# Traffic Death Exploratory Analysis

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## Create dataframe to find deaths by vehicle year

```
averageAcc <- data %>% select(yearVeh, yearacc, injSeverity,
    dead) %>% group_by(yearVeh) %>% drop_na() %>% summarise(avgSev = mean(injSeverity),
    deadCount = sum(dead == "dead"), aliveCount = sum(dead ==
        "alive"), deadPCT = deadCount/(deadCount +
        aliveCount) * 100) %>% filter(aliveCount +
    deadCount > 50)
```

## Create dataframe to find deaths by safety device usage

```
safetyDeaths <- data %>% select(airbag, seatbelt, injSeverity,
    dead) %>% group_by(airbag, seatbelt) %>% drop_na() %>%
    filter(injSeverity <= 5) %>% summarise(avgSev = mean(injSeverity),
    deadCount = sum(dead == "dead"), aliveCount = sum(dead ==
        "alive"), deadPCT = deadCount/(deadCount +
        aliveCount) * 100) %>% filter(aliveCount +
    deadCount > 50)
```

## Create dataframe to find deaths by DVCat rating

```
DVCATData <- data %>% select(dvcat, frontal, injSeverity,
    dead) %>% group_by(dvcat, frontal) %>% drop_na() %>%
    filter(injSeverity <= 5) %>% summarise(avgSev = mean(injSeverity),
    deadCount = sum(dead == "dead"), aliveCount = sum(dead ==
        "alive"), deadPCT = deadCount/(deadCount +
```

```
        aliveCount) * 100) %>% filter(aliveCount +
    deadCount > 50)

DVCATData2 <- data %>% select(dvcat, frontal, injSeverity,
    dead, airbag, seatbelt) %>% group_by(dvcat, frontal,
    seatbelt, airbag) %>% drop_na() %>% filter(injSeverity <=
    5) %>% summarise(avgSev = mean(injSeverity), deadCount = sum(dead ==
    "dead"), aliveCount = sum(dead == "alive"), deadPCT2 = deadCount/(deadCount +
    aliveCount) * 100) %>% filter(aliveCount + deadCount >
    50)
```

## Create dataframe to find deaths by demographic

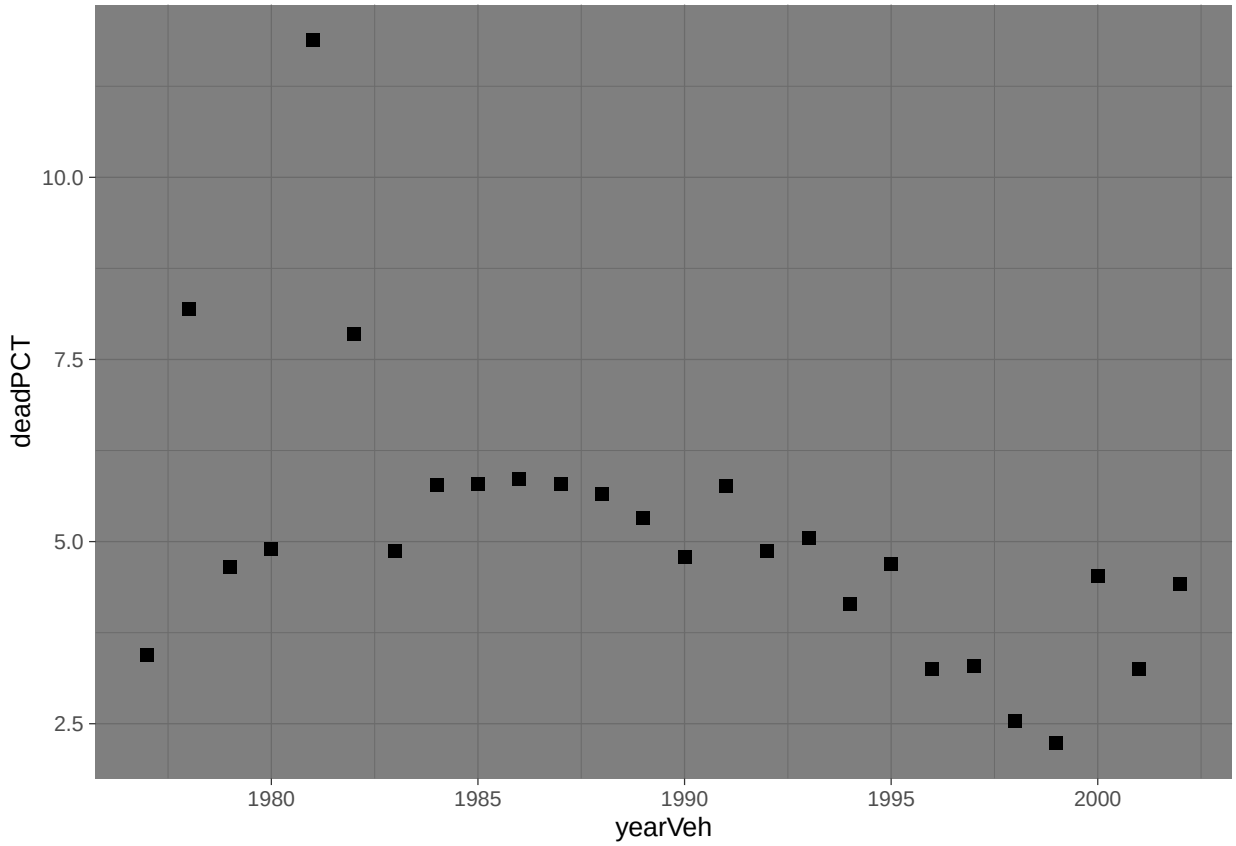
```
averageDemo <- data %>% select(yearacc, injSeverity,
    dead, weight, sex, occRole, ageOFocc) %>% group_by(yearacc,
    occRole) %>% drop_na() %>% summarise(avgSev = mean(injSeverity),
    deadCount = sum(dead == "dead"), aliveCount = sum(dead ==
        "alive"), deadPCT = deadCount/(deadCount +
        aliveCount) * 100)
```

## Dataframe for age/weight

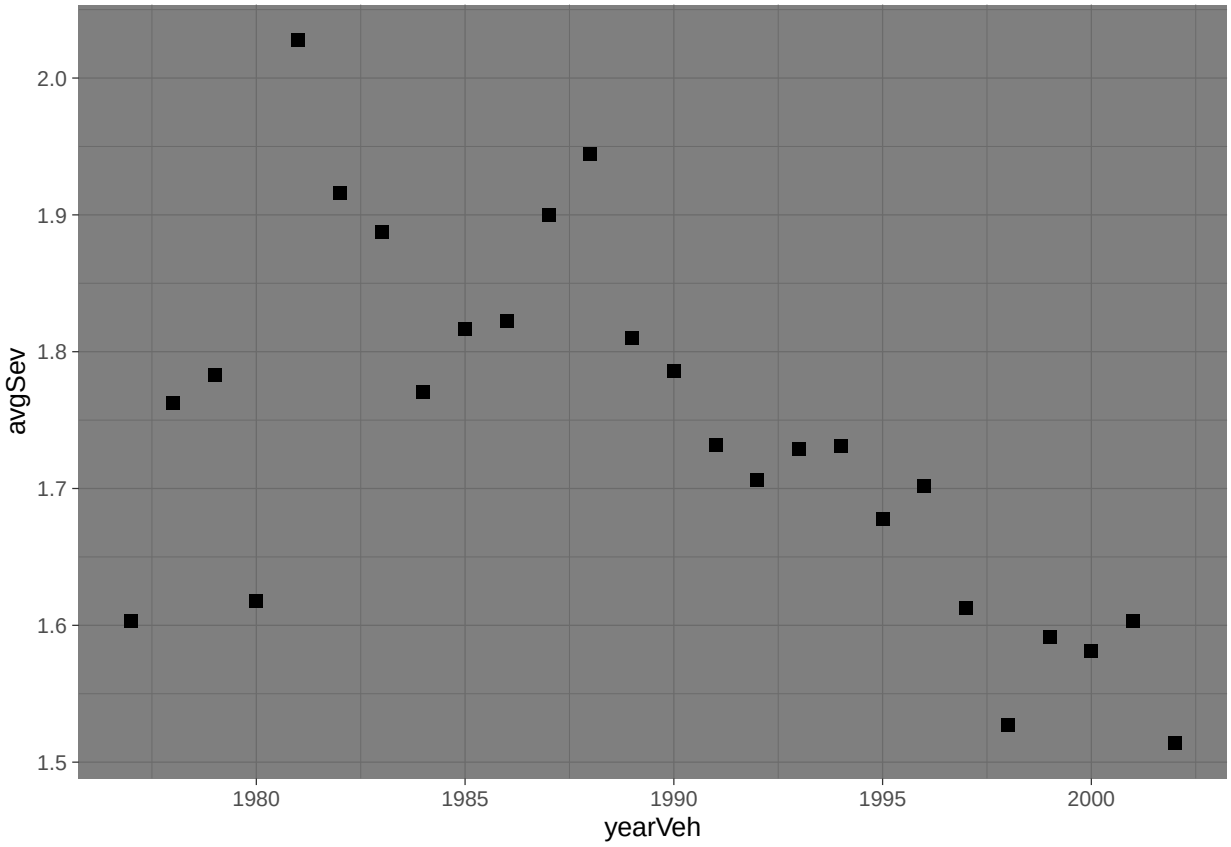
```
averageDemo <- data %>% select(yearacc, injSeverity,
    dead, weight, sex, occRole, ageOFocc) %>% group_by(yearacc,
    occRole) %>% drop_na() %>% summarise(avgSev = mean(injSeverity),
    deadCount = sum(dead == "dead"), aliveCount = sum(dead ==
        "alive"), deadPCT = deadCount/(deadCount +
        aliveCount) * 100)
```

## Graphs for severity/death based on vehicle year

```
ggplot(averageAcc, aes(x = yearVeh, y = deadPCT)) +
    theme_dark(base_size = 10) + geom_point(size = 2,
    shape = 15)
```

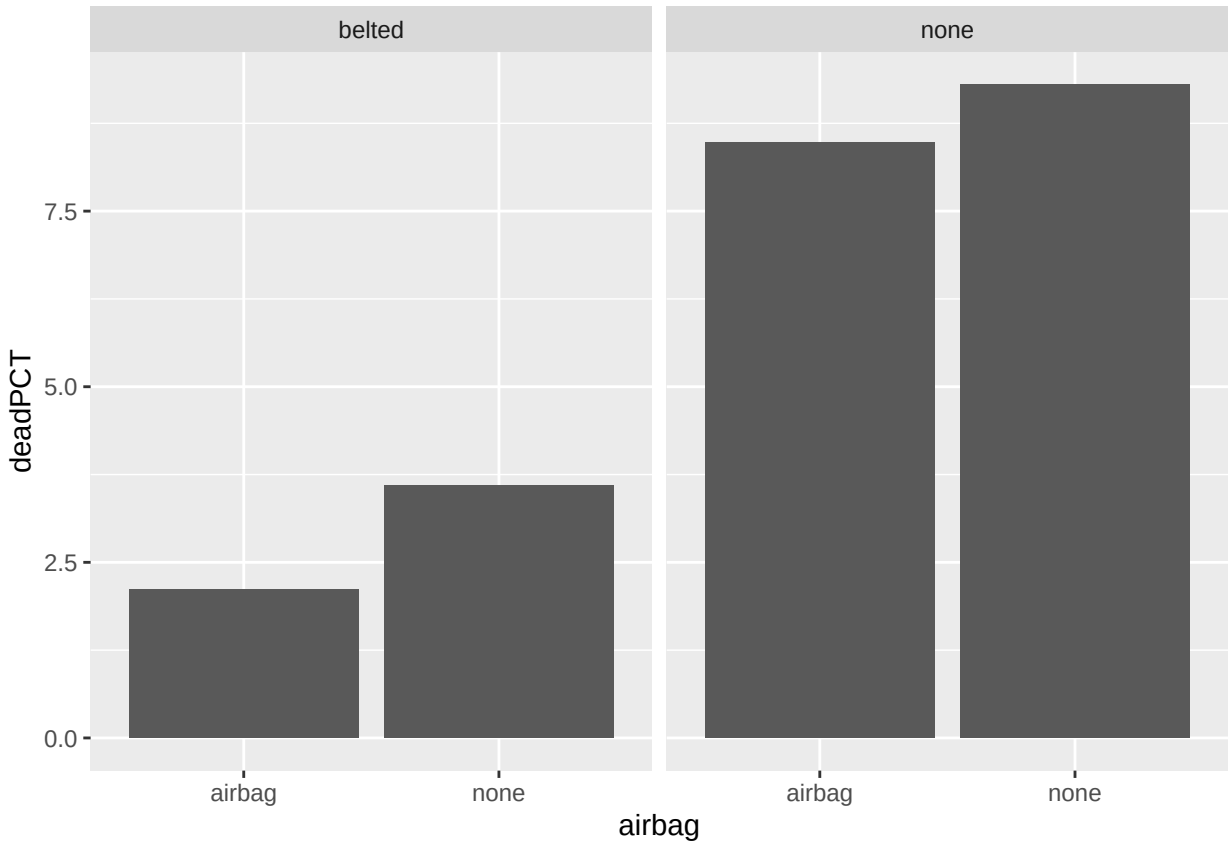



```
ggplot(averageAcc, aes(x = yearVeh, y = avgSev)) +
    theme_dark(base_size = 10) + geom_point(size = 2,
    shape = 15)
```

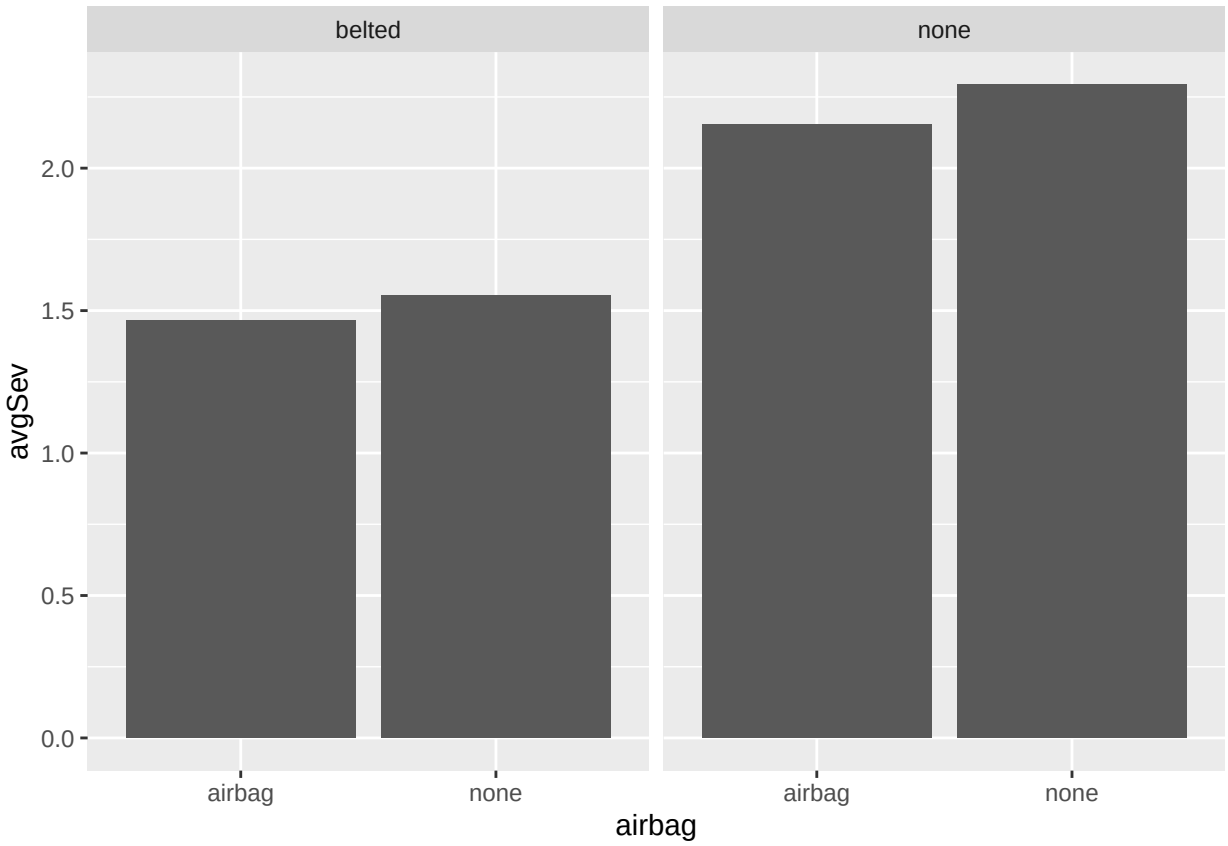



## Graphs for severity/death based on safety usage

```
ggplot(safetyDeaths, aes(x = airbag, y = deadPCT)) +
    geom_bar(stat = "identity") + facet_grid(~seatbelt)
```

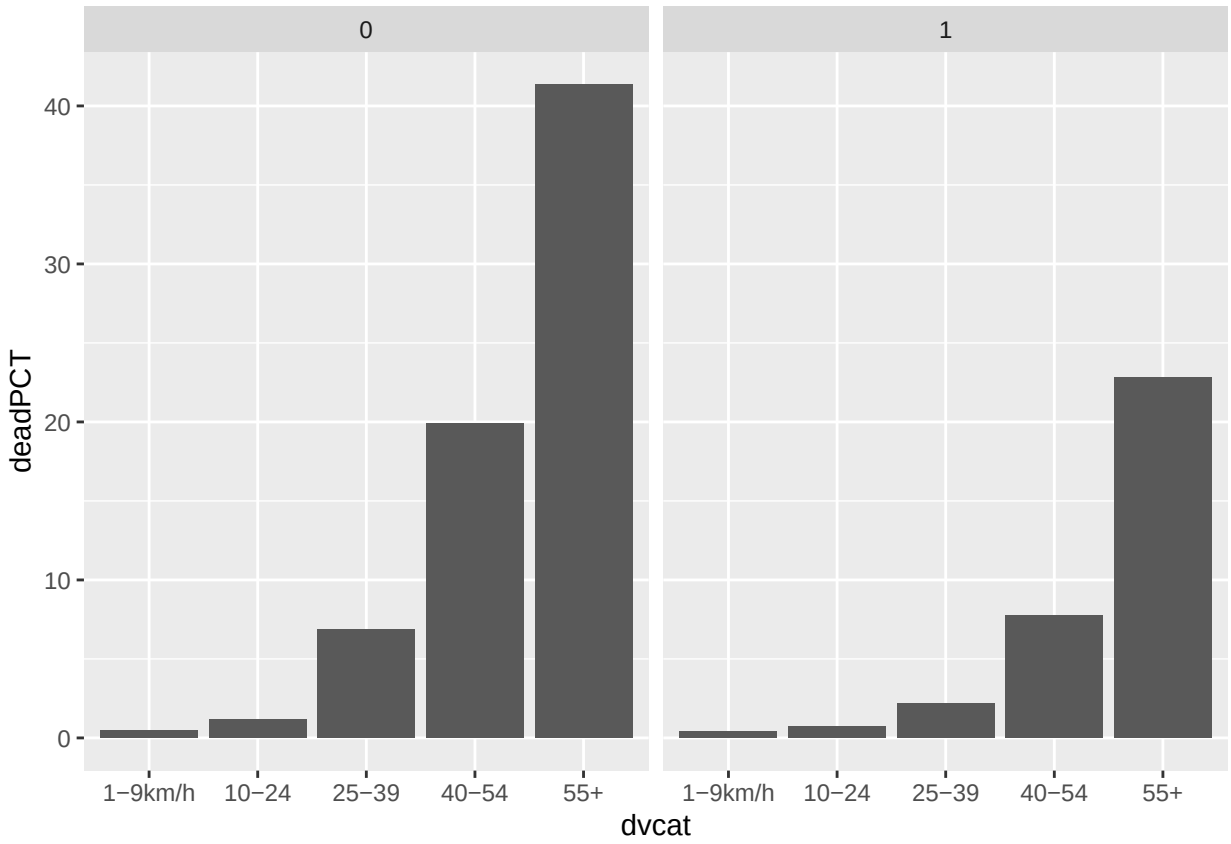



```
ggplot(safetyDeaths, aes(x = airbag, y = avgSev)) +
    geom_bar(stat = "identity") + facet_grid(~seatbelt)
```

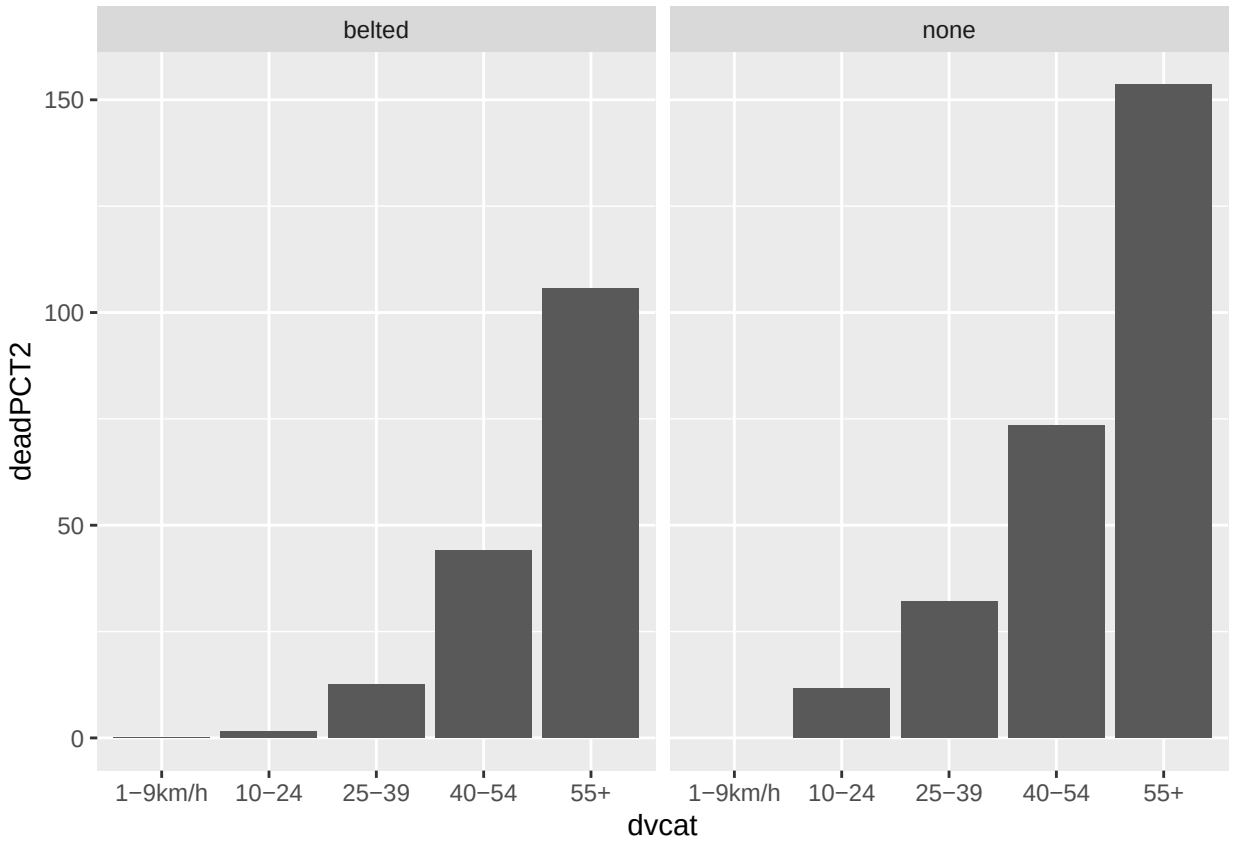



## Graphs for severity/death based on DVCat ratings

```
ggplot(DVCATData, aes(x = dvcat, y = deadPCT)) + geom_bar(stat = "identity") +
    facet_grid(~frontal)
```

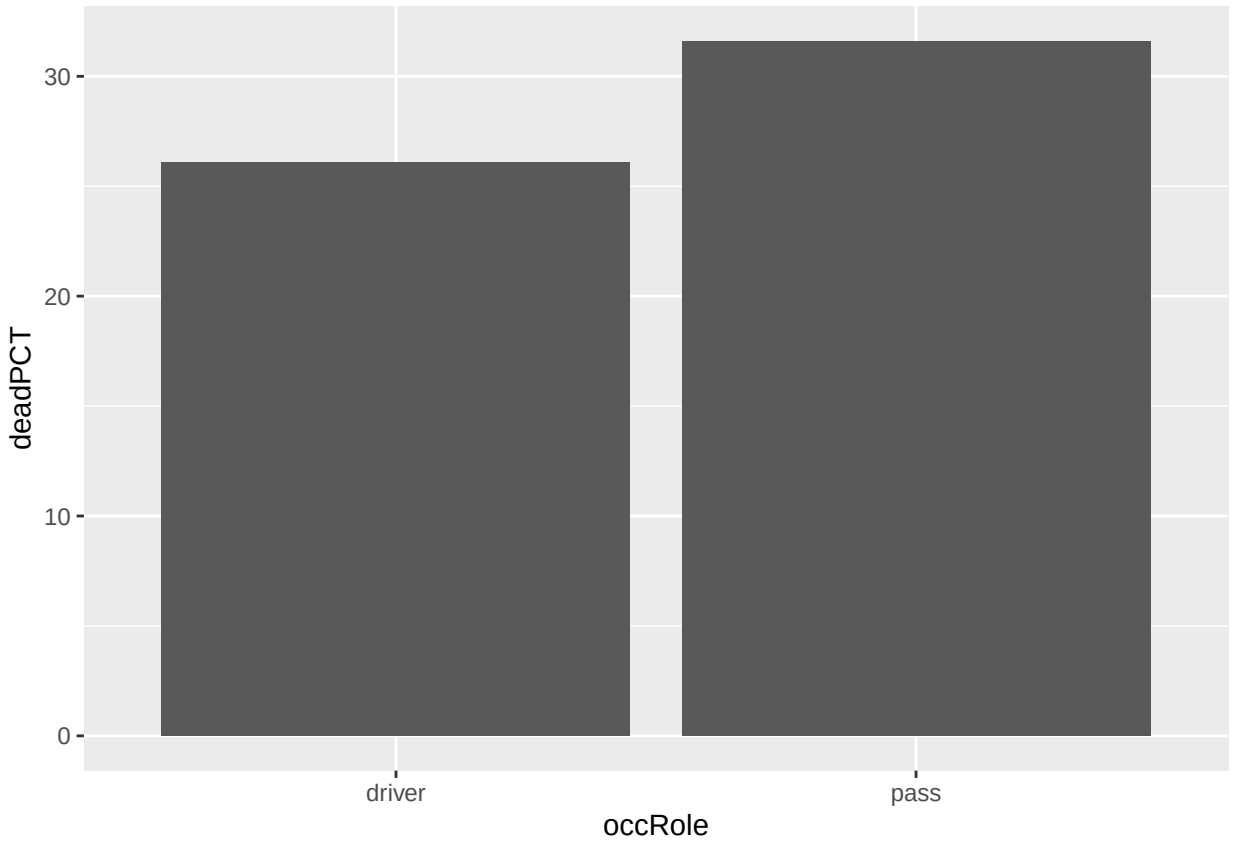



```
ggplot(DVCATData2, aes(x = dvcat, y = deadPCT2)) +
    geom_bar(stat = "identity") + facet_grid(~seatbelt)
```




## Graph for severity/death based on occupant role

```
ggplot(averageDemo, aes(x = occRole, y = deadPCT)) +
    geom_bar(stat = "identity")
```


30
20
10
0
deadPCT
driver
pass
occRole