviations ("SD") with means can be specified, which include horizontal lines to denote +1 and -1 standard deviation. Note that the visualization of standard deviations works best in tandem with the faceted option.
faceted	Optional (default is FALSE). If set to true, the c_var will be faceted.
facet_design	Optional facet type when the faceted parameter is set to TRUE. One of "original","group", or "line". The default is "original", which provides facets void of any special features. The "group" option includes the overall distribution of the entire sample in the background of each facet (which defaults to the 'vio_fill' colour), alongside each distribution for each c_var group. The "line" option includes all individual trajectories in the background of each facet using a soft grey (default) or custom colour as chosen by 'line_col' argument.
vio_fill	Optional (defaults to a soft black). Use to change the fill colour of the half violins.

line_size	Optional. Use to change the size (thickness) of the lines which visualize change for each unit identified by the group variable. Default is 0.25.
line_col	Optional custom colour of the background individual lines when the facet_design is set to "line". Defaults to a soft grey.
line_dodge	Optional. Use to change the amount of vertical dodge of the lines which visualize each unit of the group variable. Default is 0.1.

Value

ggplot2 graphical object

Examples

```
long.df <- data.frame(id = c(rep(1:20,2)),
             time = c(rep(c("pre","post"),each = 20)),
             days  = c(3,4,7,5,6,3,4,1,7,0,5,2,0,1,6,2,1,7,4,6,
                       5,5,7,3,0,3,3,2,7,0,3,4,3,3,7,0,0,6,5,6),
             change = c(2,1,0,-2,-6,0,-1,1,0,0,-2,2,3,2,1,-2,-1,-1,1,0,
                        2,1,0,-2,-6,0,-1,1,0,0,-2,2,3,2,1,-2,-1,-1,1,0))

long.df$direction <- ifelse(long.df$change==0,"No Change",
                            ifelse(long.df$change>0,"Increase","Decrease"))

gg_corset_elongated(data = long.df, x_var = "time",
                    x_vals = c("pre","post"), y_var = "days",
                    group = "id", c_var = "change")

## Create groupings based on direction of change to use for eyelets:

gg_corset_elongated(data = long.df, x_var = "time", x_vals = c("pre","post"),
                     y_var = "days", group = "id", c_var = "direction", eyelets = TRUE)

## Create faceted corset plots based on direction of change:

gg_corset_elongated(data = long.df, x_var = "time", x_vals = c("pre","post"),
                     y_var = "days", group = "id", c_var = "direction", faceted = TRUE)

## Create faceted corset plots with standard deviation eyelets:

gg_corset_elongated(data = long.df, x_var = "time", x_vals = c("pre","post"),
                     y_var = "days", group = "id", c_var = "direction",
                     e_type = "SD", faceted = TRUE)
```

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theme_ggcorset *THEME_GGCORSET*

Description

This function offers a ggplot theme to make visualizations more polished.

Usage

```
theme_ggcorset()
```

Value

ggplot2 theme

Examples

```
wide.df <- data.frame(id = c(1,2,3,4,5),
             time1 = c(3,4,7,5,6),
             time2  = c(5,5,7,3,0),
             change = c(28.57,14.29,0,-28.57,-85.71))

plot1 <- gg_corset(data = wide.df, y_var1 = "time1", y_var2 = "time2",
          group = "id", c_var = "change")

plot1 + theme_ggcorset()
```

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