Package ‘yll’

October 14, 2022

Type Package
Title Compute Expected Years of Life Lost (YLL) and Average YLL
Version 1.0.0
Description Compute the standard expected years of life lost (YLL), as developed by the Global Burden of Disease Study (Murray, C.J., Lopez, A.D. and World Health Organization, 1996). The YLL is based on comparing the age of death to an external standard life expectancy curve. It also computes the average YLL, which highlights premature causes of death and brings attention to preventable deaths (Aragon et al., 2008).
URL https://github.com/AntoineSoetewey/yll
BugReports https://github.com/AntoineSoetewey/yll/issues
Depends R (>= 3.1.0)
License GPL (>= 2)
Encoding UTF-8
LazyData true
RoxygenNote 6.1.0
Suggests testthat
NeedsCompilation no
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Repository CRAN
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avg_yll

**Description**

avg_yll computes the average expected years of life lost (YLL), given the number of deaths, the average age of death and the standard life expectancy.

**Usage**

```r
avg_yll(ndeaths, avg.age.death, life.expectancy, discount.rate = 0.03, 
           beta = 0.04, modulation = 0, adjustment = 0.1658)
```

**Arguments**

- `ndeaths`: Number of deaths (numeric).
- `avg.age.death`: Average age of death (numeric).
- `life.expectancy`: The interpolated life expectancy at that age. In other words, the expected remaining number of years to live (numeric).
- `discount.rate`: Discount rate (default is set to 0.03) (numeric).
- `beta`: Age-weighting constant (default is set to 0.04) (numeric).
- `modulation`: Age-weighting modulation constant (= 0, no weighting; = 1, weighting, default is set to 0) (numeric).
- `adjustment`: Adjustment constant for age-weights (default is set to 0.1658) (numeric).

**Details**

avg_yll computes the average expected years of life lost (YLL). The average YLL, which highlights premature causes of death and brings attention to preventable deaths is computed by dividing the standard YLL by the number of deaths (Aragon et al., 2008). The number of deaths, the average age of death and the standard life expectancy at least must be provided (as numeric vectors). Other arguments are provided to incorporate time discounting and age weighting.

**Value**

Since all inputs are numeric vectors, the output will be a numeric vector.

**Author(s)**

Antoine Soetewey <antoine.soetewey@uclouvain.be>

**References**

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See Also

yll for the standard measure of years of life lost.

Examples

# For 100 deaths with an average age of death of 60 years
# and an expected remaining number of years to live of 20 years:

avg_yll(100, 60, 20)

# Without discounting:

avg_yll(100, 60, 20, discount.rate = 0)

## Not run:

avg_yll("a", "b", "c") # arguments must be numeric
avg_yll(100) # avg.age.death and life.expectancy are missing,
# with no default
avg_yll(100, 60) # life.expectancy is missing,
# with no default

## End(Not run)

yll

Compute years of life lost (YLL)

Description

yll computes the standard expected years of life lost (YLL), given the number of deaths, the average age of death and the standard life expectancy.

Usage

yll(ndeaths, avg.age.death, life.expectancy, discount.rate = 0.03,
    beta = 0.04, modulation = 0, adjustment = 0.1658)

Arguments

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ndeaths</td>
<td>Number of deaths (numeric).</td>
</tr>
<tr>
<td>avg.age.death</td>
<td>Average age of death (numeric).</td>
</tr>
<tr>
<td>life.expectancy</td>
<td>The interpolated life expectancy at that age. In other words, the expected remaining number of years to live (numeric).</td>
</tr>
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<td>discount.rate</td>
<td>Discount rate (default is set to 0.03) (numeric).</td>
</tr>
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<td>beta</td>
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Details

`yll` computes the standard expected years of life lost (YLL) as developed by the Global Burden of Disease Study (Murray, C.J., Lopez, A.D. and World Health Organization, 1996). The YLL is based on comparing the age of death to an external standard life expectancy curve (Aragon et al., 2008). The number of deaths, the average age of death and the standard life expectancy at least must be provided (as numeric vectors). Other arguments are provided to incorporate time discounting and age weighting.

Value

Since all inputs are numeric vectors, the output will be a numeric vector.

Author(s)

Antoine Soetewey <antoine.soetewey@uclouvain.be>

References


See Also

`avg_yll` for the average years of life lost.

Examples

```r
# For 100 deaths with an average age of death of 60 years
# and an expected remaining number of years to live of 20 years:
yll(100, 60, 20)

# Without discounting:

yll(100, 60, 20, discount.rate = 0)

## Not run:
yll("a", "b", "c") # arguments must be numeric
yll(100) # avg.age.death and life.expectancy are missing,
# with no default
yll(100, 60) # life.expectancy is missing,
# with no default

## End(Not run)
```
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