

MODEL

Allison Shi

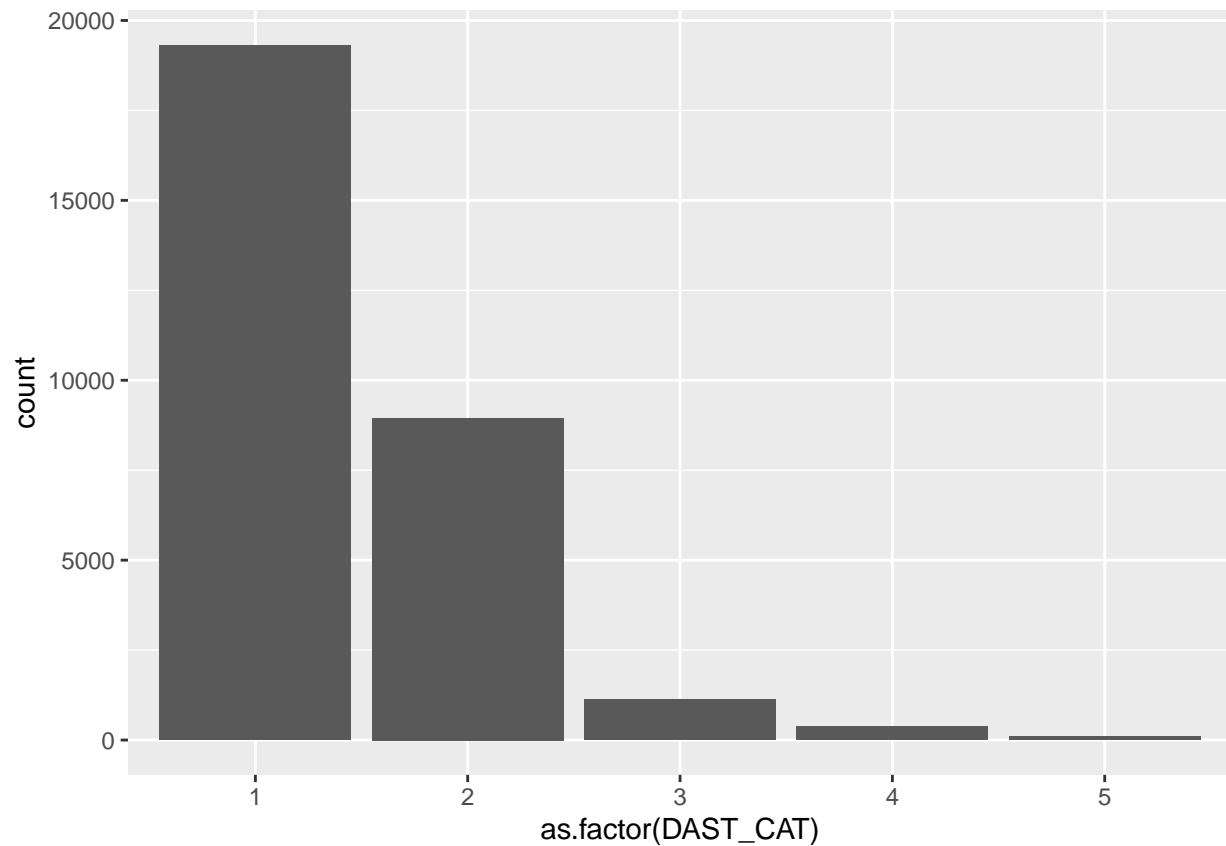
‘r Sys.Date()

```
library(tidyverse)
library(knitr)
library(broom)
library(nnet) # for multinomial logistic regression
library(patchwork)
```

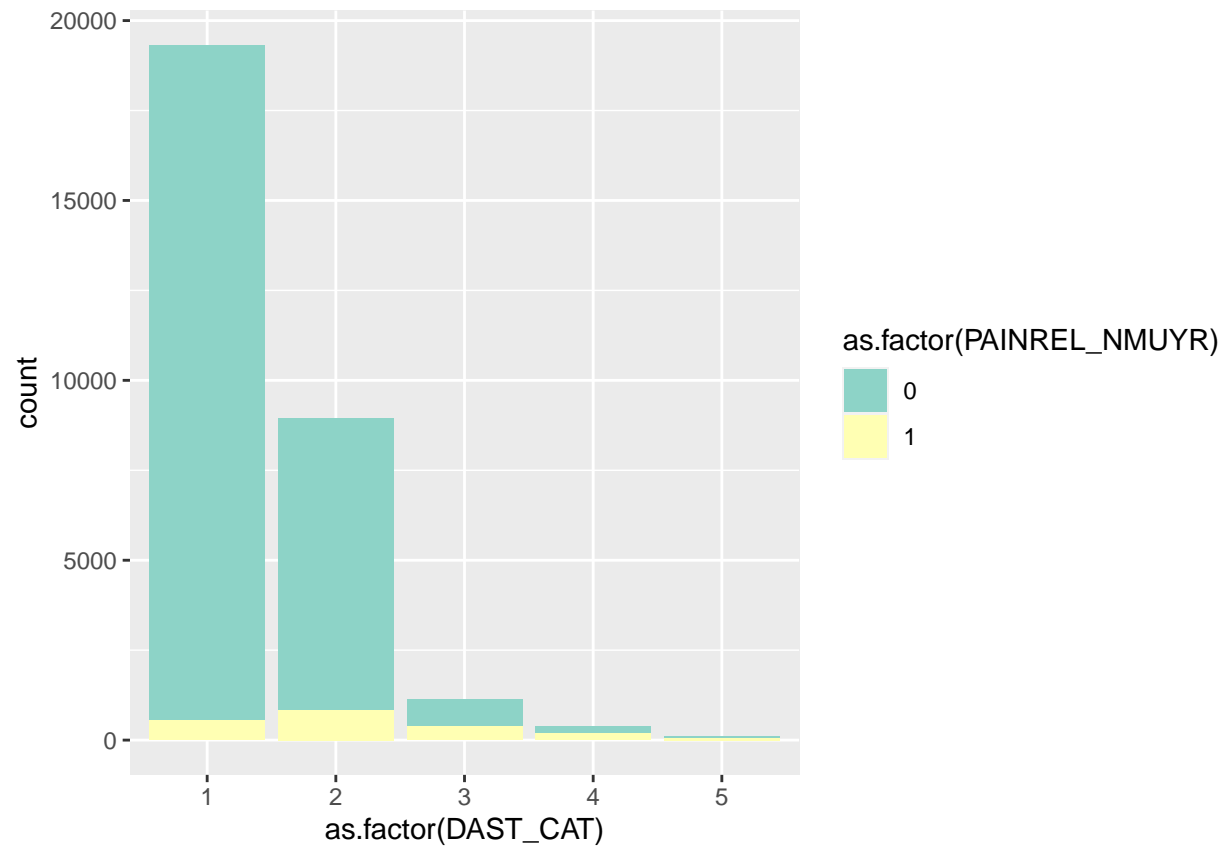
```
us_19 <- read_csv('~/.df_data/US/us_19.csv')
#glimpse(us_19)
```

EDA

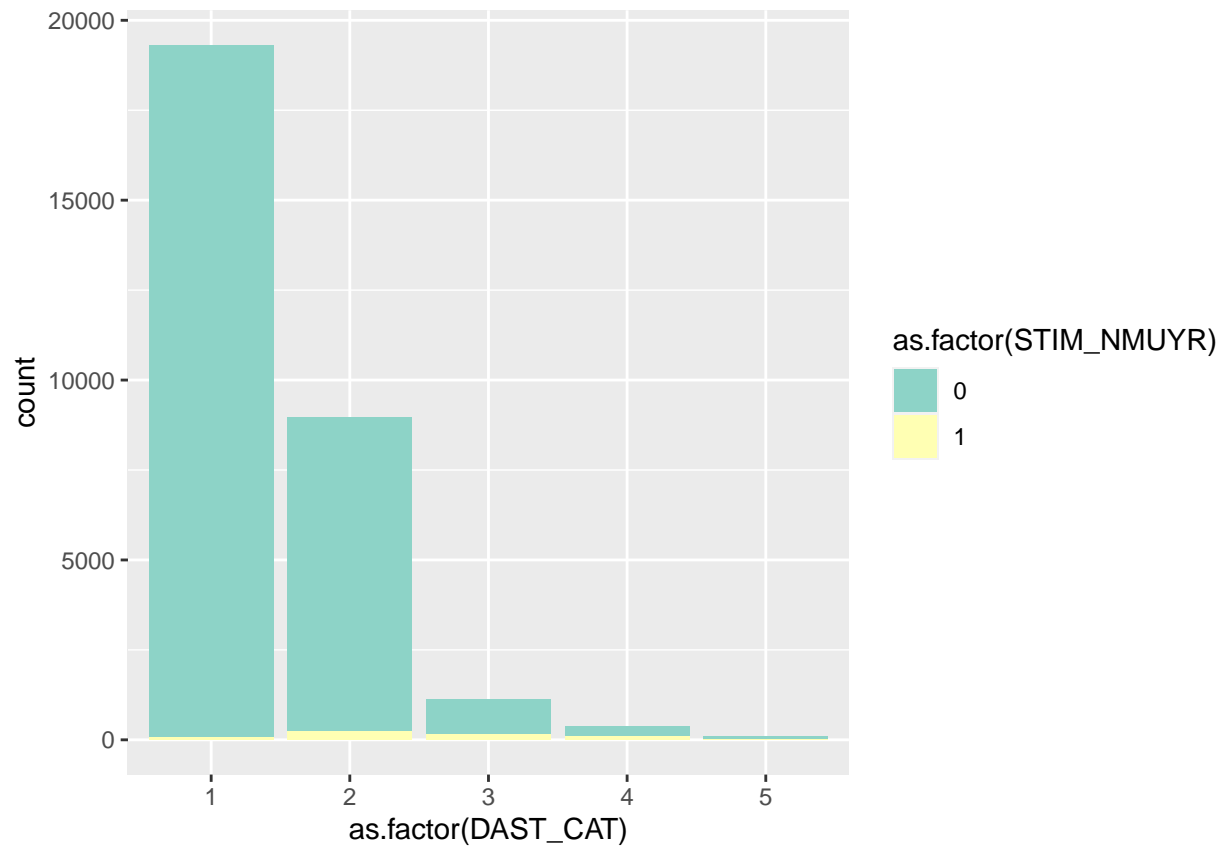
```
ggplot(data = us_19, aes(x = as.factor(DAST_CAT))) +
  geom_bar()
```



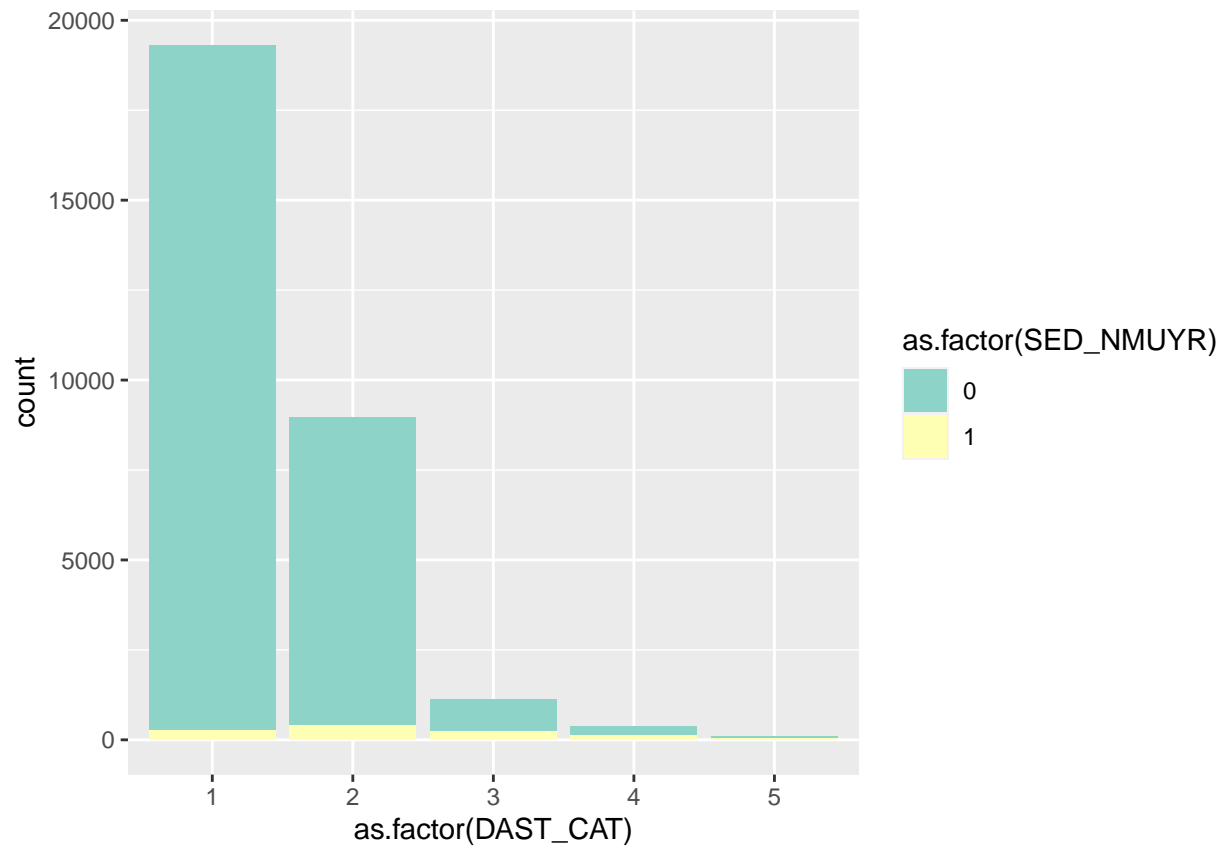
```
ggplot(data = us_19, aes(x = as.factor(DAST_CAT), fill = as.factor(PAINREL_NMUYR))) +  
  geom_bar() +  
  scale_fill_brewer(palette="Set3")
```



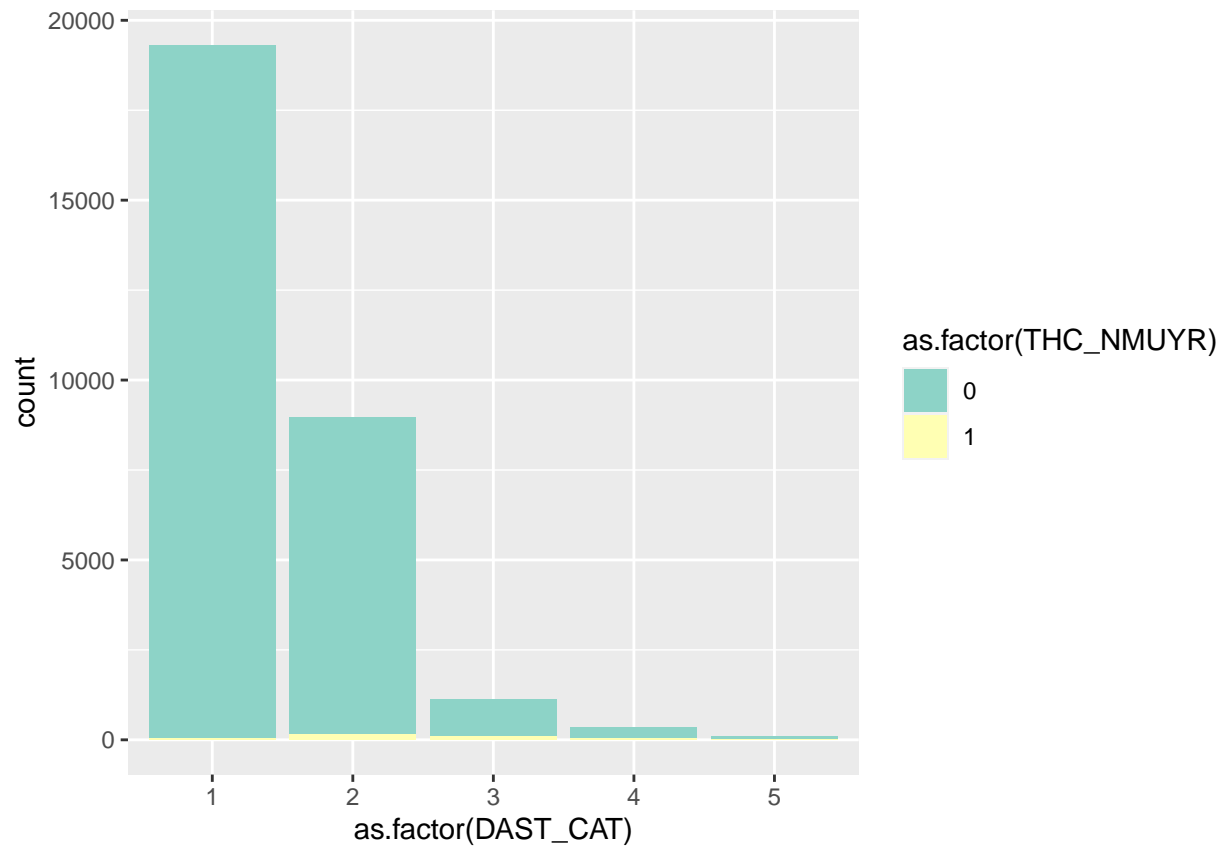
```
ggplot(data = us_19, aes(x = as.factor(DAST_CAT), fill = as.factor(STIM_NMUYR))) +  
  geom_bar() +  
  scale_fill_brewer(palette="Set3")
```



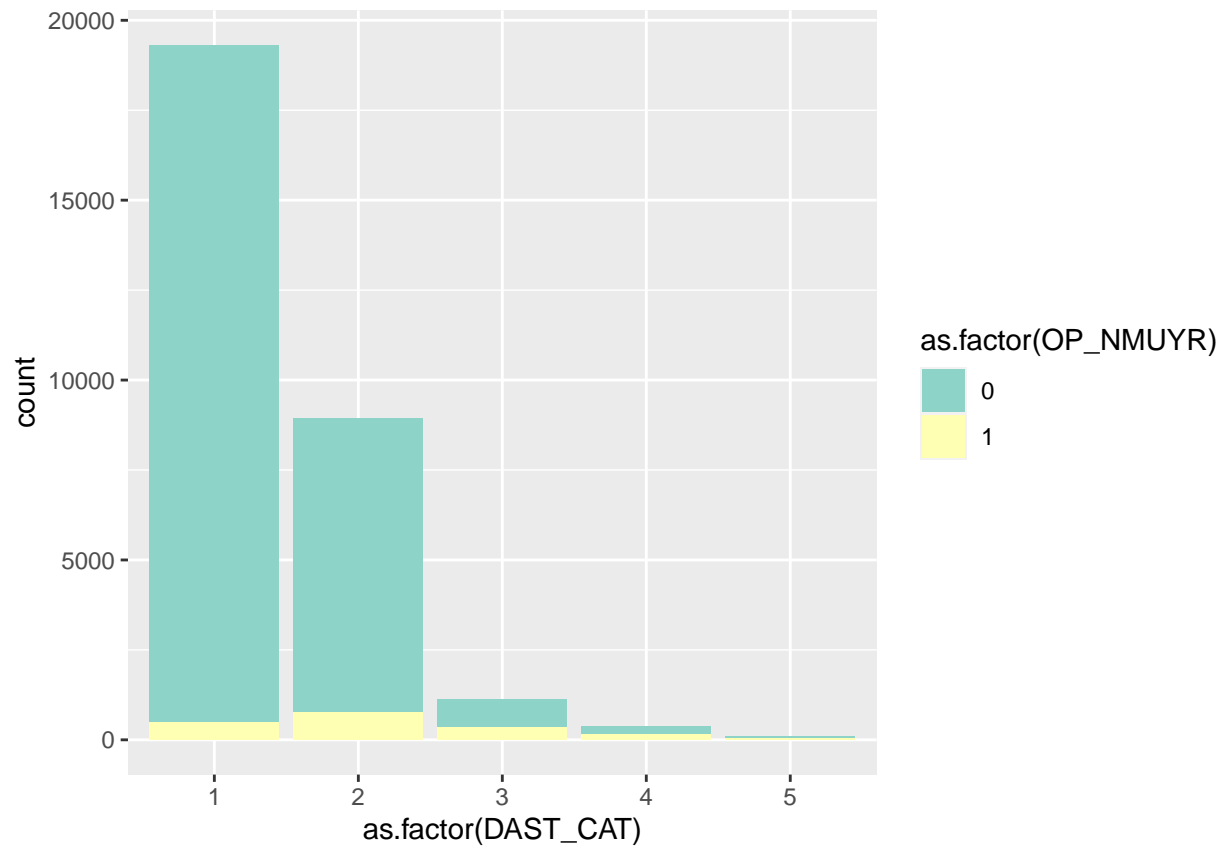
```
ggplot(data = us_19, aes(x = as.factor(DAST_CAT), fill = as.factor(STIM_NMUYR))) +  
  geom_bar() +  
  scale_fill_brewer(palette="Set3")
```



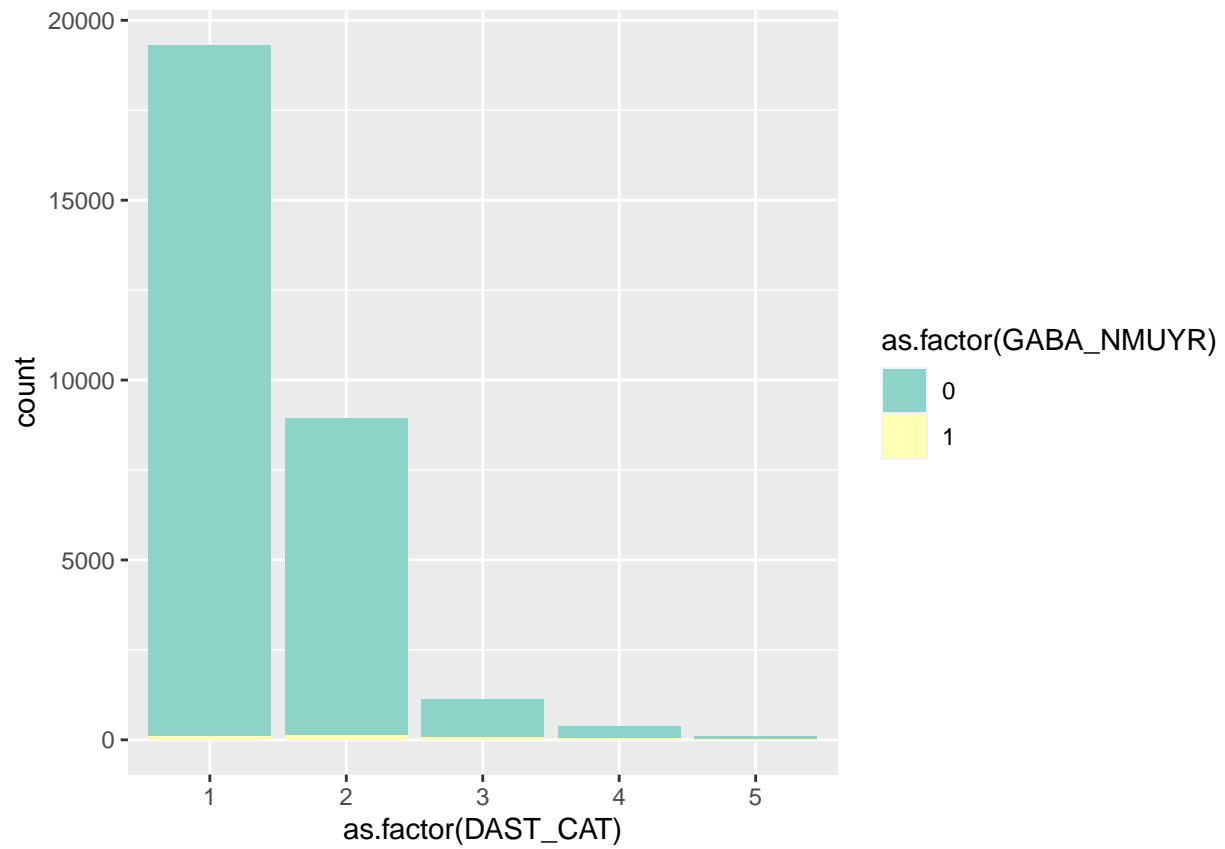
```
ggplot(data = us_19, aes(x = as.factor(DAST_CAT), fill = as.factor(THC_NMUYR))) +  
  geom_bar() +  
  scale_fill_brewer(palette="Set3")
```



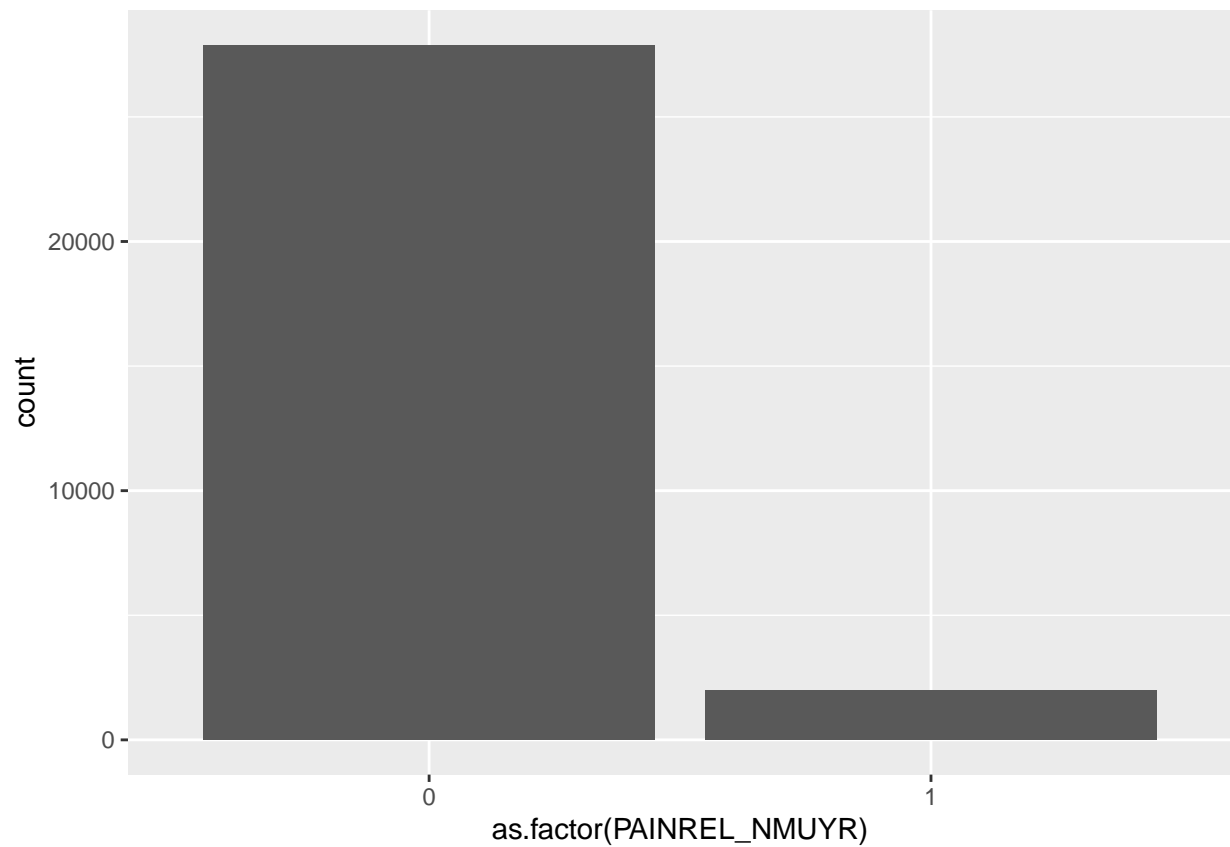
```
ggplot(data = us_19, aes(x = as.factor(DAST_CAT), fill = as.factor(OP_NMUYR))) +  
  geom_bar() +  
  scale_fill_brewer(palette="Set3")
```



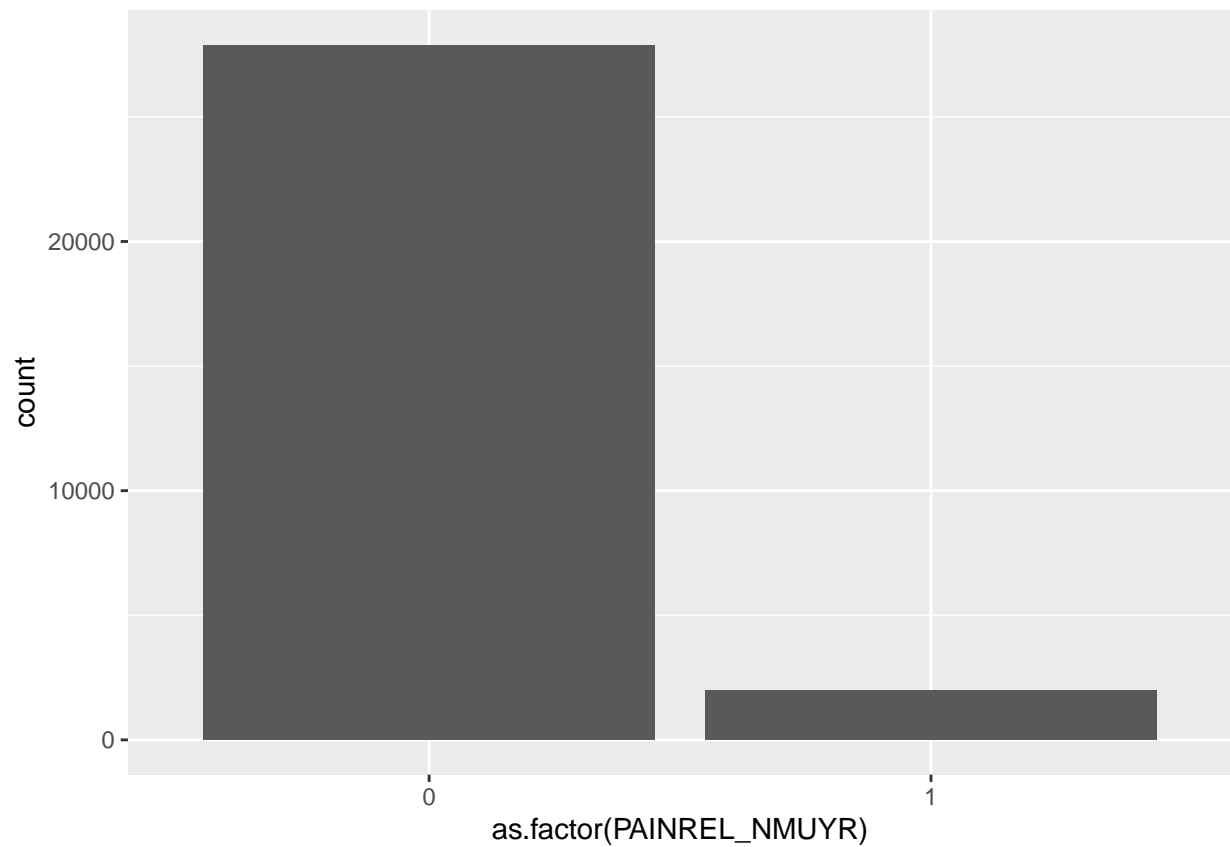
```
ggplot(data = us_19, aes(x = as.factor(DAST_CAT), fill = as.factor(GABA_NMUYR))) +  
  geom_bar() +  
  scale_fill_brewer(palette="Set3")
```



```
ggplot(data = us_19, aes(x = as.factor(PAINREL_NMUYR))) +  
  geom_bar()
```

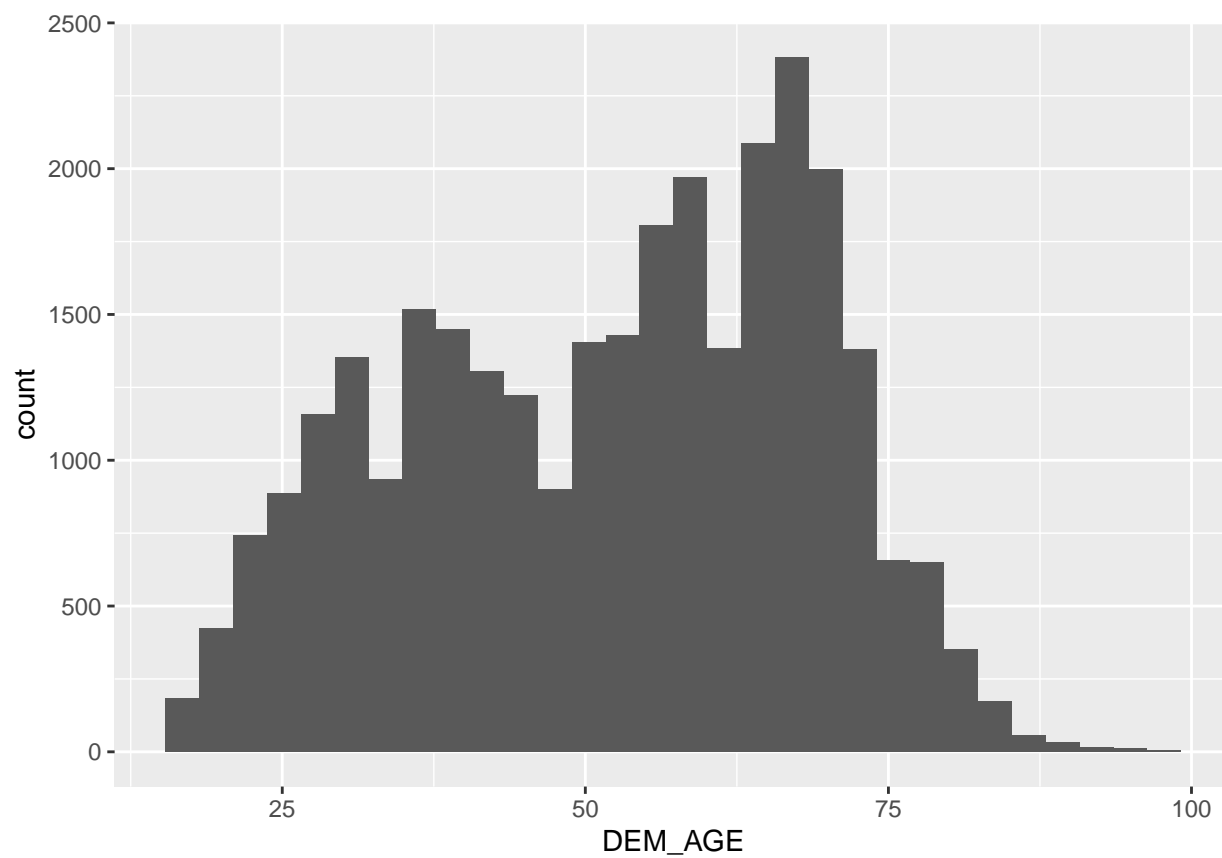


```
ggplot(data = us_19, aes(x = as.factor(PAINREL_NMUJR))) +  
  geom_bar()
```

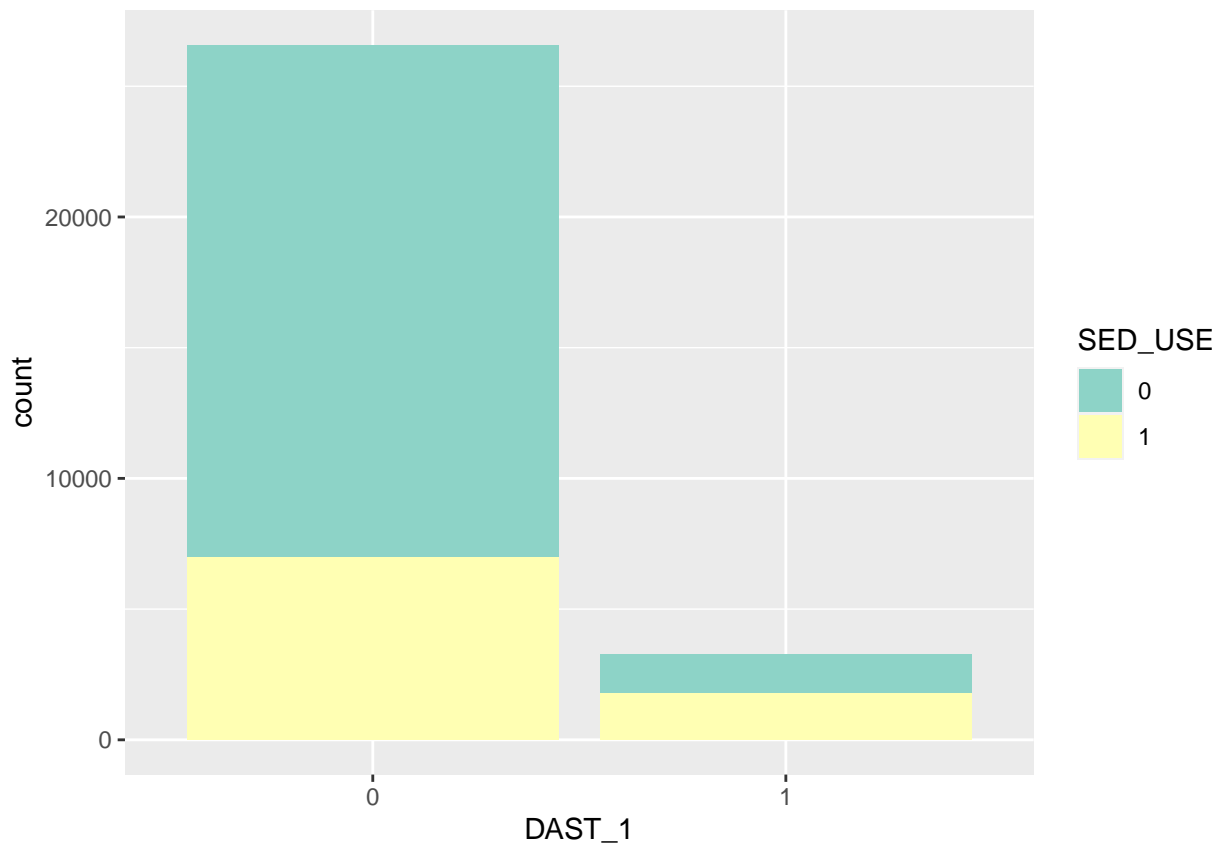
```
ggplot(data = us_19, aes(x = DEM_AGE)) +  
  geom_histogram()
```

```
## `stat_bin()` using `bins = 30`. Pick better value with `binwidth`.
```



CAN_USE =

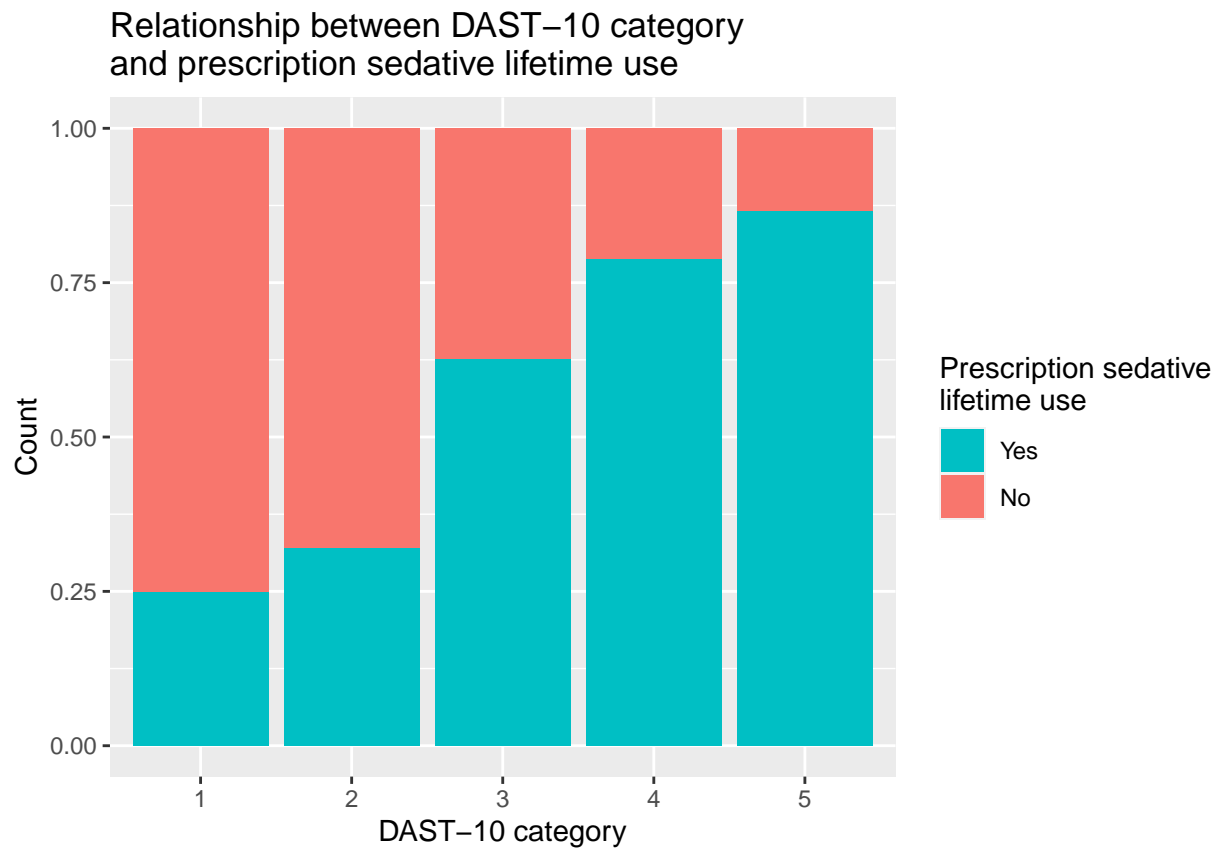
```
us_19 %>%  
  mutate(SED_USE = as.factor(SED_USE), DAST_1 = as.factor(DAST_1)) %>%  
  ggplot(mapping = aes(x = DAST_1, fill = SED_USE)) +  
  geom_bar() +  
  scale_fill_brewer(palette="Set3")
```



```
us_19 %>%
  group_by(factor(DAST_1)) %>%
  count(factor(SED_USE)) %>%
  mutate(pct_total = n/sum(n))
```

```
## # A tibble: 4 x 4
## # Groups:   factor(DAST_1) [2]
##   `factor(DAST_1)` `factor(SED_USE)`      n pct_total
##   <fct>           <fct>           <int>   <dbl>
## 1 0              0              19583    0.737
## 2 0              1              6994    0.263
## 3 1              0              1521    0.461
## 4 1              1              1775    0.539
```

```
ggplot(data = us_19, mapping = aes(x = as.factor(DAST_CAT), fill = as.factor(SED_USE))) +
  geom_bar(position = "fill") +
  labs(title = "Relationship between DAST-10 category \nand prescription sedative lifetime use",
       x = "DAST-10 category",
       y = "Count") +
  scale_fill_discrete(name = "Prescription sedative \nlifetime use", labels = c("No", "Yes"), guide = g
```



```
ggplot(data = us_19, mapping = aes(x = as.factor(DAST_CAT), fill = as.factor(SED_USE))) +
  geom_bar(position = "fill") +
  labs(title = "Relationship between DAST-10 category \nand prescription sedative lifetime use",
        x = "DAST-10 category",
        y = "Count") +
  scale_fill_discrete(name = "Prescription sedative \nlifetime use", labels = c("No", "Yes"), guide = g
```

