Package 'tidyrates'

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Title Tidy Epidemiological Rates

Version 0.0.1

Description Compute age-adjusted rates by direct and indirect methods and other epidemiological indicators in a tidy way, wrapping functions from the 'epitools' package.

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Suggests knitr, rmarkdown, testthat (>= 3.0.0)

Config/testthat/edition 3

Encoding UTF-8

RoxygenNote 7.3.1

Imports checkmate, dplyr, epitools, forcats, magrittr, purrr, rlang, tibble, tidyr

Depends R (>= 2.10)

LazyData true

VignetteBuilder knitr

URL https://rfsaldanha.github.io/tidyrates/

NeedsCompilation no

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fleiss_data *Fleiss data*

Description

Fleiss dataset from `epitools` package examples, with event counts and population per age group in tidy format.

Usage

```
fleiss_data
```

Format

An object of class `tbl_df` (inherits from `tbl`, `data.frame`) with 60 rows and 4 columns.

rate_adj_direct *Compute direct adjusted rates with tibbles*

Description

Computes direct adjusted rates and confidence intervals.

Usage

```
rate_adj_direct(
  .data,
  .std,
  .keys = NULL,
  .name_var = "name",
  .value_var = "value",
  .age_group_var = "age_group",
  .age_group_pop_var = "population",
  .events_label = "events",
  .population_label = "population",
  .progress = TRUE
)
```

Arguments

`.data`	A tibble containing events counts and population per groups (e.g. age groups)
`.std`	A vector with standard population values for each group
`.keys`	Optional. A character vector with grouping variables, like year and region code.
`.name_var`	Variable containing variable names. Defaults to `name`.

.value_var	Variable containing values. Defaults to value.
.age_group_var	Variable name of age groups. Defaults to age_group.
.age_group_pop_var	Variable name of population size on .std. Defaults to population.
.events_label	Label used for events at the name_var variable. Defaults to events.
.population_label	Label used for population at the name_var variable. Defautls to population.
.progress	Whether to show a progress bar. Defaults to TRUE.

Details

This functions wraps the epitools ageadjust.direct function to compute direct adjusted rates and "exact" confidence intervals using tibble objects with multiple grouping keys.

A tibble (.data) must be informed containing key variables like year and region code, and population and and events count (e.g. cases) per age group. Check the fleiss_data for an example.

A tibble (.std) must be also supplied containing the age groups and population size. By default, this tibble has two variables, named age_group and pop.

Value

A tibble with crude and adjusted rate, lower and upper confidence intervals.

Examples

```
standard_pop <- tibble::tibble(
   age_group = c("Under 20", "20-24", "25-29", "30-34", "35-39", "40 and over"),
   population = c(63986.6, 186263.6, 157302.2, 97647.0, 47572.6, 12262.6)
 )
rate_adj_direct(fleiss_data, .std = standard_pop)
```

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rate_adj_indirect *Compute direct adjusted rates with tibbles*

Description

Computes indirect adjusted rates and confidence intervals.

Usage

```
rate_adj_indirect(
  .data,
  .std,
  .keys = NULL,
  .name_var = "name",
  .value_var = "value",
  .age_group_var = "age_group",
```

```
  .age_group_pop_var = "population",
  .events_label = "events",
  .population_label = "population",
  .progress = TRUE
)
```

Arguments

`.data`	A tibble containing events counts and population per groups (e.g. age groups)
`.std`	A vector with standard population values for each group
`.keys`	Optional. A character vector with grouping variables, like year and region code.
`.name_var`	Variable containing variable names. Defaults to `name`.
`.value_var`	Variable containing values. Defaults to `value`.
`.age_group_var`	Variable name of age groups. Defaults to `age_group`.
`.age_group_pop_var`	Variable name of population size on `.std`. Defaults to `population`.
`.events_label`	Label used for events at the `name_var` variable. Defaults to `events`.
`.population_label`	Label used for population at the `name_var` variable. Defautls to `population`.
`.progress`	Whether to show a progress bar. Defaults to `TRUE`.

Details

This functions wraps the `epitools` ageadjust.indirect function to compute indirect adjusted rates and "exact" confidence intervals using `tibble` objects with multiple grouping keys.

A tibble (`.data`) must be informed containing key variables like year and region code, and population and and events count (e.g. cases) per age group. Check the `fleiss_data` for an example.

A tibble (`.std`) must be also supplied containing the age groups, events and population size. By default, this tibble has three variables, named `age_group`, `name` and `value`. Check the `selvin_data_1940` for an example.

Value

A tibble with crude and adjusted rate, lower and upper confidence intervals.

Examples

```
rate_adj_indirect(.data = selvin_data_1960, .std = selvin_data_1940)
```

seer_std_pop *Standard population reference table*

Description

This table present standard population reference for age groups from SEER*Stat WHO adjusted proportions.

Usage

```
seer_std_pop
```

Format

An object of class `tbl_df` (inherits from `tbl`, `data.frame`) with 21 rows and 2 columns.

selvin_data_1940 *Selvin data, 1940*

Description

Selvin dataset from `epitools` package examples for 1940, with event counts and population per age group in tidy format.

Usage

```
selvin_data_1940
```

Format

An object of class `tbl_df` (inherits from `tbl`, `data.frame`) with 22 rows and 3 columns.

selvin_data_1960 *Selvin data, 1960*

Description

Selvin dataset from `epitools` package examples for 1960, with event counts and population per age group in tidy format.

Usage

```
selvin_data_1960
```

Format

An object of class `tbl_df` (inherits from `tbl`, `data.frame`) with 22 rows and 3 columns.

who_std_pop *Standard population reference table*

Description

This table present standard population reference for age groups from the World Health Organization (WHO).

Usage

```
who_std_pop
```

Format

An object of class `tbl_df` (inherits from `tbl`, `data.frame`) with 21 rows and 2 columns.

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