

Package: tidyrates (via r-universe)

October 16, 2024

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)

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Encoding UTF-8

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

Depends R (>= 2.10)

LazyData true

VignetteBuilder knitr

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

BugReports <https://github.com/rfsaldanha/tidyrates/issues>

Repository <https://rfsaldanha.r-universe.dev>

RemoteUrl <https://github.com/rfsaldanha/tidyrates>

RemoteRef HEAD

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| | |
|-------------|--------------------|
| fleiss_data | <i>Fleiss data</i> |
|-------------|--------------------|

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 | <i>Compute direct adjusted rates with tibbles</i> |
|-----------------|---|

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

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

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)
```

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

| | |
|---------------------------------|--|
| <code>.data</code> | A tibble containing events counts and population per groups (e.g. age groups) |
| <code>.std</code> | A vector with standard population values for each group |
| <code>.keys</code> | Optional. A character vector with grouping variables, like year and region code. |
| <code>.name_var</code> | Variable containing variable names. Defaults to name. |
| <code>.value_var</code> | Variable containing values. Defaults to value. |
| <code>.age_group_var</code> | Variable name of age groups. Defaults to age_group. |
| <code>.age_group_pop_var</code> | Variable name of population size on <code>.std</code> . Defaults to population. |
| <code>.events_label</code> | Label used for events at the <code>name_var</code> variable. Defaults to events. |
| <code>.population_label</code> | Label used for population at the <code>name_var</code> variable. Defaults to population. |
| <code>.progress</code> | 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 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 | <i>Standard population reference table</i> |
|--------------|--|

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 | <i>Selvin data, 1940</i> |
|------------------|--------------------------|

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 | <i>Selvin data, 1960</i> |
|------------------|--------------------------|

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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