

# Package ‘easyDes’

February 25, 2019

**Type** Package

**Title** An Easy Way to Descriptive Analysis

**Version** 5.0

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**Description** Descriptive analysis is essential for publishing medical articles.

This package provides an easy way to conduct the descriptive analysis.

1. Both numeric and factor variables can be handled. For numeric variables, normality test will be applied to choose the parametric and nonparametric test.
2. Both two or more groups can be handled. For groups more than two, the post hoc test will be applied, 'Tukey' for the numeric variables and 'FDR' for the factor variables.
3. T test, ANOVA or Fisher test can be forced to apply.
4. Mean and standard deviation can be forced to display.

**License** GPL-3

**Imports** PMCMRplus, multcomp, stats, utils

**NeedsCompilation** no

**Repository** CRAN

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## R topics documented:

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easyDes *An Easy Way to Descriptive Analysis*

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## Description

Descriptive analysis is essential for publishing medical articles. This package provides an easy way to conduct the descriptive analysis. 1. Both numeric and factor variables can be handled. For numeric variables, normality test will be applied to choose the parametric and nonparametric test. 2. Both two or more groups can be handled. For groups more than two, the post hoc test will be applied, 'Tukey' for the numeric variables and 'FDR' for the factor variables. 3. T test, ANOVA or Fisher test can be forced to apply. 4. Mean and standard deviation can be forced to display.

## Usage

```
easyDes(nc.g,nc.n,nc.f,nc.of,dataIn,fisher,aov,t,mean,mcp.stat)
```

## Arguments

nc.g	integer, the column number of the grouping variable, length of 'nc.g' must be 1
nc.n	numeric vector, the column number of the numeric variable, length of 'nc.n' can be more than 1
nc.f	numeric vector, the column number of the factor variable, length of 'nc.f' can be more than 1
nc.of	numeric vector, the column number of the ordinal factor variable, length of 'nc.of' can be more than 1
dataIn	data frame including variables above
fisher	logic, whether to apply Fisher test by force, the default is 'TRUE'
aov	logic, whether to apply ANOVA test by force, the default is 'FALSE'
t	logic, whether to apply T test by force, the default is 'FALSE'
mean	logic, whether to display the mean and standard deviation for the numeric variables by force, the default is 'FALSE'
mcp.stat	logic, whether to display the statistic for the multiple comparison

## Details

1. Nemenyi test was used as a Kruskal-Wallis post-hoc test.
2. FDR (False Discovery Rate) was used to adjust the p values after pairwise comparison of Chi-square test or Fisher test.
3. Tukey test was used as a ANOVA (Analysis of Variance) post-hoc test.
4. Shapiro-Wilk test was used as normality test if the sample size was between 3~5,000, while Kolmogorov-Smirnov test was used if the sample size was greater than 5,000.

## Value

total	the descriptive statistic for all data
group.names	the descriptive statistic for data of each group
method	the method applied to test between groups, i.e. ANOVA and Tukey, Fisher and FDR

statistic	the statistic of test, i.e., the 'W' to Wilcoxon test, the 'chi-squared' to Kruskal-Wallis, the 't' to t test, the 'F' to ANOVA test
p.value	the p value derived from the test between groups
stat.*_va_*	the statistic derived from the post hoc test, the 't' of Tukey for ANOVA, the 'q' of Nemenyi for Kruskal-Wallis
p.*_va_*	the p value derived from the post hoc test

**Note**

Please feel free to contact us, if you have any advice and find any bug!

Update description:

Version 2.0: 1. T test can be forced to apply.

Version 3.0: 1. Fixing the wrong colnames in Chi-square test. 2. Limiting the number of the decimal digits of the statistic in Chi-square test to three. 3. The number of decimal digits of the proportion for the factor variables can be set free.

Version 4.0: 1. Mean and standard deviation can be forced to display. 2. The help document has been revised. 3. Fixing the problem with more than 5,000 samples in the normality test.

Version 5.0: 1. Unify the number of decimal digits (i.e., output "0.010" rather than "0.01" for p value). 2. Add the 'nc.of' to analyze ordinal factors.

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**Examples**

```
group=rep(c(0,1),each=30)
nx1=rnorm(60)
nx2=rnorm(60)
fx1=rep(c(1:3),20)
fx2=rep(c(1:5),12)
fx3=factor(fx2)
data=data.frame(group,nx1,nx2,fx1,fx2,fx3)

easyDes(nc.g=1,nc.n=2:3,nc.f=4:5,nc.of=6,dataIn=data,
        fisher=TRUE,aov=FALSE,t=FALSE,mean=FALSE,mcp.stat=FALSE)
easyDes(nc.g=4,nc.n=2:3,nc.f=c(5,5),nc.of=6,dataIn=data,
        fisher=TRUE,aov=FALSE,t=FALSE,mean=FALSE,mcp.stat=FALSE)
easyDes(nc.g=4,nc.n=3,nc.f=5,nc.of=6,dataIn=data,
        fisher=TRUE,aov=FALSE,t=FALSE,mean=FALSE,mcp.stat=TRUE)
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