

Untitled1*

conoc_actit_factor_cancer_cervical

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Addins

Source

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Outline

title: "Practica 4 - 2/3"

author: "Grupo 06"

format: html

editor: visual

Trabajo Practico 4 - 2/3

GRUPO:

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- ESQUIVEL MOLERO, Lourdes Valeria.

- PALACIOS SALINAS, [Danna Ariela](#).

- ROJAS CORREA, [Aitana](#).

- VELASQUEZ ROMAN, Alvaro Fabian.

Instalamos y cargamos los paquetes:

{r}

install.packages("mice")

install.packages("ggmice")

{r}

library(mice)

library(tidyverse)

library(here)

library(rio)

library(ggmice)

Chunk 18

Quarto

Environment

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Tutorial

Import Dataset

461 MiB

Global Environment

Data

conoc_actit_factor_ca... 218 obs. of 18 variables

data_can_cerv 218 obs. of 18 variables

data_imputada List of 23

data_imputada_1 4578 obs. of 20 variables

input_data 218 obs. of 17 variables

tabla Large tbl_merge (4 elements, 20.5 MB)

tabla_edad_relacion_s... Large tbl_summary (5 elements, 10.2 MB)

tabla_edad_relacion_s... Large tbl_summary (5 elements, 10.2 MB)

tabla_multi Large tbl_regression (6 elements, 9.4 MB)

tabla_parejas_sex Large tbl_summary (5 elements, 10.2 MB)

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estadistica_upsjb_estudio

Estadistica

data

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Size

Modified

--practica01.Rproj 286 B Apr 15, 2025, 8:35 PM

.Rhistory 112 B Apr 15, 2025, 8:36 PM

conoc_actit_factor_cancer_cervical.csv 24.6 KB Apr 17, 2025, 9:37 PM

s02_treat_artritis.csv 41.7 KB Apr 12, 2025, 8:34 AM

s02_treat_artritis.Rdata 33.6 KB Apr 12, 2025, 8:34 AM

s02_treat_artritis.sav 12.9 KB Apr 12, 2025, 8:34 AM

s02_treat_artritis.xlsx 38.6 KB Apr 12, 2025, 8:34 AM

s03_treat_artritis.csv 29.9 KB Apr 19, 2025, 8:00 AM

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{r}

library(mice)

library(tidyverse)

library(here)

library(rio)

library(ggmice)

library(gtsummary)

Cargamos los datos:

{r}

data_can_cerv <- import(here("estadistica_upsjb_estudio/Estadistica/data/conoc_actit_factor_cancer_cervical.csv"))

Revisamos los datos:

{r}

head(data_can_cerv)

Description: df [6 x 18]

	paciente <int>	edad <chr>	e_marital <chr>	n_educac... <chr>	religion <chr>	etnia <chr>
1	1	53	casada	superior	catolico	mestizo
2	2	54	casada	superior	catolico	mestizo
3	3	26	soltera	superior	catolico	blanco
4	4	25	soltera	superior	ninguna	mestizo
5	5	25	soltera	superior	ninguna	mestizo
6	6	38	soltera	superior	catolico	mestizo

6 rows | 1-7 of 18 columns

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Realizamos la imputacion de los datos:

- ¿Donde estan nueetros datos perdidos?

{r}

colSums(is.na(data_can_cerv))

paciente_num

edad

e_marital

n_educacion

0

0

0

religion

etnia

procedencia

ocupacion

0

0

0

ocupacion_conv

antec_fam

edad_relacion_sexual

parejas_sex

0

0

0

num_hijos

met_anticoncep

antec_ets

conocimiento

0

0

0

actitud

practica

0

Visualizamos los datos perdidos en un mapa de calor usando la funcion plot_pattern() de ggmice.

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Untitled1* x conoc_actit_factor_cancer_cervical x

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actitud
0

practica
0

Visualizamos los datos perdidos en un mapa de calor usando la función `plot_pattern()` de `ggmice`.

```
{r}  
data_can_cerv |>  
  select(  
    edad,  
    e_marital,  
    n_educacion,  
    etnia,  
    religion,  
    procedencia,  
    ocupacion,  
    ocupacion_convi,  
    antec_fam,  
    edad_relacion_sexual,  
    parejas_sex,  
    num_hijos,  
    met_anticoncep,  
    antec_ets,  
    conocimiento,  
    actitud,  
    practica  
  ) |>  
  ggmice::plot_pattern(  
    square = TRUE,  
    rotate = TRUE  
  )
```

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Import Dataset 461 MiB

R Global Environment

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Untitled1* x conoc_actit_factor_cancer_cervical x

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```
rotate = TRUE
```

Nuestro gráfico muestra que el conjunto de datos carece por completo de valores faltantes. Todas las 17 variables, como "edad" u "ocupacion", tienen 218 observaciones completas. Cada columna está totalmente llena de datos observados, sin ninguna entrada faltante. Esto significa que la imputación de datos, con `mice()`, no es necesaria para nuestra dataset particular, ya que no hay valores ausentes que reemplazar.

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Import Dataset 461 MiB

R Global Environment

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Untitled1* x conoc_actit_factor_cancer_cervical x

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ABC

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Interpretacion: Nuestro gráfico muestra que el conjunto de datos carece por completo de valores faltantes. Todas las 17 variables, como "edad" u "ocupacion", tienen 218 observaciones completas. Cada columna está totalmente llena de datos observados, sin ninguna entrada faltante. Esto significa que la imputación de datos, con `mice()`, no es necesaria para nuestra dataset particular, ya que no hay valores ausentes que reemplazar.

Comparacion de participantes con y sin valores perdidos:

```
{r}  
tabla_parejas_sex = data_can_cerv |>  
  dplyr::select(  
    edad,  
    e_marital,  
    n_educacion,  
    etnia,  
    religion,  
    procedencia,  
    ocupacion,  
    ocupacion_convi,  
    antec_fam,  
    edad_relacion_sexual,  
    parejas_sex,  
    num_hijos,  
    met_anticoncep,  
    antec_ets,  
    conocimiento,  
    actitud,  
    practica  
  ) |>  
  mutate(missing = factor(  
    is.na(parejas_sex),  
    levels = c(FALSE, TRUE),  
    labels = c("Sin valores perdidos", "Con valores perdidos")  
  )) |>  
  summarise(  
    total = n(),  
    missing_count = sum(missing == "Con valores perdidos")  
  )
```

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Untitled1 * conoc_actit_factor_cancer_cervical

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```
practica
}) |>
mutate(missing = factor(
  is.na(parejas_sex),
  levels = c(FALSE, TRUE),
  labels = c("Sin valores perdidos", "Con valores perdidos")
)) |>
tbl_summary(
  by = missing,
  statistic = list(
    all_continuous() ~ "{mean} ({sd})",
    all_categorical() ~ "{n} ({p}%)"
  )
) |>
modify_header(label = "**Variable**",
  all_stat_cols() ~ "**{level}**<br>N = {n} ({style_percent(p, digits
=1)}%)" ) |>
modify_caption("Características de los valores perdidos") |>
bold_labels()

tabla_edad_relacion_sexual = data_can_cerv |>
dplyr::select(
  edad,
  e_marital,
  n_educacion,
  etnia,
  religion,
  procedencia,
  ocupacion,
  ocupacion_convi,
  antec_fam,
  edad_relacion_sexual,
  parejas_sex,
  num_hijos,
  met_anticoncep,
  antec_ets,
  conocimiento,
  actitud,
  practica
)
```

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Untitled1 * conoc_actit_factor_cancer_cervical

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```
num_hijos,
met_anticoncep,
antec_ets,
conocimiento,
actitud,
practica
}) |>
mutate(missing = factor(
  is.na(edad_relacion_sexual),
  levels = c(FALSE, TRUE),
  labels = c("Sin valores perdidos", "Con valores perdidos")
)) |>
tbl_summary(
  by = missing,
  statistic = list(
    all_continuous() ~ "{mean} ({sd})",
    all_categorical() ~ "{n} ({p}%)"
  )
) |>
modify_header(label = "**variable**",
  all_stat_cols() ~ "**{level}**<br>N = {n} ({style_percent(p, digits
=1)}%)" ) |>
modify_caption("Características de los participantes segun valor perdido") |>
bold_labels()

tabla <- tbl_merge(
  tbls = list(tabla_parejas_sex, tabla_edad_relacion_sexual),
  tab_spanner = c("**N° de parejas intimas**", "**Edad a la que intimaron por
primera vez**")
)

{r}
tabla
```

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```
tbls = list(tabla_parejas_sex, tabla_edad_relacion_sexual),
tab_spanner = c("**N° de parejas intimas**", "**Edad a la que intimaron por
primera vez**")
)

{r}
tabla
```

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Características de los valores perdidos

	N° de parejas intimas		Edad a la que intimaron por primera vez	
Variable	Sin valores perdidos N = 218 (100.0%) ¹	Con valores perdidos N = 0 (0%) ¹	Sin valores perdidos N = 218 (100.0%) ¹	Con valores perdidos N = 0 (0%) ¹
edad	45 (11)	NA (NA)	45 (11)	NA (NA)
e_marital				
casada	94 (43%)	0 (NA%)	94 (43%)	0 (NA%)
conviviente	68 (31%)	0 (NA%)	68 (31%)	0 (NA%)
soltera	49 (22%)	0 (NA%)	49 (22%)	0 (NA%)

conoc_actit_factor_cancer_cervical

```
tbls = list(tabla_parejas_sex, tabla_edad_relacion_sexual),
tab_spanner = c("***N* de parejas intimas**", "***Edad a la que intimaron por primera vez**")
)
```

{r}

tabla

viuda	7 (3.2%)	0 (NA%)	7 (3.2%)	0 (NA%)
n_educacion				
primaria	5 (2.3%)	0 (NA%)	5 (2.3%)	0 (NA%)
secundaria	53 (24%)	0 (NA%)	53 (24%)	0 (NA%)
superior	160 (73%)	0 (NA%)	160 (73%)	0 (NA%)
etnia				
blanco	40 (18%)	0 (NA%)	40 (18%)	0 (NA%)
mestizo	163 (75%)	0 (NA%)	163 (75%)	0 (NA%)
otro	15 (6.9%)	0 (NA%)	15 (6.9%)	0 (NA%)
religion				
catolico	180 (83%)	0 (NA%)	180 (83%)	0 (NA%)

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conoc_actit_factor_cancer_cervical

```
tbls = list(tabla_parejas_sex, tabla_edad_relacion_sexual),
tab_spanner = c("***N* de parejas intimas**", "***Edad a la que intimaron por primera vez**")
)
```

{r}

tabla

religion				
catolico	180 (83%)	0 (NA%)	180 (83%)	0 (NA%)
evangelista	32 (15%)	0 (NA%)	32 (15%)	0 (NA%)
ninguna	6 (2.8%)	0 (NA%)	6 (2.8%)	0 (NA%)
procedencia				
rural	107 (49%)	0 (NA%)	107 (49%)	0 (NA%)
urbano	111 (51%)	0 (NA%)	111 (51%)	0 (NA%)
ocupacion				
ama de casa	37 (17%)	0 (NA%)	37 (17%)	0 (NA%)
empleada	130 (60%)	0 (NA%)	130 (60%)	0 (NA%)
estudiante	29 (13%)	0 (NA%)	29 (13%)	0 (NA%)

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conoc_actit_factor_ca...	218 obs. of 18 variables
data_can_cerv	218 obs. of 18 variables
data_imputada	List of 23
data_imputada_1	4578 obs. of 20 variables
input_data	218 obs. of 17 variables
tabla	Large tbl_merge (4 elements, 20.5 MB)
tabla_edad_relacion_s...	Large tbl_summary (5 elements, 10.2 MB)
tabla_edad_relacion_s...	Large tbl_summary (5 elements, 10.2 MB)
tabla_multi	Large tbl_regression (6 elements, 9.4 MB)
tabla_parejas_sex	Large tbl_summary (5 elements, 10.2 MB)

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s02_treat_artritis.sav	12.9 KB	Apr 12, 2025, 8:34 AM
s02_treat_artritis.xlsx	38.6 KB	Apr 12, 2025, 8:34 AM
s03_treat_artritis.csv	29.9 KB	Apr 19, 2025, 8:00 AM

conoc_actit_factor_cancer_cervical

```
tbls = list(tabla_parejas_sex, tabla_edad_relacion_sexual),
tab_spanner = c("***N* de parejas intimas**", "***Edad a la que intimaron por primera vez**")
)
```

{r}

tabla

ocupacion_conv				
empleado	148 (68%)	0 (NA%)	148 (68%)	0 (NA%)
estudiante	14 (6.4%)	0 (NA%)	14 (6.4%)	0 (NA%)
otro	52 (24%)	0 (NA%)	52 (24%)	0 (NA%)
sin empleo	4 (1.8%)	0 (NA%)	4 (1.8%)	0 (NA%)
antec_fam				
no	175 (80%)	0 (NA%)	175 (80%)	0 (NA%)
si	43 (20%)	0 (NA%)	43 (20%)	0 (NA%)

Environment

History

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Estadistica

data

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Addins

Untitled1* conoc_actit_factor_cancer_cervical

Render on Save Render Run Publish

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```
tbls = list(tabla_parejas_sex, tabla_edad_relacion_sexual),
tab_spanner = c("***N° de parejas intimas***", "***Edad a la que intimaron por primera vez***")
)
```

{r}

tabla

edad_relacion_sexual	19 (2)	NA (NA)	19 (2)	NA (NA)
parejas_sex	3 (2)	NA (NA)	3 (2)	NA (NA)
num_hijos				
0	30 (14%)	0 (NA%)	30 (14%)	0 (NA%)
1	43 (20%)	0 (NA%)	43 (20%)	0 (NA%)
2	70 (32%)	0 (NA%)	70 (32%)	0 (NA%)
3	42 (19%)	0 (NA%)	42 (19%)	0 (NA%)
4	27 (12%)	0 (NA%)	27 (12%)	0 (NA%)
5	4 (1.8%)	0 (NA%)	4 (1.8%)	0 (NA%)
6	2 (0.9%)	0 (NA%)	2 (0.9%)	0 (NA%)
met anticoncep				

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Import Dataset 63 MiB

Data

conoc_actit_factor_ca...

218 obs. of 18 variables

data_can_cerv

218 obs. of 18 variables

data_imputada

List of 23

data_imputada_l

4578 obs. of 20 variables

input_data

218 obs. of 17 variables

tabla

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tabla_multi

Large tbl_regression (6 elements, 9.4 MB)

tabla_parejas_sex

Large tbl_summary (5 elements, 10.2 MB)

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38.6 KB

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Addins

Untitled1* conoc_actit_factor_cancer_cervical

Render on Save Render Run Publish

Source Visual B I <> Normal Format Insert Table Outline

```
tbls = list(tabla_parejas_sex, tabla_edad_relacion_sexual),
tab_spanner = c("***N° de parejas intimas***", "***Edad a la que intimaron por primera vez***")
)
```

{r}

tabla

met anticoncep				
aco	42 (19%)	0 (NA%)	42 (19%)	0 (NA%)
ampolla de 3 meses	42 (19%)	0 (NA%)	42 (19%)	0 (NA%)
ampolla mes	42 (19%)	0 (NA%)	42 (19%)	0 (NA%)
diu	16 (7.3%)	0 (NA%)	16 (7.3%)	0 (NA%)
implante_sd	11 (5.0%)	0 (NA%)	11 (5.0%)	0 (NA%)
no uso	65 (30%)	0 (NA%)	65 (30%)	0 (NA%)
antec_ets				
no	203 (93%)	0 (NA%)	203 (93%)	0 (NA%)
si	15 (6.9%)	0 (NA%)	15 (6.9%)	0 (NA%)

Environment History Connections Tutorial

Import Dataset 63 MiB

Data

conoc_actit_factor_ca...

218 obs. of 18 variables

data_can_cerv

218 obs. of 18 variables

data_imputada

List of 23

data_imputada_l

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Large tbl_summary (5 elements, 10.2 MB)

tabla_multi

Large tbl_regression (6 elements, 9.4 MB)

tabla_parejas_sex

Large tbl_summary (5 elements, 10.2 MB)

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Apr 12, 2025, 8:34 AM

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Addins

Untitled1* conoc_actit_factor_cancer_cervical

Render on Save Render Run Publish

Source Visual B I <> Normal Format Insert Table Outline

```
tbls = list(tabla_parejas_sex, tabla_edad_relacion_sexual),
tab_spanner = c("***N° de parejas intimas***", "***Edad a la que intimaron por primera vez***")
)
```

{r}

tabla

conocimiento				
alto	85 (39%)	0 (NA%)	85 (39%)	0 (NA%)
bajo	60 (28%)	0 (NA%)	60 (28%)	0 (NA%)
medio	67 (31%)	0 (NA%)	67 (31%)	0 (NA%)
no conoce	6 (2.8%)	0 (NA%)	6 (2.8%)	0 (NA%)
actitud				
negativa	85 (39%)	0 (NA%)	85 (39%)	0 (NA%)
positiva	133 (61%)	0 (NA%)	133 (61%)	0 (NA%)
practica				
correcta	77 (35%)	0 (NA%)	77 (35%)	0 (NA%)
incorrecta	141 (65%)	0 (NA%)	141 (65%)	0 (NA%)

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Import Dataset 63 MiB

Data

conoc_actit_factor_ca...

218 obs. of 18 variables

data_can_cerv

218 obs. of 18 variables

data_imputada

List of 23

data_imputada_l

4578 obs. of 20 variables

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tabla_edad_relacion_s...

Large tbl_summary (5 elements, 10.2 MB)

tabla_multi

Large tbl_regression (6 elements, 9.4 MB)

tabla_parejas_sex

Large tbl_summary (5 elements, 10.2 MB)

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s02_treat_artritis.Rdata

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s02_treat_artritis.sav

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Apr 12, 2025, 8:34 AM

s02_treat_artritis.xlsx

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Mean (SD); n (%)

Interpretacion: El documento "Características de los valores perdidos" presenta un análisis del dataset de 218 observaciones. Las tablas, que abarcan variables como "edad", "ocupación", "etnia" y "conocimiento", demuestran consistentemente que todas las variables están completas. Cada entrada bajo la categoría "Sin valores perdidos" registra un "N=0(0%)", lo que significa que el conjunto de datos carece totalmente de valores ausentes. Esta información es importante, ya que confirma que no se requiere ninguna técnica de imputación de datos, como `mice()`, para este particular dataset.

¿Qué variables debemos incluir en el proceso de imputación?

```
{r}
input_data =
  data_can_cerv |>
  dplyr::select(
    edad,
    e_marital,
    n_educacion,
    etnia,
    religion,
    procedencia,
    ocupacion,
    ocupacion_convi,
    antec_fam,
    edad_relacion_sexual,
    parejas_sex,
    num_hijos,
    met_anticoncep,
    antec_ets,
    conocimiento,
    actitud,
  )
```

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data_can_cerv

218 obs. of 18 variables

data_imputada

List of 23

data_imputada_1

4578 obs. of 20 variables

input_data

218 obs. of 17 variables

tabla

Large tbl_merge (4 elements, 20.5 MB)

tabla_edad_relacion_s...

Large tbl_summary (5 elements, 10.2 MB)

tabla_edad_relacion_s...

Large tbl_summary (5 elements, 10.2 MB)

tabla_multi

Large tbl_regression (6 elements, 9.4 MB)

tabla_parejas_sex

Large tbl_summary (5 elements, 10.2 MB)

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s02_treat_artritis.xlsx

38.6 KB

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s03_treat_artritis.csv

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conoc_actit_factor_cancer_cervical

Render on Save

Render

Source

Visual

Normal

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Insert

Table

Outline

¿Qué variables debemos incluir en el proceso de imputación?

```
{r}
input_data =
  data_can_cerv |>
  dplyr::select(
    edad,
    e_marital,
    n_educacion,
    etnia,
    religion,
    procedencia,
    ocupacion,
    ocupacion_convi,
    antec_fam,
    edad_relacion_sexual,
    parejas_sex,
    num_hijos,
    met_anticoncep,
    antec_ets,
    conocimiento,
    actitud,
    practica
  ) |>
  mutate(antec_ets = as.factor(antec_ets))
```

- Usando funcion "mice()" para imputar datos:

```
{r}
names(input_data)
```

```
{r}
data_imputada =
  mice(
    input_data,
    m = 20
```

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Import Dataset

41 MiB

Global Environment

Data

conoc_actit_factor_ca...

218 obs. of 18 variables

data_can_cerv

218 obs. of 18 variables

data_imputada

List of 23

data_imputada_1

4578 obs. of 20 variables

input_data

218 obs. of 17 variables

tabla

Large tbl_merge (4 elements, 20.5 MB)

tabla_edad_relacion_s...

Large tbl_summary (5 elements, 10.2 MB)

tabla_edad_relacion_s...

Large tbl_summary (5 elements, 10.2 MB)

tabla_multi

Large tbl_regression (6 elements, 9.4 MB)

tabla_parejas_sex

Large tbl_summary (5 elements, 10.2 MB)

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Apr 12, 2025, 8:34 AM

s03_treat_artritis.csv

29.9 KB

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- Usando funcion "mice()" para imputar datos:

```
{r}
names(input_data)
```

```
{r}
data_imputada =
  mice(
    input_data,
    m = 20,
    method = c(
      "",
      "",
      "",
      "",
      "",
      "",
      "",
      "",
      "",
      "",
      "",
      "",
      "",
      "",
      "",
      "",
      "pmm",
      "pmm",
      "",
      "logreg",
      "",
      ""
    ),
    maxit = 20,
    seed = 3,
    print = F
  )
```

Aviso: Number of logged events: 12

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Data

conoc_actit_factor_ca...

218 obs. of 18 variables

data_can_cerv

218 obs. of 18 variables

data_imputada

List of 23

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tabla_multi

Large tbl_regression (6 elements, 9.4 MB)

tabla_parejas_sex

Large tbl_summary (5 elements, 10.2 MB)

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s02_treat_artritis.sav

12.9 KB

Apr 12, 2025, 8:34 AM

s02_treat_artritis.xlsx

38.6 KB

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conoc_activ_factor_cancer_cervical

data_imputada

Description: df [6 x 5]

	it<dbl>	im<dbl>	dep<chr>	meth<chr>	out<chr>
1	0	0		constant	e_marital
2	0	0		constant	n_educacion
3	0	0		constant	etnia
4	0	0		constant	religion
5	0	0		constant	procedencia
6	0	0		constant	ocupacion

6 rows

Analizando los datos imputados:

- Para la variable parejas_sex

```
{r}ggmice(data_imputada, aes(x = .imp, y = parejas_sex)) +geom_jitter(height = 0, width = 0.25) +geom_boxplot(width = 0.5, size = 1, alpha = 0.55, outlier.shape = NA) +labs(x = "Imputation number")
```

Chunk 8

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Data

conoc_activ_factor_ca...	218 obs. of 18 variables
data_can_cerv	218 obs. of 18 variables
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tabla_multi	Large tbl_regression (6 elements, 9.4 MB)
tabla_parejas_sex	Large tbl_summary (5 elements, 10.2 MB)

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s03_treat_artritis.csv	29.9 KB	Apr 19, 2025, 8:00 AM

conoc_activ_factor_cancer_cervical

Analizando los datos imputados:

- Para la variable parejas_sex

```
{r}ggmice(data_imputada, aes(x = .imp, y = parejas_sex)) +geom_jitter(height = 0, width = 0.25) +geom_boxplot(width = 0.5, size = 1, alpha = 0.55, outlier.shape = NA) +labs(x = "Imputation number")
```

Chunk 8

observed imputed

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Data

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tabla_edad_relacion_s...	Large tbl_summary (5 elements, 10.2 MB)
tabla_multi	Large tbl_regression (6 elements, 9.4 MB)
tabla_parejas_sex	Large tbl_summary (5 elements, 10.2 MB)

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conoc_activ_factor_cancer_cervical

Interpretacion: El gráfico generado con ggmice nos ayuda a visualizar la distribución de la variable "parejas_sex" en el conjunto de datos data_imputada. Se utiliza geom_jitter para mostrar los puntos de datos individuales y geom_boxplot para representar la mediana, cuartiles y posibles valores atípicos. La etiqueta del eje X, "Imputation number", y la ausencia de puntos en "imputed" (0 en el eje x) sugieren que se está mostrando la distribución de los valores observados de la variable, sin que se hayan generado imputaciones para esta. Esto coincide con la observación previa de que el dataset no presenta valores faltantes.

- Para la variable edad_relacion_sexual:

```
{r}ggmice(data_imputada, aes(x = .imp, y = edad_relacion_sexual)) +geom_jitter(height = 0, width = 0.25) +geom_boxplot(width = 0.5, size = 1, alpha = 0.55, outlier.shape = NA) +labs(x = "Imputation number")
```

Chunk 8

observed imputed

Environment

History

Connections

Tutorial

Global Environment

Data

conoc_activ_factor_ca...	218 obs. of 18 variables
data_can_cerv	218 obs. of 18 variables
data_imputada	List of 23
data_imputada_l	4578 obs. of 20 variables
input_data	218 obs. of 17 variables
tabla	Large tbl_merge (4 elements, 20.5 MB)
tabla_edad_relacion_s...	Large tbl_summary (5 elements, 10.2 MB)
tabla_edad_relacion_s...	Large tbl_summary (5 elements, 10.2 MB)
tabla_multi	Large tbl_regression (6 elements, 9.4 MB)
tabla_parejas_sex	Large tbl_summary (5 elements, 10.2 MB)

Files

Plots

Packages

Help

Viewer

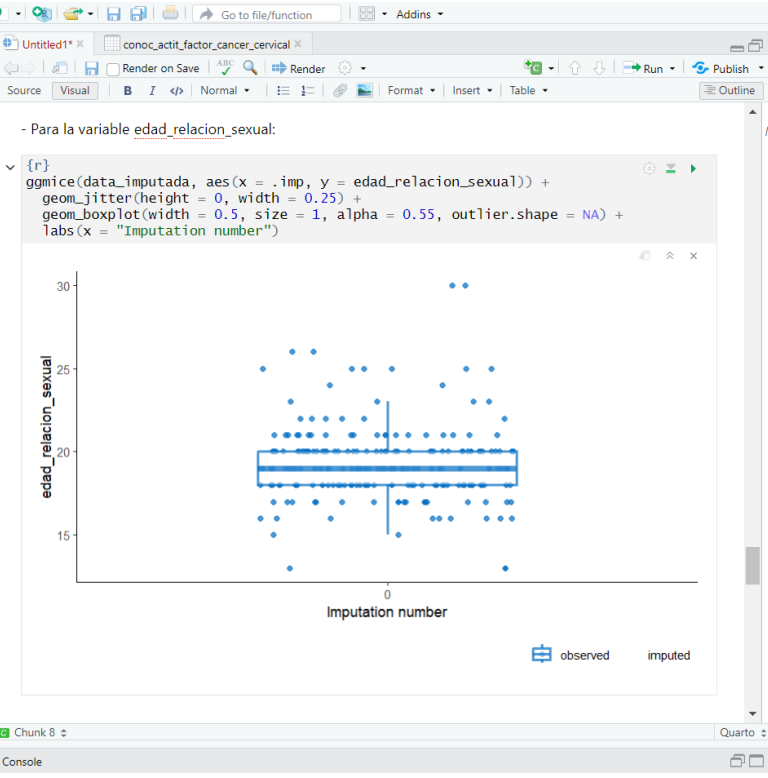
Presentation

estadistica_upsjb_estudio

Estadistica

data

Name	Size	Modified
..		
--practica01.Rproj	286 B	Apr 15, 2025, 8:35 PM
.Rhistory	112 B	Apr 15, 2025, 8:36 PM
conoc_activ_factor_cancer_cervical.csv	24.6 KB	Apr 17, 2025, 9:37 PM
s02_treat_artritis.csv	41.7 KB	Apr 12, 2025, 8:34 AM
s02_treat_artritis.Rdata	33.6 KB	Apr 12, 2025, 8:34 AM
s02_treat_artritis.sav	12.9 KB	Apr 12, 2025, 8:34 AM
s02_treat_artritis.xlsx	38.6 KB	Apr 12, 2025, 8:34 AM
s03_treat_artritis.csv	29.9 KB	Apr 19, 2025, 8:00 AM



Environment	History	Connections	Tutorial
R	Global Environment		
Data			
conoc_actit_factor_ca...	218 obs. of 18 variables		
data_can_cerv	218 obs. of 18 variables		
data_imputada	List of 23		
data_imputada_1	4578 obs. of 20 variables		
input_data	218 obs. of 17 variables		
tabla	Large tbl_merge (4 elements, 20.5 MB)		
tabla_edad_relacion_s...	Large tbl_summary (5 elements, 10.2 MB)		
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Files	Plots	Packages	Help	Viewer	Presentation
New Folder	New File	Delete	Rename	More	
Home	estadistica_upsjb_estudio	Estadística	data		
Name	Size	Modified			
..					
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s02_treat_artritis.xlsx	38.6 KB	Apr 12, 2025, 8:34 AM			
s03_treat_artritis.csv	29.9 KB	Apr 19, 2025, 8:00 AM			

Interpretación: El gráfico generado con `ggmice` nos ayuda a visualizar la distribución de la variable "edad_relacion_sexual" en `data_imputada`. Utiliza `geom_jitter` para mostrar puntos individuales y `geom_boxplot` para la mediana y cuartiles. El eje X, "Imputation number", solo muestra el valor 0, correspondiente a los datos observados, sin presencia de puntos en "imputed". Esto sugiere que no se realizaron imputaciones para esta variable. Esto es coherente con análisis previos que indicaban la ausencia total de valores faltantes en el conjunto de datos.

```
{r}data_imputada_1 <- complete(data_imputada, "long", include = TRUE)
```

Observamos la tabla:

```
{r}data_imputada_1 <- data_imputada_1 %>%mutate(imputed = .imp > 0,imputed = factor(imputed,levels = c(F,T),labels = c("Observado", "Imputado")))
```

```
prop.table(table(data_imputada_1$antec_ets, data_imputada_1$imputed),margin = 2)
```

	Observado	Imputado
no	0.93119266	0.93119266
si	0.06880734	0.06880734

Procedimientos adicionales:

```
{r}
```

Environment	History	Connections	Tutorial
R	Global Environment		
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conoc_actit_factor_ca...	218 obs. of 18 variables		
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tabla_multi	Large tbl_regression (6 elements, 9.4 MB)		
tabla_parejas_sex	Large tbl_summary (5 elements, 10.2 MB)		

Files	Plots	Packages	Help	Viewer	Presentation
New Folder	New File	Delete	Rename	More	
Home	estadistica_upsjb_estudio	Estadística	data		
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s03_treat_artritis.csv	29.9 KB	Apr 19, 2025, 8:00 AM			

```
si 0.06880734 0.06880734
```

Procedimientos adicionales:

```
{r}tabla_multi <-data_imputada |>with(glm(antec_ets ~ edad + e_marital + n_educacion + etnia + religion +procedencia + ocupacion + ocupacion_convni + antec_fam + edad_relacion_sexual +parejas_sex + num_hijos + met_anticoncep + actitud + practica,family = binomial(link = "logit"))) |>tbl_regression(exponentiate = TRUE,label = list(e_marital ~ "Estado marital",n_educacion ~ "Nivel de educacion",etnia ~ "Etnia",religion ~ "Religion",procedencia ~ "Procedencia",ocupacion ~ "Ocupacion (a que se dedica)",ocupacion_convni ~ "Ocupacion del conviviente",antec_fam ~ "Antecedente familiar",edad_relacion_sexual ~ "Edad a la que intimo por primera vez",parejas_sex ~ "N° de parejas intimas",num_hijos ~ "Numero de hijos",met_anticoncep ~ "Tipo de metodo anticonceptivo",actitud ~ "Actitud",practica ~ "Tipo de practica")) |>bold(p(t = 0.05)) |>modify_header(estimate = "***OR ajustado***", p.value = "***p valor**")
```

```
{r}tabla_multi
```

Environment	History	Connections	Tutorial
R	Global Environment		
Data			
conoc_actit_factor_ca...	218 obs. of 18 variables		
data_can_cerv	218 obs. of 18 variables		
data_imputada	List of 23		
data_imputada_1	4578 obs. of 20 variables		
input_data	218 obs. of 17 variables		
tabla	Large tbl_merge (4 elements, 20.5 MB)		
tabla_edad_relacion_s...	Large tbl_summary (5 elements, 10.2 MB)		
tabla_edad_relacion_s...	Large tbl_summary (5 elements, 10.2 MB)		
tabla_multi	Large tbl_regression (6 elements, 9.4 MB)		
tabla_parejas_sex	Large tbl_summary (5 elements, 10.2 MB)		

Files	Plots	Packages	Help	Viewer	Presentation
New Folder	New File	Delete	Rename	More	
Home	estadistica_upsjb_estudio	Estadística	data		
Name	Size	Modified			
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s02_treat_artritis.csv	41.7 KB	Apr 12, 2025, 8:34 AM			
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Go to file/function

Addins

Untitled1 * conoc_actit_factor_cancer_cervical *

Render on Save Render Run Publish

Source Visual B I <> Normal Format Insert Table Outline

{r}tabla_multi

Characteristic	OR ajustado	95% CI	p valor
edad	1.04	0.94, 1.16	0.4
Estado marital			
casada	—	—	
conviviente	2.96	0.44, 19.9	0.3
soltera	0.25	0.01, 8.83	0.4
viuda	2.53	0.06, 115	0.6
Nivel de educacion			
primaria	—	—	
secundaria	0.18	0.00, 8.31	0.4

Interpretacion:

Podemos ver los resultados del análisis estadístico, de regresión logística, donde "OR ajustado", intervalos de confianza del 95% (95% CI) y valores p para diversas características. Se observa que la

Chunk 14

Project: (None)

Environment History Connections Tutorial

Import Dataset 34 MiB

R Global Environment

Data

conoc_actit_factor_ca... 218 obs. of 18 variables

data_can_cerv 218 obs. of 18 variables

data_imputada List of 23

data_imputada_1 4578 obs. of 20 variables

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tabla_multi Large tbl_regression (6 elements, 9.4 MB)

tabla_parejas_sex Large tbl_summary (5 elements, 10.2 MB)

Files Plots Packages Help Viewer Presentation

New Folder New File Delete Rename More

Home > estadistica_upsjb_estudio > Estadistica > data

Table with 3 columns: Name, Size, Modified

Table with 4 rows: --practica01.Rproj, .Rhistory, conoc_actit_factor_cancer_cervical.csv, s02_treat_artritis.csv, s02_treat_artritis.Rdata, s02_treat_artritis.sav, s02_treat_artritis.xlsx, s02_treat_artritis.xlsx

Go to file/function

Addins

Untitled1 * conoc_actit_factor_cancer_cervical *

Render on Save Render Run Publish

Source Visual B I <> Normal Format Insert Table Outline

{r}tabla_multi

superior	0.07	0.00, 4.09	0.2
Etnia			
blanco	—	—	
mestizo	0.74	0.09, 6.09	0.8
otro	3.64	0.14, 94.0	0.4
Religion			
catolico	—	—	
evangelista	0.80	0.06, 11.1	0.9
ninguna	35.0	0.80, 1,538	0.065
Procedencia			
rural	—	—	

Interpretacion:

Podemos ver los resultados del análisis estadístico, de regresión logística, donde "OR ajustado", intervalos de confianza del 95% (95% CI) y valores p para diversas características. Se observa que la

Chunk 14

Project: (None)

Environment History Connections Tutorial

Import Dataset 34 MiB

R Global Environment

Data

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Files Plots Packages Help Viewer Presentation

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Table with 3 columns: Name, Size, Modified

Table with 4 rows: --practica01.Rproj, .Rhistory, conoc_actit_factor_cancer_cervical.csv, s02_treat_artritis.csv, s02_treat_artritis.Rdata, s02_treat_artritis.sav, s02_treat_artritis.xlsx, s02_treat_artritis.xlsx

Go to file/function

Addins

Untitled1 * conoc_actit_factor_cancer_cervical *

Render on Save Render Run Publish

Source Visual B I <> Normal Format Insert Table Outline

{r}tabla_multi

rural	—	—	
urbano	2.66	0.41, 17.5	0.3
Ocupacion (a que se dedica)			
ama de casa	—	—	
empleada	0.50	0.04, 6.15	0.6
estudiante	0.00	0.00, Inf	>0.9
otro	1.98	0.15, 26.9	0.6
sin empleo	5.31	0.00, 5,807	0.6
Ocupacion del conviviente			
empleado	—	—	
estudiante	0.00	0.00, Inf	>0.9

Interpretacion:

Podemos ver los resultados del análisis estadístico, de regresión logística, donde "OR ajustado", intervalos de confianza del 95% (95% CI) y valores p para diversas características. Se observa que la

Chunk 14

Project: (None)

Environment History Connections Tutorial

Global Environment

Data

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Files Plots Packages Help Viewer Presentation

New Folder New File Delete Rename More

Home > estadistica_upsjb_estudio > Estadistica > data

Table with 3 columns: Name, Size, Modified

Table with 4 rows: --practica01.Rproj, .Rhistory, conoc_actit_factor_cancer_cervical.csv, s02_treat_artritis.csv, s02_treat_artritis.Rdata, s02_treat_artritis.sav, s02_treat_artritis.xlsx, s02_treat_artritis.xlsx

Untitled1* ×conoc_actit_factor_cancer_cervical ×

Render on SaveRenderRunPublish

SourceVisualB I <> NormalFormatInsertTableOutline

```
{r}
tabla_multi
```

otro	0.50	0.03, 7.51	0.6
sin empleo	0.75	0.00, 274	>0.9
Antecedente familiar			
no	—	—	
si	1.94	0.29, 12.9	0.5
Edad a la que intimo por primera vez	0.60	0.38, 0.92	0.021
N° de parejas intimas	1.67	1.09, 2.55	0.019
Numero de hijos	0.61	0.28, 1.34	0.2
Tipo de metodo anticonceptivo			
aco	—	—	
ampolla de 3 meses	1.52	0.08, 29.6	0.8

Chunk 14 ↓

Quarto ↓

Interpretacion:

Podemos ver los resultados del análisis estadístico, de regresión logística, donde "OR ajustado", intervalos de confianza del 95% (95% CI) y valores p para diversas características. Se observa que la

EnvironmentHistoryConnectionsTutorial

Import Dataset35 MiB

R ×Global Environment ×

Data

- conoc_actit_factor_ca...218 obs. of 18 variables
- data_can_cerv218 obs. of 18 variables
- data_imputadaList of 23
- data_imputada_14578 obs. of 20 variables
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- tablaLarge tbl_merge (4 elements, 20.5 MB)
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FilesPlotsPackagesHelpViewerPresentation

New FolderNew FileDeleteRenameMore

Home ×estadistica_upsjb_estudio ×Estadistica ×data

Name	Size	Modified
..		
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s03_treat_artritis.csv	29.9 KB	Apr 19, 2025, 8:00 AM

Untitled1* ×conoc_actit_factor_cancer_cervical ×

Render on SaveRenderRunPublish

SourceVisualB I <> NormalFormatInsertTableOutline

```
{r}
tabla_multi
```

aco	—	—	
ampolla de 3 meses	1.52	0.08, 29.6	0.8
ampolla mes	2.14	0.12, 37.8	0.6
diu	2.78	0.11, 67.6	0.5
implante_sd	0.01	0.00, 212	0.4
no uso	1.15	0.07, 18.7	>0.9
Actitud			
negativa	—	—	
positiva	0.55	0.07, 4.23	0.6
Tipo de practica			
correcta	—	—	
incorrecta	2.87	0.47, 17.6	0.3

Chunk 14 ↓

Quarto ↓

Interpretacion:

Podemos ver los resultados del análisis estadístico, de regresión logística, donde "OR ajustado", intervalos de confianza del 95% (95% CI) y valores p para diversas características. Se observa que la

EnvironmentHistoryConnectionsTutorial

Import Dataset35 MiB

R ×Global Environment ×

Data

- conoc_actit_factor_ca...218 obs. of 18 variables
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FilesPlotsPackagesHelpViewerPresentation

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Home ×estadistica_upsjb_estudio ×Estadistica ×data

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Untitled1* ×conoc_actit_factor_cancer_cervical ×

Render on SaveRenderRunPublish

SourceVisualB I <> NormalFormatInsertTableOutline

```
{r}
tabla_multi
```

positiva	0.55	0.07, 4.23	0.6
Tipo de practica			
correcta	—	—	
incorrecta	2.87	0.47, 17.6	0.3

Abbreviations: CI = Confidence Interval, OR = Odds Ratio

Chunk 14 ↓

Quarto ↓

Interpretacion:

Podemos ver los resultados del análisis estadístico, de regresión logística, donde "OR ajustado", intervalos de confianza del 95% (95% CI) y valores p para diversas características. Se observa que la "Edad a la que intimaron por primera vez" (OR=0.60, p=0.021) y el "N° de parejas intimas" (OR=1.67, p=0.019) son las únicas variables que muestran una asociación estadísticamente significativa (p<0.05). Las demás variables no muestran significancia, como "Estado marital" o "Nivel de educación".

CONCLUSION:

Es así que lleamos que en retrospectiva, el análisis de datos completo, donde no hay valores faltantes en ninguna de las 17 variables, como lo confirman tanto las tablas descriptivas, como la visualización de patrones de datos faltantes con ggmice. Aunque se exploró la imputación de datos mediante la función mice(), los gráficos de distribución para "parejas_sex" y "edad_relacion_sexual" validan la ausencia de imputaciones, al mostrar únicamente datos "observados". Finalmente, nuestro análisis de regresión destaca una asociación estadísticamente significativa (p<0.05) únicamente para "Edad a la que intimaron por primera vez" y "N° de parejas intimas".

EnvironmentHistoryConnectionsTutorial

Import Dataset35 MiB

R ×Global Environment ×

Data

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FilesPlotsPackagesHelpViewerPresentation

New FolderNew FileDeleteRenameMore

Home ×estadistica_upsjb_estudio ×Estadistica ×data

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