

Package ‘robvis’

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Title Visualize the Results of Risk-of-Bias (ROB) Assessments

Version 0.3.0

Description Helps users in quickly visualizing risk-of-bias assessments performed as part of a systematic review. It allows users to create weighted bar-plots of the distribution of risk-of-bias judgments within each bias domain, in addition to traffic-light plots of the specific domain-level judgments for each study. The resulting figures are of publication quality and are formatted according the risk-of-bias assessment tool use to perform the assessments. Currently, the supported tools are ROB2.0 (for randomized controlled trials; Sterne et al (2019) <doi:10.1136/bmj.l4898>), ROBINS-I (for non-randomised studies of interventions; Sterne et al (2016) <doi:10.1136/bmj.i4919>), and QUADAS-2 (for diagnostic accuracy studies; Whiting et al (2011) <doi:10.7326/0003-4819-155-8-201110180-00009>).

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Encoding UTF-8

LazyData true

RoxygenNote 6.1.1

Depends R (>= 2.10)

Imports ggplot2, tidyr, scales

Suggests knitr, rmarkdown, covr, testthat

VignetteBuilder knitr, rmarkdown

BugReports <https://github.com/mcguinlu/robvis>

URL <https://github.com/mcguinlu/robvis>

NeedsCompilation no

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data_quadas	<i>Example QUADAS-2 assessment</i>
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Description

#' @format A data frame:

Study Study details

D1 Domain 1

D2 Domain 2

D3 Domain 3

D4 Domain 4

Overall Overall risk of bias

Weight Weight measure for each study

Usage

data_quadas

Format

An object of class `data.frame` with 12 rows and 7 columns.

Source

Created for this package

data_rob1	<i>Example ROB1 assessment</i>
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Description

#' @format A data frame:

Study Study details

D1 Domain 1

D2 Domain 2

D3 Domain 3

D4 Domain 4

D5 Domain 5

D6 Domain 6

D7 Domain 7

Overall Overall risk of bias

Weight Weight measure for each study

Usage

data_rob1

Format

An object of class `data.frame` with 9 rows and 10 columns.

Source

Created for this package

data_rob2	<i>Example ROB2.0 assessment</i>
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Description

#' @format A data frame:

Study Study details

D1 Domain 1

D2 Domain 2

D3 Domain 3

D4 Domain 4

D5 Domain 5

Overall Overall risk of bias

Weight Weight measure for each study

Usage

data_rob2

Format

An object of class `data.frame` with 9 rows and 8 columns.

Source

Created for this package

data_robins

Example ROBINS-I assessment

Description

#' @format A data frame:

Study Study details

D1 Domain 1

D2 Domain 2

D3 Domain 3

D4 Domain 4

D5 Domain 5

D6 Domain 6

D7 Domain 7

Overall Overall risk of bias

Weight Weight measure for each study

Usage

data_robins

Format

An object of class `data.frame` with 12 rows and 10 columns.

Source

Created for this package

robvis	<i>robvis: A package for producing risk-of-bias assessment figures.</i>
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Description

The robvis package is designed to help users produce publication quality risk-of-bias assessment figures.

rob_summary	<i>Produce summary weighted barplots of risk-of-bias assessments.</i>
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Description

A function to convert standard risk-of-bias output to tidy data and plot a summary barplot.

Usage

```
rob_summary(data, tool, overall = FALSE, weighted = TRUE,
  colour = "cochrane", quiet = FALSE)
```

Arguments

data	A dataframe containing summary (domain) level risk-of-bias assessments, with the first column containing the study details, the second column containing the first domain of your assessments, and the final column containing a weight to assign to each study. The function assumes that the data includes a column for overall risk-of-bias. For example, a ROB2.0 dataset would have 8 columns (1 for study details, 5 for domain level judgments, 1 for overall judgements, and 1 for weights, in that order).
tool	The risk of bias assessment tool used. RoB2.0 (tool='ROB2'), ROBINS-I (tool='ROBINS-I'), and QUADAS-2 (tool='QUADAS-2') are currently supported.
overall	An option to include a bar for overall risk-of-bias in the figure. Default is FALSE.
weighted	An option to specify whether weights should be used in the barplot. Default is TRUE, in line with current Cochrane Collaboration guidance.
colour	An argument to specify the colour scheme for the plot. Default is 'cochrane' which used the ubiquitous Cochrane colours, while a preset option for a colour-blind friendly palette is also available (colour = 'colourblind').
quiet	An option to quietly produce the plot without displaying it.

Value

Risk of bias assessment barplot figure.

Examples

```

data <- data.frame(stringsAsFactors=FALSE,
  Study = c("Study 1", "Study 2"),
  D1 = c("Low", "Some concerns"),
  D2 = c("Low", "Low"),
  D3 = c("Low", "Low"),
  D4 = c("Low", "Low"),
  D5 = c("Low", "Low"),
  Overall = c("Low", "Low"),
  Weight = c(33.33333333, 33.33333333)
)

rob_summary(data, "ROB2")

```

rob_tools

List tools covered by rob_summary().

Description

rob_tools() will list the tools that can currently be plotted using the rob_summary() function.

Usage

```
rob_tools()
```

Examples

```
rob_tools()
```

rob_traffic_light

Produce traffic-light plots of risk-of-bias assessments.

Description

A function to take a summary table of risk of bias assessments and produce a traffic light plot from it.

Usage

```
rob_traffic_light(data, tool, colour = "cochrane", psize = 20,
  quiet = FALSE)
```

Arguments

data	A dataframe containing summary (domain) level risk-of-bias assessments, with the first column containing the study details, the second column containing the first domain of your assessments, and the final column containing a weight to assign to each study. The function assumes that the data includes a column for overall risk-of-bias. For example, a ROB2.0 dataset would have 8 columns (1 for study details, 5 for domain level judgments, 1 for overall judgements, and 1 for weights, in that order).
tool	The risk of bias assessment tool used. RoB2.0 (tool='ROB2'), ROBINS-I (tool='ROBINS-I'), and QUADAS-2 (tool='QUADAS-2') are currently supported.
colour	An argument to specify the colour scheme for the plot. Default is 'cochrane' which used the ubiquitous Cochrane colours, while a preset option for a colour-blind friendly palette is also available (colour = 'colourblind').
psize	Control the size of the traffic lights. Default is 20.
quiet	An option to quietly produce the plot without displaying it.

Value

Risk-of-bias assessment traffic light plot (ggplot2 object)

Examples

```
data <- data.frame(stringsAsFactors=FALSE,
  Study = c("Study 1", "Study 2"),
  D1 = c("Low", "Some concerns"),
  D2 = c("Low", "Low"),
  D3 = c("Low", "Low"),
  D4 = c("Low", "Low"),
  D5 = c("Low", "Low"),
  Overall = c("Low", "Low"),
  Weight = c(33.33333333, 33.33333333)
)

rob_traffic_light(data, "ROB2")
```

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