Comparing Program Outcomes with ggplot2

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1 Load the Data

```
load("social_service_agency.RData")
```

2 Load the Libraries

```
library(ggplot2) # beautiful graphs

library(ggthemes) # beautiful themes
```

3 Basic Graph (x is program; y is mental health)

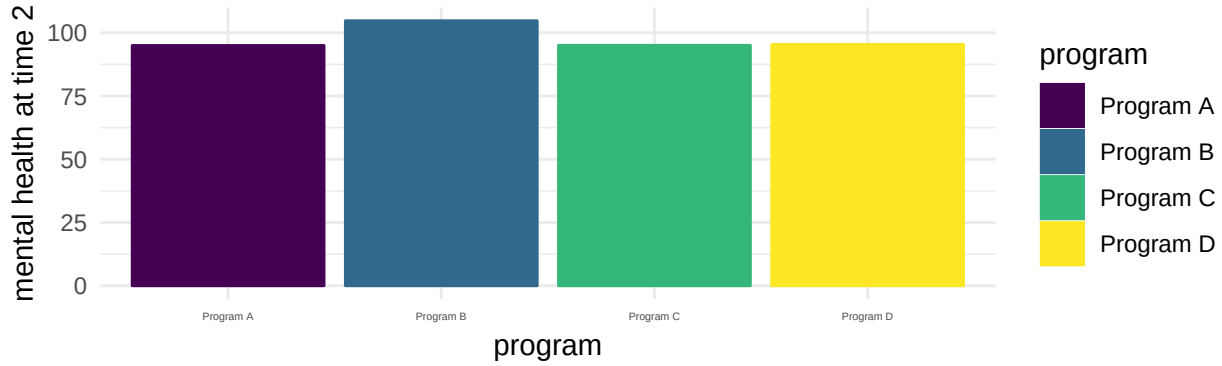
```
myplot1 <- ggplot(clients, # the data I am using
                  aes(x = program,
                      y = mental_health_T2, # my variables
                      color = program, # color is also program
                      fill = program)) + # fill is also program
  labs(y = "mental health at time 2") +
  scale_color_viridis_d() + # beautiful colors
  scale_fill_viridis_d() + # beautiful fills
```

```
  theme_minimal() +
  theme(axis.text.x = element_text(size = rel(.5))) # smaller labels
```

4 Add Geometries

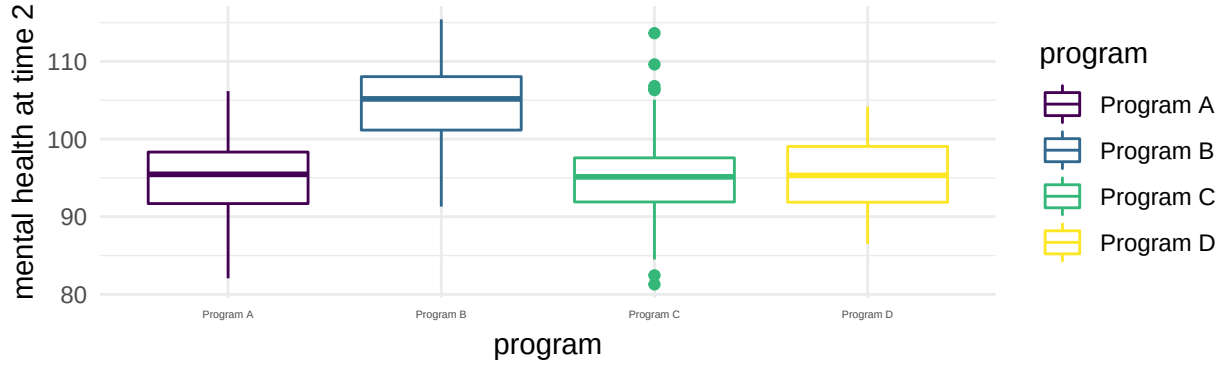
4.1 Column Chart

```
myplot1 + stat_summary(fun.y = "mean",
                       geom = "bar")
```



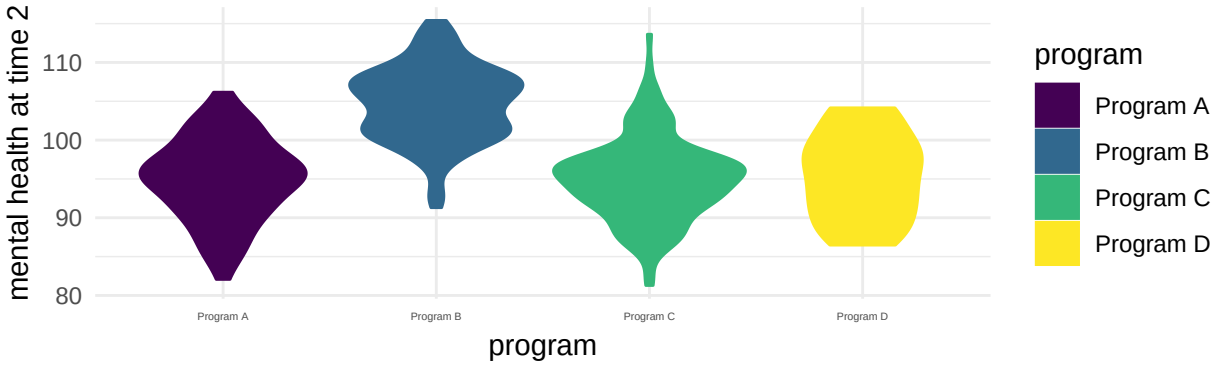
4.2 Boxplot

```
myplot1 + geom_boxplot(fill="white")
```



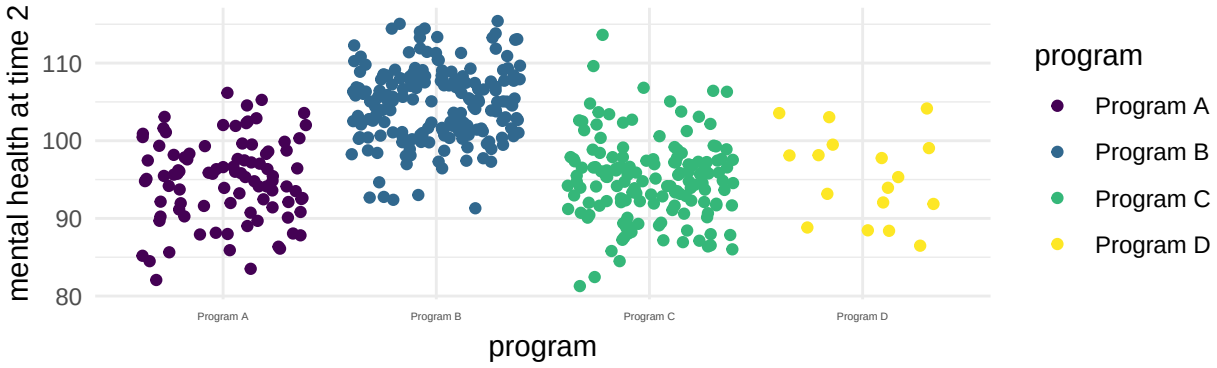
4.3 Violin Plot

```
myplot1 + geom_violin()
```



4.4 Jittered Points

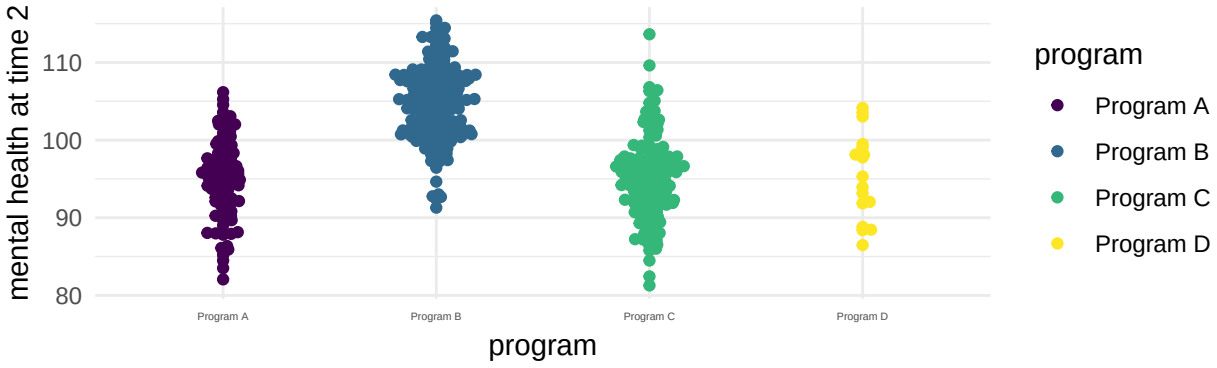
```
myplot1 + geom_jitter()
```



4.5 Beeswarm Plot

```
library(ggbeeswarm) # beeswarm geometry

myplot1 + geom_beeswarm()
```



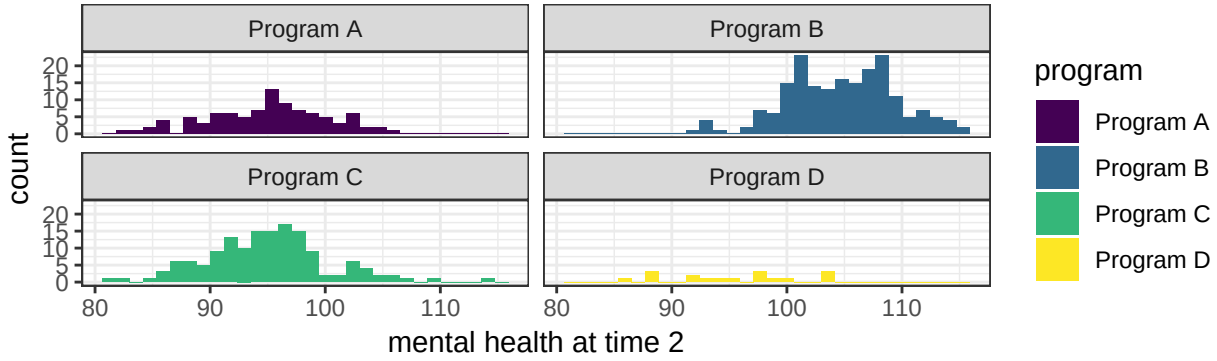
5 Alternate Approach (x is mental health; facet wrap on program)

```
myplot2 <- ggplot(clients, # the data I am using
                  aes(x = mental_health_T2, # my variable
                      fill = program)) + # fill is program
  facet_wrap(~program) + # facet on this variable
  labs(x = "mental health at time 2") +
  scale_color_viridis_d() + # beautiful colors
  scale_fill_viridis_d() + # beatiful fills
  theme_bw()
```

6 Add Geometries

6.1 Histogram

```
myplot2 + geom_histogram()
```



6.2 Density

```
myplot2 + geom_density()
```