

RStudio

Dynamic Documents

Dr Gina La Hera Fuentes (MSc Biostatistics)

Senior Lecturer UNSW

PhD Candidate UoN

Biosketch

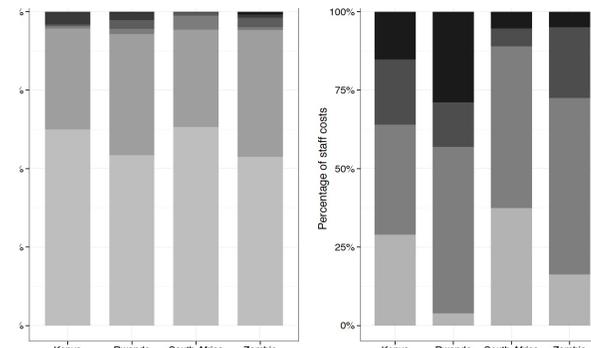
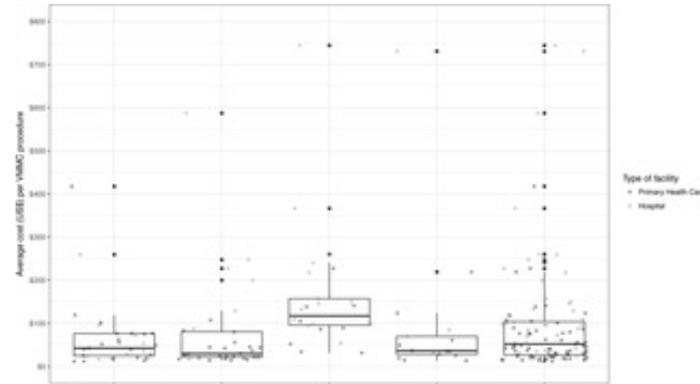
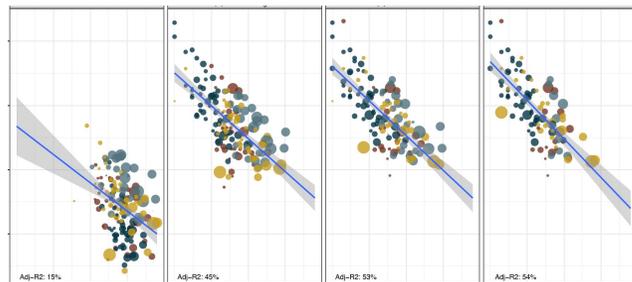
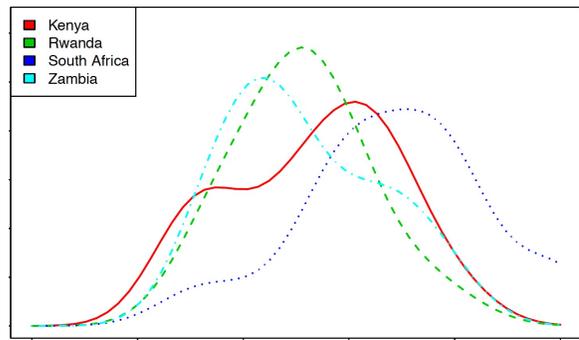
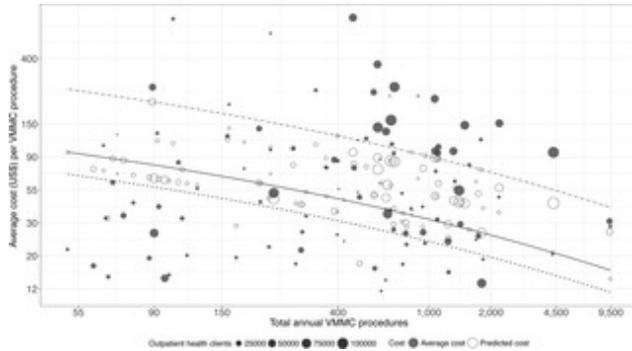
- Gina La Hera Fuentes is a Medical Doctor with a Master in Biostatistics and currently a PhD Candidate in Health Economics at the University of Newcastle.
- She received her MD and her PHS degrees from the University of San Andrés - Bolivia, and her MSc Biostatistics from the INSP - Mexico.
- She has working experience in research, implementation science, public health policy, project management, data analysis and human resources training in areas of HIV/AIDS, Non-Communicable Diseases and risk factors.
- In 2014 she started working at the department of Economics of the Centre for Health Systems Research - National Institute of Public Health – INSP - Mexico and participating in research of Costing analysis, Economic evaluation of projects from multiple countries (Mexico, Brazil, Kenya, Rwanda, Nigeria, Zambia, South Africa and Malawi).
- Since 2019, to date, she has worked with the University of Newcastle-Australia on a smoking cessation project for Aboriginal population and with the Rural Clinical School from the University of New South Wales as a Senior Lecturer and Research Coordinator.

What are
they?

**BEWARE
LIVING
DOCUMENT!**



Advantages



- Open Source
- Flexible
- Comparable to other software, often better
- Excellent user community
- Exciting new packages and applications
- Attractive graphics

Environment

Rscripts = entries
(R's "DO file")

Console = exits

The screenshot displays the RStudio interface. The top-left pane shows R code for a ggplot2 scatter plot. The top-right pane shows the Environment pane with a table of objects. The bottom-left pane shows the Console with R commands. The bottom-right pane shows a scatter plot of Income vs. Expenditure.

```
116 >>> {r, echo = TRUE }
117 ggplot(data, aes(x=income, y=totexp,
size=educyr)) +
geom_point(aes(colour=factor(female)),
alpha=I(0.5), size=1) +
scale_x_continuous(
name="Expenditure")+
scale_y_continuous(name="Income")
+theme_bw()+ scale_color_brewer(
name="Sex", palette = c("Paired"))
118
119 >>>
```

Object	Details
data	3064 obs. of 34 variables
data_female	2 obs. of 3 variables
table1	2 obs. of 3 variables

```
> kable(table1, digits=2, caption = "Descriptive table Female")
>
> ggplot(data, aes(x=income, y=totexp, size=educyr)) + geom_point(aes(colour=factor(female)), alpha=I(0.5), size=1) + scale_x_continuous( name="Expenditure")+ scale_y_continuous(name="Income") +theme_bw()+ scale_color_brewer( name="Sex", palette = c("Paired"))
>
> ggplot(data, aes(x=income, y=totexp, size=educyr)) + geom_point(aes(colour=factor(female)), alpha=I(0.5), size=1) + scale_x_continuous( name="Expenditure")+ scale_y_continuous(name="Income") +theme_bw()+ scale_color_brewer( name="Sex", palette = c("Paired"))
>
```

"global environment" = elements of data

Files, diagrams, help files

How to start?

1. Open a document and add title and format of output
2. Write all the information to be codified and to generate figures and tables between ````` and ````` in 'chunks'
3. Specify how you want to display the information in `{}` after `````
4. All the lines included after the chunk will be displayed as text

Today's activity

Learning while doing!

- Open the Rmd file

References

- Crawley (2007). The R book. WileyPublishing, Sussex.
- Ihaka (nd). The R project: a brief history and thoughts about the future. Access: <https://www.stat.auckland.ac.nz/~ihaka/downloads/Massey.pdf>
- Matloff (2009). The art of R programming. Access: http://www.bagualu.net/wordpress/wp-content/uploads/2015/10/The_Art_of_R_Programming.pdf