

# Package: ggmmice (via r-universe)

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**Title** Visualizations for 'mice' with 'ggplot2'

**Version** 0.1.0.9000

**Description** Enhance a 'mice' imputation workflow with visualizations for incomplete and/or imputed data. The plotting functions produce 'ggplot' objects which may be easily manipulated or extended. Use 'ggmmice' to inspect missing data, develop imputation models, evaluate algorithmic convergence, or compare observed versus imputed data.

**License** GPL (>= 3)

**URL** <https://github.com/amices/ggmmice>, <https://amices.org/>,  
<https://amices.org/ggmmice/>

**BugReports** <https://github.com/amices/ggmmice>

**Imports** cli, dplyr, ggplot2, magrittr, mice, purrr, rlang, stats, stringr, tidyr, tidyselect, utils

**Suggests** covr, knitr, patchwork, plotly, rmarkdown, testthat (>= 3.0.0)

**VignetteBuilder** knitr

**Config/testthat/edition** 3

**Copyright** 'ggmmice' authors

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**Repository** <https://amices.r-universe.dev>

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bwplot	<i>Box-and-whisker plot of observed and imputed data</i>
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### Description

Box-and-whisker plot of observed and imputed data

### Usage

```
bwplot(...)
```

### Arguments

... Any arguments passed to the function.

### Value

The output of `mice::bwplot` and a message about the `ggmice` equivalent.

### Examples

```
imp <- mice::mice(mice::nhanes, maxit = 1, printFlag = FALSE)
bwplot(imp)
```

---

densityplot	<i>Densityplot of observed and imputed data</i>
-------------	---

---

**Description**

Densityplot of observed and imputed data

**Usage**

```
densityplot(...)
```

**Arguments**

... Any arguments passed to the function.

**Value**

The output of `mice::densityplot` and a message about the `ggmice` equivalent.

**Examples**

```
imp <- mice::mice(mice::nhanes, maxit = 1, printFlag = FALSE)
densityplot(imp)
```

---

ggmice	<i>Plot incomplete or imputed data</i>
--------	--

---

**Description**

Plot incomplete or imputed data

**Usage**

```
ggmice(data = NULL, mapping = ggplot2::aes())
```

**Arguments**

`data` An incomplete dataset (of class `data.frame`), or an object of class `mice::mids`.  
`mapping` A list of aesthetic mappings created with `ggplot2::aes()`.

**Value**

An object of class `ggplot2::ggplot`. The `ggmice` function returns output equivalent to `ggplot2::ggplot` output, with a few important exceptions:

- The theme is set to `theme_mice`.
- The color scale is set to the `mice::mdc` colors.
- The colour aesthetic is set to `.where`, an internally defined variable which distinguishes observed data from missing data or imputed data (for incomplete and imputed data, respectively).

**See Also**

See the `ggmice` vignette to use the `ggmice()` function on [incomplete data](#) or [imputed data](#).

**Examples**

```
dat <- mice::nhanes
ggmice(dat, ggplot2::aes(x = age, y = bmi)) + ggplot2::geom_point()
imp <- mice::mice(dat, print = FALSE)
ggmice(imp, ggplot2::aes(x = age, y = bmi)) + ggplot2::geom_point()
```

---

plot\_corr

*Plot correlations between (incomplete) variables*

---

**Description**

Plot correlations between (incomplete) variables

**Usage**

```
plot_corr(
  data,
  vrb = "all",
  label = FALSE,
  square = TRUE,
  diagonal = FALSE,
  rotate = FALSE,
  caption = TRUE
)
```

**Arguments**

<code>data</code>	A dataset of class <code>data.frame</code> , <code>tibble</code> , or <code>matrix</code> .
<code>vrb</code>	String, vector, or unquoted expression with variable name(s), default is "all".
<code>label</code>	Logical indicating whether correlation values should be displayed.
<code>square</code>	Logical indicating whether the plot tiles should be squares.

diagonal	Logical indicating whether the correlation of each variable with itself should be displayed.
rotate	Logical indicating whether the variable name labels should be rotated 90 degrees.
caption	Logical indicating whether the figure caption should be displayed.

**Value**

An object of class `ggplot2::ggplot`.

**Examples**

```
# plot correlations for all columns
plot_corr(mice::nhanes)

# plot correlations for specific columns by supplying a character vector
plot_corr(mice::nhanes, c("chl", "hyp"))

# plot correlations for specific columns by supplying unquoted variable names
plot_corr(mice::nhanes, c(chl, hyp))

# plot correlations for specific columns by passing an object with variable names
# from the environment, unquoted with `!!`
my_variables <- c("chl", "hyp")
plot_corr(mice::nhanes, !!my_variables)
# object with variable names must be unquoted with `!!`
try(plot_corr(mice::nhanes, my_variables))
```

---

plot\_flux

---

*Plot the influx and outflux of a multivariate missing data pattern*


---

**Description**

Plot the influx and outflux of a multivariate missing data pattern

**Usage**

```
plot_flux(data, vrb = "all", label = TRUE, caption = TRUE)
```

**Arguments**

data	An incomplete dataset of class <code>data.frame</code> or <code>matrix</code> .
vrb	String, vector, or unquoted expression with variable name(s), default is "all".
label	Logical indicating whether variable names should be displayed within the plot (the default) or with colors in the legend.
caption	Logical indicating whether the figure caption should be displayed.

**Value**

An object of class `ggplot2::ggplot`.

**Examples**

```
# plot flux for all columns
plot_flux(mice::nhanes)

# plot flux for specific columns by supplying a character vector
plot_flux(mice::nhanes, c("chl", "hyp"))

# plot flux for specific columns by supplying unquoted variable names
plot_flux(mice::nhanes, c(chl, hyp))

# plot flux for specific columns by passing an object with variable names
# from the environment, unquoted with `!!`
my_variables <- c("chl", "hyp")
plot_flux(mice::nhanes, !!my_variables)
# object with variable names must be unquoted with `!!`
try(plot_flux(mice::nhanes, my_variables))
```

---

plot\_pattern

*Plot the missing data pattern of an incomplete dataset*

---

**Description**

Plot the missing data pattern of an incomplete dataset

**Usage**

```
plot_pattern(
  data,
  vrb = "all",
  square = TRUE,
  rotate = FALSE,
  cluster = NULL,
  npat = NULL,
  caption = TRUE
)
```

**Arguments**

data	An incomplete dataset of class <code>data.frame</code> or <code>matrix</code> .
vrb	String, vector, or unquoted expression with variable name(s), default is "all".
square	Logical indicating whether the plot tiles should be squares, defaults to squares to mimic <code>mice::md.pattern()</code> .

rotate	Logical indicating whether the variable name labels should be rotated 90 degrees.
cluster	Optional character string specifying which variable should be used for clustering (e.g., for multilevel data).
npat	Optional numeric input specifying the number of missing data patterns to be visualized, defaults to all patterns.
caption	Logical indicating whether the figure caption should be displayed.

**Value**

An object of class `ggplot2::ggplot`.

**Examples**

```
# plot missing data pattern for all columns
plot_pattern(mice::nhanes)

# plot missing data pattern for specific columns by supplying a character vector
plot_pattern(mice::nhanes, c("chl", "hyp"))

# plot missing data pattern for specific columns by supplying unquoted variable names
plot_pattern(mice::nhanes, c(chl, hyp))

# plot missing data pattern for specific columns by passing an object with variable names
# from the environment, unquoted with `!!`
my_variables <- c("chl", "hyp")
plot_pattern(mice::nhanes, !!my_variables)
# object with variable names must be unquoted with `!!!`
try(plot_pattern(mice::nhanes, my_variables))
```

---

plot\_pred

*Plot the predictor matrix of an imputation model*


---

**Description**

Plot the predictor matrix of an imputation model

**Usage**

```
plot_pred(
  data,
  vrb = "all",
  method = NULL,
  label = TRUE,
  square = TRUE,
  rotate = FALSE
)
```

**Arguments**

data	A predictor matrix for mice, typically generated with <code>mice::make.predictorMatrix</code> or <code>mice::quickpred</code> .
vrb	String, vector, or unquoted expression with variable name(s), default is "all".
method	Character string or vector with imputation methods.
label	Logical indicating whether predictor matrix values should be displayed.
square	Logical indicating whether the plot tiles should be squares.
rotate	Logical indicating whether the variable name labels should be rotated 90 degrees.

**Value**

An object of class `ggplot2::ggplot`.

**Examples**

```
# generate a predictor matrix
pred <- mice::quickpred(mice::nhanes)

# plot predictor matrix for all columns
plot_pred(pred)

# plot predictor matrix for specific columns by supplying a character vector
plot_pred(pred, c("chl", "hyp"))

# plot predictor matrix for specific columns by supplying unquoted variable names
plot_pred(pred, c(chl, hyp))

# plot predictor matrix for specific columns by passing an object with variable names
# from the environment, unquoted with `!!`
my_variables <- c("chl", "hyp")
plot_pred(pred, !!my_variables)
# object with variable names must be unquoted with `!!`
try(plot_pred(pred, my_variables))
```

---

plot\_trace

*Plot the trace lines of the imputation algorithm*


---

**Description**

Plot the trace lines of the imputation algorithm

**Usage**

```
plot_trace(data, vrb = "all")
```



**Arguments**

`data` An object of class `mice::mids`.

`vrbl` String, vector, or unquoted expression with variable name(s), default is "all".

**Details**

The `vrbl` argument is "quoted" via `rlang::enexpr()` and evaluated according to [tidy evaluation principles](#). In practice, this technical nuance only affects users when passing an object from the environment (e.g., a vector of variable names) to the `vrbl` argument. In such cases, the object must be "unquoted" via the `!!` prefix operator.

**Value**

An object of class `ggplot2::ggplot`.

**Examples**

```
# create [mice::mids] object with [mice::mice()]
imp <- mice::mice(mice::nhanes, print = FALSE)

# plot trace lines for all imputed columns
plot_trace(imp)

# plot trace lines for specific columns by supplying a string or character vector
plot_trace(imp, "chl")
plot_trace(imp, c("chl", "hyp"))
# plot trace lines for specific columns by supplying unquoted variable names
plot_trace(imp, chl)
plot_trace(imp, c(chl, hyp))

# plot trace lines for specific columns by passing an object with variable names
# from the environment, unquoted with `!!`
my_variables <- c("chl", "hyp")
plot_trace(imp, !!my_variables)
# object with variable names must be unquoted with `!!`
try(plot_trace(imp, my_variables))
```

---

stripplot

*Stripplot of observed and imputed data*


---

**Description**

Stripplot of observed and imputed data

**Usage**

```
stripplot(...)
```

**Arguments**

... Any arguments passed to the function.

**Value**

The output of `mice::striplot` and a message about the ggmlce equivalent.

**Examples**

```
imp <- mice::mice(mice::nhanes, maxit = 1, printFlag = FALSE)
striplot(imp)
```

---

theme_mice	<i>Theme for <code>mice</code> style <code>ggplot2::ggplot</code> objects</i>
------------	---

---

**Description**

Theme for `mice` style `ggplot2::ggplot` objects

**Usage**

```
theme_mice()
```

**Value**

A `ggplot2` theme.

---

theme_minimice	<i>Minimal theme for <code>mice</code> style <code>ggplot2::ggplot</code> objects</i>
----------------	---

---

**Description**

Minimal theme for `mice` style `ggplot2::ggplot` objects

**Usage**

```
theme_minimice()
```

**Value**

A `ggplot2` theme.

---

`xyplot`*Scatterplot of observed and imputed data*

---

**Description**

Scatterplot of observed and imputed data

**Usage**

```
xyplot(...)
```

**Arguments**

... Any arguments passed to the function.

**Value**

The output of `mice::xyplot` and a message about the `ggmice` equivalent.

**Examples**

```
imp <- mice::mice(mice::nhanes, maxit = 1, printFlag = FALSE)
xyplot(imp, bmi ~ age)
```

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