

Package ‘tidyrates’

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Title Tidy Epidemiological Rates

Version 0.0.2

Description Compute age-adjusted rates by direct and indirect methods and other epidemiological indicators in a tidy way, using internal statistical calculations.

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Suggests knitr, rmarkdown, testthat (>= 3.0.0)

Config/testthat/edition 3

Encoding UTF-8

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

Depends R (>= 2.10)

LazyData true

VignetteBuilder knitr

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

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

NeedsCompilation no

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Contents

fleiss_data	2
rate_adj_direct	2
rate_adj_indirect	3
seer_std_pop	5

selvin_data_1940	5
selvin_data_1960	5
who_std_pop	6

Index	7
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fleiss_data	<i>Fleiss data</i>
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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>
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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 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

Computes direct adjusted rates and 95% Fay-Feuer gamma confidence intervals using tibble objects with multiple grouping keys and internal statistical calculations.

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 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	<i>Compute indirect adjusted rates with tibbles</i>
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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 tibble with reference event counts and population values for each age group, in the same age-group row order as each group in <code>.data</code> .
<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

Computes indirect adjusted rates and 95% log-normal confidence intervals using tibble objects with multiple grouping keys and internal statistical calculations.

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>
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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>
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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>
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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	<i>Standard population reference table</i>
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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.

Index

* datasets

- fleiss_data, [2](#)
- seer_std_pop, [5](#)
- selvin_data_1940, [5](#)
- selvin_data_1960, [5](#)
- who_std_pop, [6](#)

fleiss_data, [2](#)

rate_adj_direct, [2](#)
rate_adj_indirect, [3](#)

seer_std_pop, [5](#)
selvin_data_1940, [5](#)
selvin_data_1960, [5](#)

who_std_pop, [6](#)