Assessment

Stella Doherty

2024-11-01

Link to website: My Github website

Topic (focus)

Trends in prescriptions of SSRI antidepressants within different areas of Scotland pre-covid (july 2019) versus peak-covid (july 2020).

- I am interested to see if there is certain regions in Scotland, such as places further North, that prescribe more antidepressants and it is interesting to see if covid had an impact on this.

```
library(tidyverse)
library(janitor)
library(gt)
library(here)
```

load packages

```
data_jul2019 <- read_csv("https://www.opendata.nhs.scot/dataset/84393984-14e9-4b0d-a797-b288db64d088/res
  clean_names()

data_jul2020 <- read_csv("https://www.opendata.nhs.scot/dataset/84393984-14e9-4b0d-a797-b288db64d088/res
  clean_names()
```

Load data sets January - December 2019

```
ssri_data_jul2019 <- data_jul2019 %>%
  filter(!is.na(bnf_item_description), str_detect(bnf_item_description, "FLUOXETINE|CITALOPRAM|ESCAITALO
  select(hbt2014, bnf_item_description, paid_quantity, paid_date_month) %>%
  rename(hbt = "hbt2014")

ssri_data_jul2020 <- data_jul2020 %>%
```

```
  filter(!is.na(bnf_item_description), str_detect(bnf_item_description, "FLUOXETINE|CITALOPRAM|ESCAITALO
  select(hbt, bnf_item_description, paid_quantity, paid_date_month)

joined_jul_data <- full_join(ssri_data_jul2019, ssri_data_jul2020) %>%
  mutate(paid_date_month = ym(paid_date_month),
         year = year(paid_date_month))
```

Filter July data sets. Select for SSRI antidepresants: Fluoxetine, citalopram, escitalopram, paroxetine, sertraline. Join both.

```
health_boards <- read_csv("https://www.opendata.nhs.scot/dataset/9f942fdb-e59e-44f5-b534-d6e17229cc7b/r

hb_general_health <- read_csv(here("data", "UV302_general_health.csv"), skip = 10) %>%
  clean_names() %>% # remove the first row (with extraneous information)
  select(-x5) %>%  # remove the final (unnecessary) column
  rename(HBName = "health_board_area_2019",
         hb_population = count) %>%
  # filter the data so that we get the population of the entire health board
  filter(general_health == "All people") %>%
  # select only the relevant columns
  select(HBName, hb_population) %>%
  # change health board names so they match the prescription data
  mutate(HBName = paste("NHS", HBName))

joined_hb_data <- health_boards %>%
  full_join(hb_general_health, by = "HBName") %>%
  select(HB, HBName, hb_population) %>%
  rename(hbt = "HB")
```

Health board data and general census data. Joined.

```
joined_hb_jul_data <- full_join(joined_hb_data, joined_jul_data) %>%
  na.omit()
```

Join HB data and July data sets

```
quantity_sum_jul_data <- joined_hb_jul_data %>%
  group_by(year, bnf_item_description, HBName) %>%
  summarise(quantity_sum = sum(paid_quantity))

wide_jul_data <- quantity_sum_jul_data %>%
  pivot_wider(names_from = bnf_item_description, values_from = quantity_sum)

ssri_sums <- wide_jul_data %>%
```

```
  ungroup() %>%
  mutate(Citalopram = rowSums(select(., starts_with("CITALOPRAM")), na.rm = TRUE),
         Escaitalopram = rowSums(select(., starts_with("ESCITALOPRAM")), na.rm = TRUE),
         Fluoxetine = rowSums(select(., starts_with("FLUOXETINE")), na.rm = TRUE),
         Paroxetine = rowSums(select(., starts_with("PAROXETINE")), na.rm = TRUE),
         Sertraline = rowSums(select(., starts_with("SERTRALINE")), na.rm = TRUE))

long_ssri_sums <- ssri_sums %>%
  select(HBName, year, Citalopram, Escaitalopram, Fluoxetine, Paroxetine, Sertraline) %>%
  pivot_longer(cols = Citalopram:Sertraline, names_to = "ssri", values_to = "sum")
```

Obtain sum of each type of SSRI antidepressant

```
long_ssri_sums %>%
  filter(HBName %in% c("NHS Lothian", "NHS Greater Glasgow and Clyde")) %>%
  group_by(year, HBName) %>%
  gt() %>%
  cols_label(HBName = "Health Board",
             year = "July Year",
             ssri = "SSRI antidepressant",
             sum = "Total prescriptions of SSRI antidepressant") %>%
  cols_align(align = "center",
             columns = c("sum", "year")) %>%
  fmt_number(columns = sum, decimals = 0) %>%
  summary_rows(columns = sum,
               fns = list("Total" = ~sum(., na.rm = TRUE))) %>%
  tab_header(title = "SSRI antidepressant prescriptions comparing pre-covid (July 2019) and peak-covid
             subtitle = "Data from NHS Lothian and NHS Greater Glasgow and Clyde")
```

Example: distribution in NHS Lothian and NHS Greater Glasgow and Clyde in both years in July

SSRI antidepressant prescriptions comparing pre-covid (July 2019) and peak-covid (July 2020)

Data from NHS Lothian and NHS Greater Glasgow and Clyde

	SSRI antidepressant	Total prescriptions of SSRI antidepressant
2019 - NHS Greater Glasgow and Clyde		
	Citalopram	889,620
	Escaitalopram	34,015
	Fluoxetine	1,073,674
	Paroxetine	105,015
	Sertraline	1,365,299
Total	—	3467623
2019 - NHS Lothian		

	Citalopram	546,369
	Escaitalopram	33,130
	Fluoxetine	822,664
	Paroxetine	120,793
	Sertraline	564,365
Total	—	2087321
2020 - NHS Greater Glasgow and Clyde		
	Citalopram	873,396
	Escaitalopram	36,784
	Fluoxetine	1,107,819
	Paroxetine	104,049
	Sertraline	1,502,086
Total	—	3624134
2020 - NHS Lothian		
	Citalopram	553,647
	Escaitalopram	35,940
	Fluoxetine	864,214
	Paroxetine	115,510
	Sertraline	650,018
Total	—	2219330

Next steps:

- plot a graph to show the comparison between the 2 years for each SSRI
- Map distribution of SSRI across the NHC health boards - one for each year