

pregnant women presenting at antenatal clinics (ANC) who were tested for HIV

2023-04-30

Loading Data

```
# Load required packages
library(tidyverse)
```

```
## — Attaching core tidyverse packages — tidyverse 2.0.0 —
## ✓ dplyr      1.1.2      ✓ readr      2.1.4
## ✓ forcats    1.0.0      ✓ stringr    1.5.0
## ✓ ggplot2     3.4.2      ✓ tibble     3.2.1
## ✓ lubridate  1.9.2      ✓ tidyr      1.3.0
## ✓ purrr      1.0.1
## — Conflicts — tidyverse_conflicts() —
## ✗ dplyr::filter() masks stats::filter()
## ✗ dplyr::lag()     masks stats::lag()
## i Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
library(ggplot2)
library(plotly)
```

```
##
## Attaching package: 'plotly'
##
## The following object is masked from 'package:ggplot2':
##
##   last_plot
##
## The following object is masked from 'package:stats':
##
##   filter
##
## The following object is masked from 'package:graphics':
##
##   layout
```

```
library(scales)
```

```
##
## Attaching package: 'scales'
##
## The following object is masked from 'package:purrr':
##
##     discard
##
## The following object is masked from 'package:readr':
##
##     col_factor
```

```
library(ggthemes)
library(maptools)
```

```
## Loading required package: sp
## Checking rgeos availability: TRUE
## Please note that 'maptools' will be retired during 2023,
## plan transition at your earliest convenience;
## some functionality will be moved to 'sp'.
```

```
library(dplyr)
library(maps)
```

```
##
## Attaching package: 'maps'
##
## The following object is masked from 'package:purrr':
##
##     map
```

```
library(rnatualearth)
library(rworldmap)
```

```
## ### Welcome to rworldmap ###
## For a short introduction type :   vignette('rworldmap')
```

```
library(countrycode)
```

```
# Read in data
data <- read.csv("unicef_indicator_two.csv", header = TRUE , stringsAsFactors = FALSE)
head(data)
```

```
##      region alpha_2_code alpha_3_code numeric_code
## 1 Afghanistan      AF      AFG           4
## 2 Afghanistan      AF      AFG           4
## 3 Afghanistan      AF      AFG           4
## 4 Afghanistan      AF      AFG           4
## 5 Afghanistan      AF      AFG           4
## 6 Afghanistan      AF      AFG           4
##
indicator
## 1 Reported number of pregnant women presenting at antenatal clinics (ANC) who were tested for
HIV or already knew their HIV positive status
## 2 Reported number of pregnant women presenting at antenatal clinics (ANC) who were tested for
HIV or already knew their HIV positive status
## 3 Reported number of pregnant women presenting at antenatal clinics (ANC) who were tested for
HIV or already knew their HIV positive status
## 4 Reported number of pregnant women presenting at antenatal clinics (ANC) who were tested for
HIV or already knew their HIV positive status
## 5 Reported number of pregnant women presenting at antenatal clinics (ANC) who were tested for
HIV or already knew their HIV positive status
## 6 Reported number of pregnant women presenting at antenatal clinics (ANC) who were tested for
HIV or already knew their HIV positive status
##   time_period obs_value
## 1      2015      1900
## 2      2017      2500
## 3      2018         0
## 4      2019         0
## 5      2020         0
## 6      2021         80
```

Map of the world

```
# Convert alpha_2_code to ISO3 country codes
data$ISO3 <- countrycode(sourcevar = data$alpha_2_code, origin = "iso2c", destination = "iso3c")
```

```
## Warning in countrycode_convert(sourcevar = sourcevar, origin = origin, destination = dest, :
Some values were not matched unambiguously:
```

```

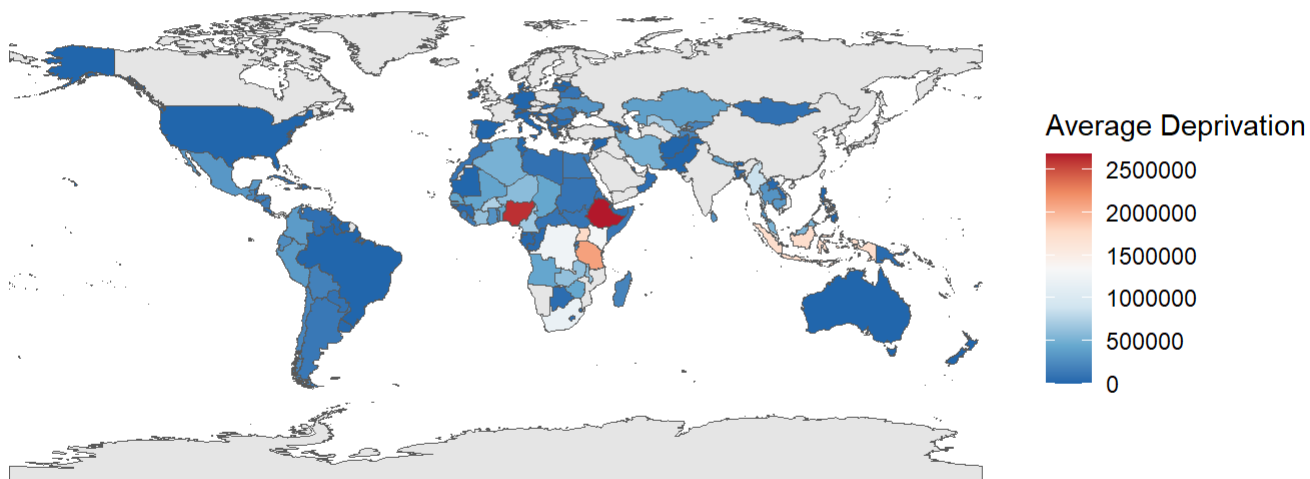
# Summarize data by country
deprivation <- data %>%
  group_by(ISO3) %>%
  summarise(avg_deprivation = mean(obs_value, na.rm = TRUE))

# Join deprivation data to world map data
world_map <- ne_countries(scale = "medium", returnclass = "sf") %>%
  select(iso_a3, geometry) %>%
  left_join(deprivation, by = c("iso_a3" = "ISO3"))

# Create map plot
ggplot(world_map) +
  geom_sf(aes(fill = avg_deprivation)) +
  scale_fill_distiller(palette = "RdBu", na.value = "grey90", direction = -1) + # or direction=1
  +
  theme_void() +
  labs(title = "Average pregnant women presenting at antenatal clinics (ANC) who were tested for HIV",
        subtitle = "Data from UNICEF",
        fill = "Average Deprivation")

```

Average pregnant women presenting at antenatal clinics (ANC) who were tested for HIV
Data from UNICEF



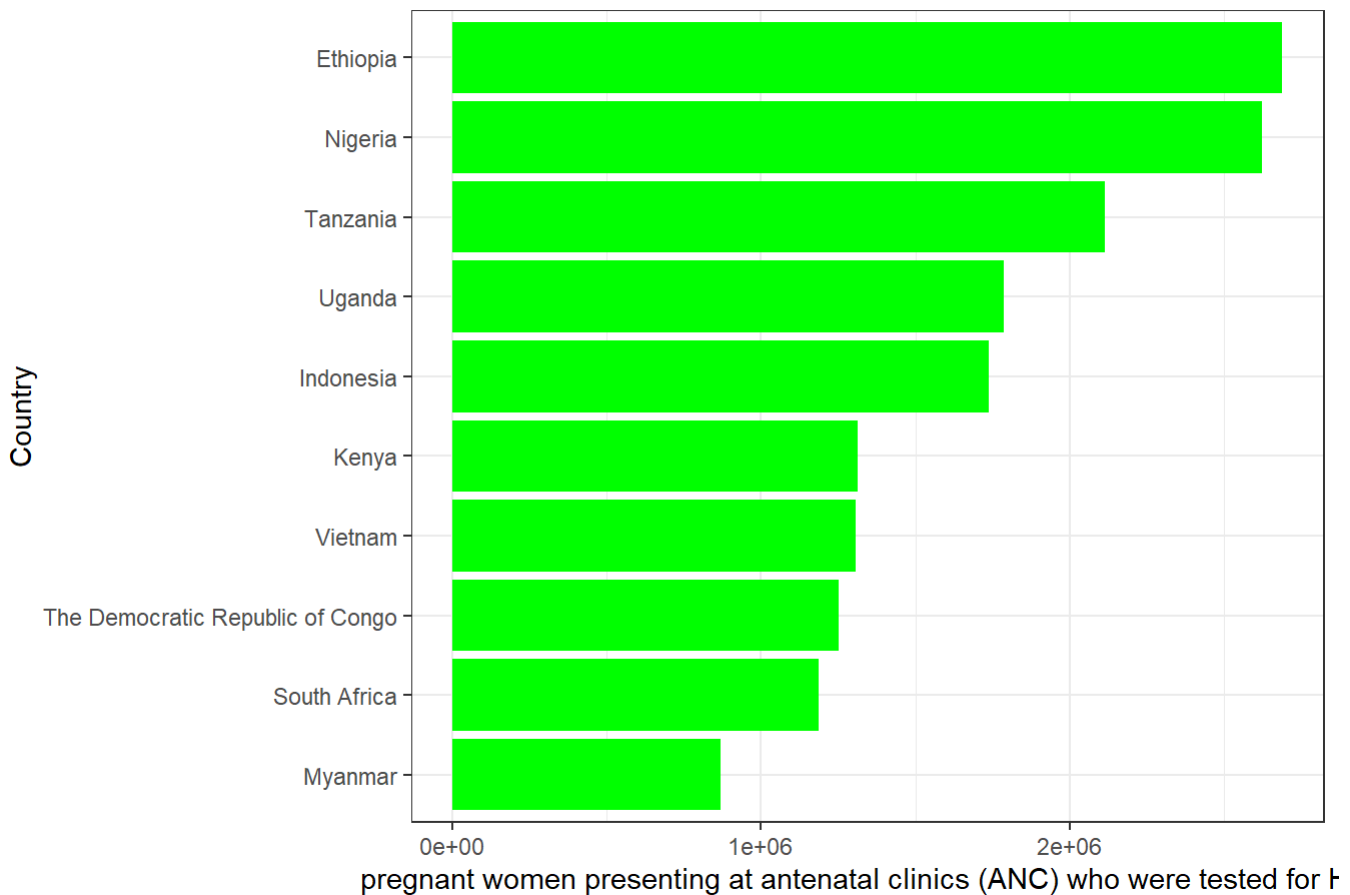
the Bar_Chart

```
bar_data <- data %>%
  group_by(region) %>%
  summarise(avg_deprivation = mean(obs_value)) %>%
  arrange(desc(avg_deprivation)) %>%
  head(10)

bar_plot <- ggplot(bar_data, aes(x = reorder(region, avg_deprivation), y = avg_deprivation)) +
  geom_bar(stat = "identity", fill = "green") +
  coord_flip() +
  labs(title = "Top 10 Countries with the Highest pregnant women presenting at antenatal clinics
(ANC) who were tested for HIV",
       x = "Country", y = "pregnant women presenting at antenatal clinics (ANC) who were tested
for HIV") +
  theme_bw()

bar_plot
```

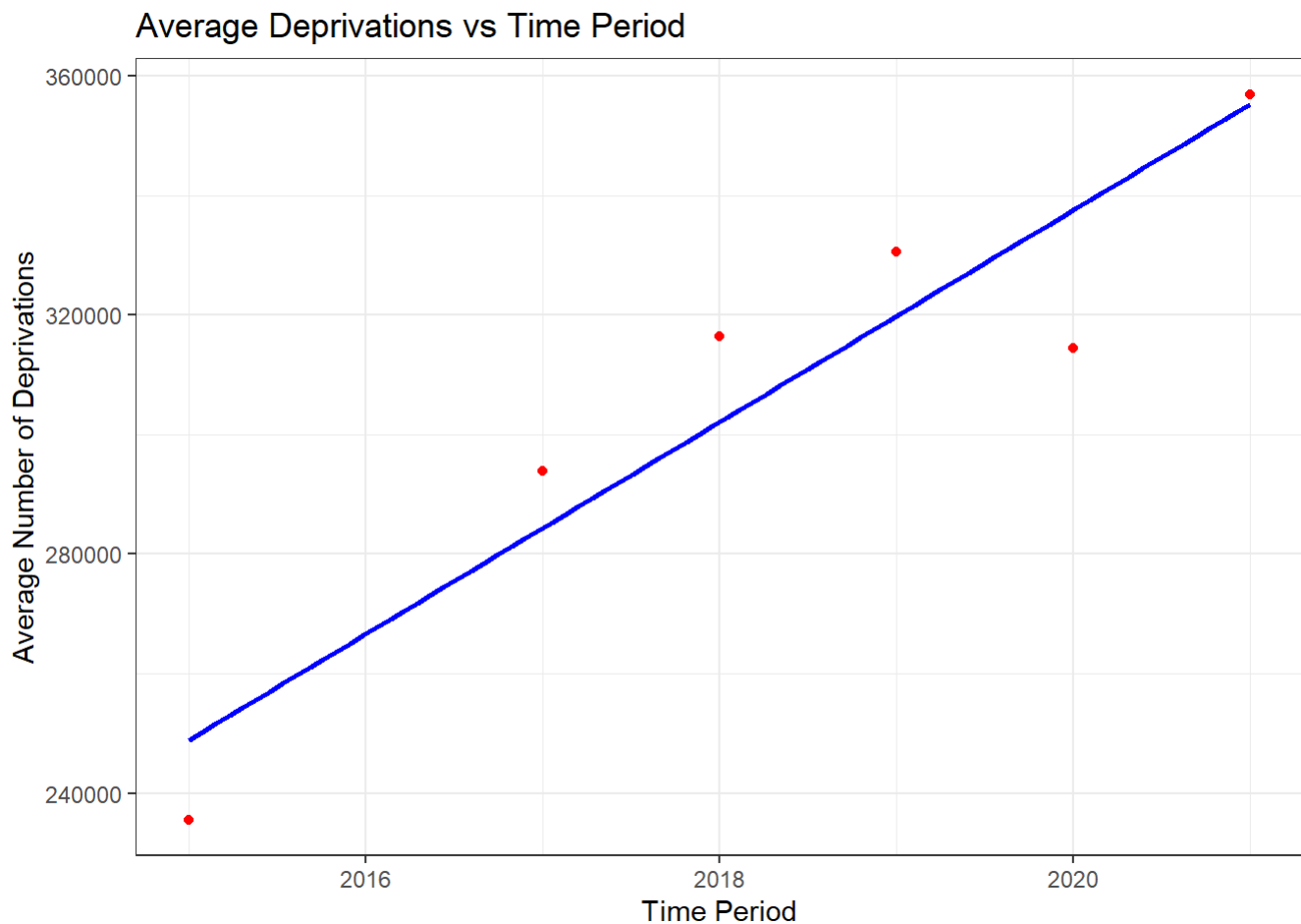
Top 10 Countries with the Highest pregnant women presentin



Scatter Plot

```
scatter_data <- data %>%  
  group_by(time_period) %>%  
  summarise(avg_deprivation = mean(obs_value))  
  
scatter_plot <- ggplot(scatter_data, aes(x = time_period, y = avg_deprivation)) +  
  geom_point(color = "red") +  
  geom_smooth(method = "lm", se = FALSE, color = "blue") +  
  labs(title = "Average Deprivations vs Time Period",  
       x = "Time Period", y = "Average Number of Deprivations") +  
  theme_bw()  
  
scatter_plot
```

```
## `geom_smooth()` using formula = 'y ~ x'
```



Time Series Plot

```
data %>%
  group_by(time_period) %>%
  summarise(avg_deprivations = mean(obs_value)) %>%
  ggplot(aes(x = time_period, y = avg_deprivations)) +
  geom_line(size = 1) +
  scale_color_viridis_d() +
  labs(title = "pregnant women presenting at antenatal clinics (ANC) who were tested for HIV",
       x = "Year",
       y = "Average Number of Deprivations",
       color = "Region") +
  theme_minimal()
```

```
## Warning: Using `size` aesthetic for lines was deprecated in ggplot2 3.4.0.
## i Please use `linewidth` instead.
## This warning is displayed once every 8 hours.
## Call `lifecycle::last_lifecycle_warnings()` to see where this warning was
## generated.
```

