Practice 2

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```
china_data =  read_sas("./data/corona_china.sas7bdat") %>%
  janitor::clean_names()
southkorea_data = read_sas("./data/corona_southkorea.sas7bdat") %>%
  janitor::clean_names()
```

Data set:

Variable Name
ID Patient unique ID Agegroup Age (years) at diagnosis. 0 = 0-9 years 1 = 10-19 years 2 = 20-29 years 3 = 30-39 years 4 = 40-49 years 5 = 50-59 years 6 = 60-69 years 7 = 70-79 years 8 = 80+ years Sex 1 = female 2 = male Hypertension Comorbid hypertension at COVID19 diagnosis 1 = yes 0 = no CVD Comorbid cardiovascular disease at COVID19 diagnosis 1 = yes 0 = no Dead 1 = yes 0 = no ———————————————————————————————

Number of people in each gender

```
china_data %>%
group_by(
  sex
) %>%
  dplyr::summarise(
    number = n()
  ) %>%
 knitr::kable()
```

sex	number
1	21691
2	22981

Number of people in each age group

```
china_data %>%
group_by(
  agegroup
) %>%
  dplyr::summarise(
    number = n()
  ) %>%
  knitr::kable()
```

agegroup	number
0	416
1	549

agegroup	number
2	3619
3	7600
4	8571
5	10008
6	8583
7	3918
8	1408

Number of people with and without hypertension

```
china_data %>%
group_by(
  hypertension
) %>%
  dplyr::summarise(
    number = n()
  ) %>%
  dplyr::mutate(
    percent = (number/sum(number))*100
  ) %>%
  knitr::kable()
```

hypertension	number	percent
0	38954	87.20004
1	5718	12.79996

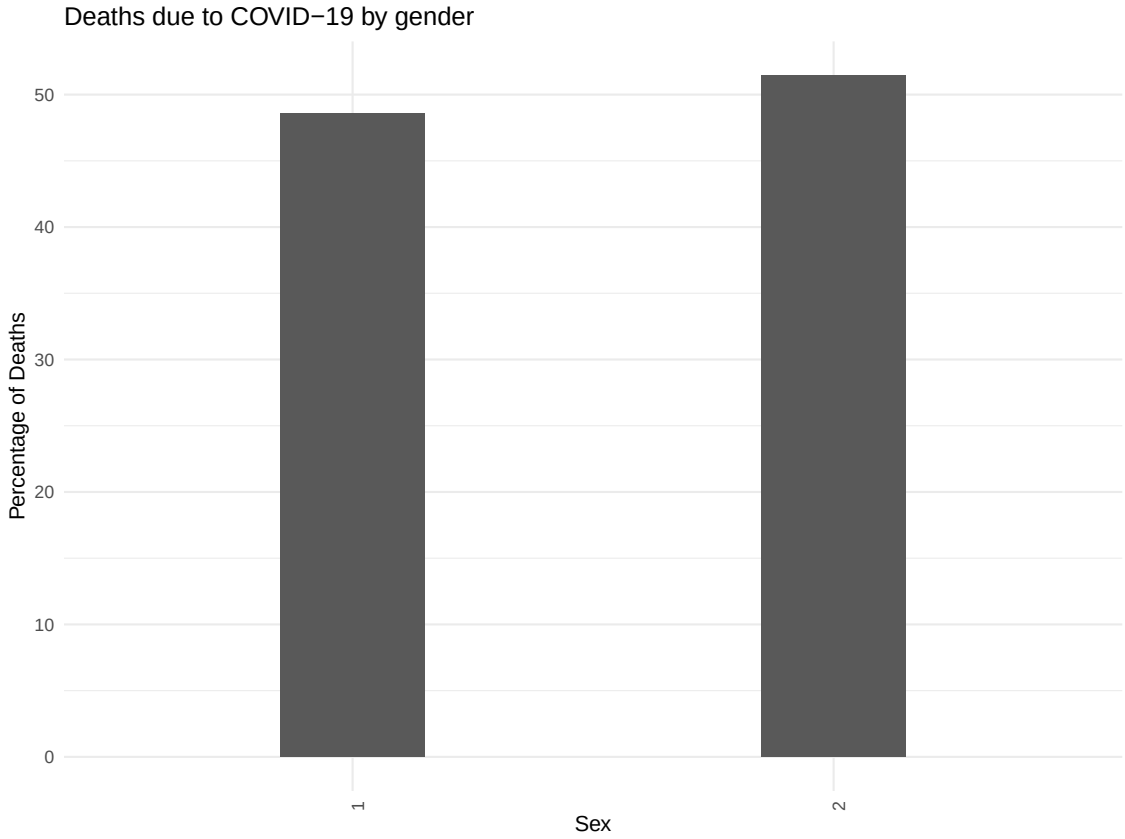
Percentage of people with and without CVD

```
china_data %>%
group_by(
  cvd
) %>%
  dplyr::summarise(
    number = n()
  ) %>%
  dplyr::mutate(
    percent = (number/sum(number))*100
  ) %>%
  knitr::kable()
```

cvd	number	percent
0	42796	95.800501
1	1876	4.199499

Deaths due to COVID-19 by gender

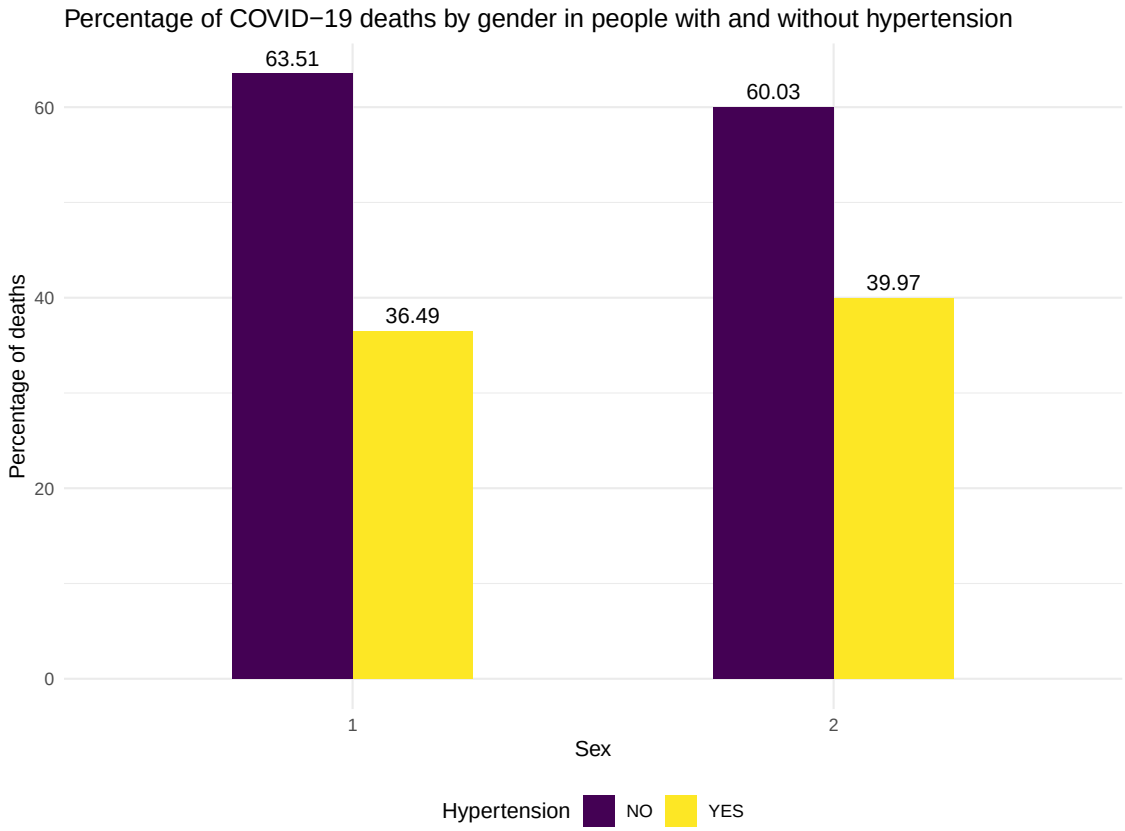
```r
china_data %>%
  group_by(
    sex
  ) %>%
  dplyr::summarise(
    count = n()
  ) %>%
  dplyr::mutate(
    percent = (count/sum(count))*100
  ) %>%
  ggplot(
    aes(
      x = factor(sex), y = percent
    )
  ) + geom_bar(stat = "identity", width = 0.3) + labs(x = "Sex", y = "Percentage of Deaths", title = "D
```



Percentage of COVID-19 deaths by gender in people with and without Hypertension

```r
china_data %>%
  filter(
    dead == 1
  ) %>%
  mutate(
    sex = factor(sex),
    hypertension = factor(hypertension)
  ) %>%
  group_by(
```

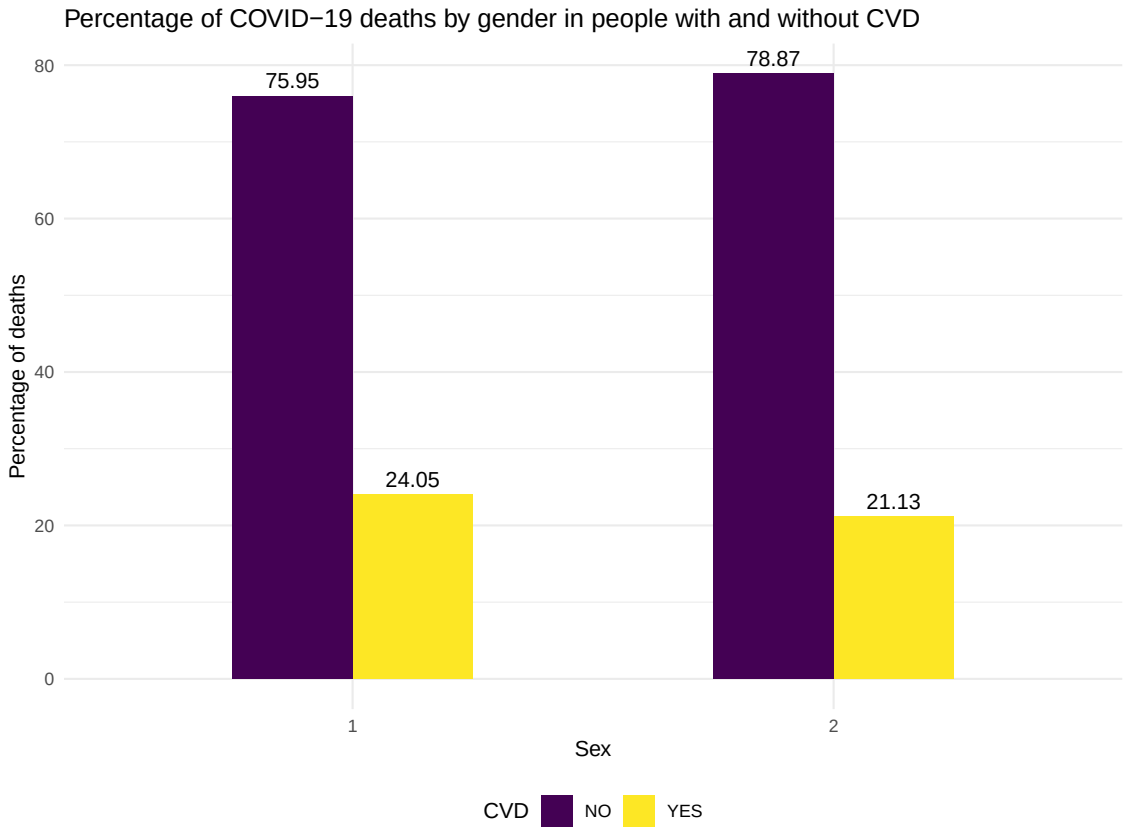
```
    sex, hypertension
  ) %>%
  dplyr::summarise(
    count = n()
  ) %>%
  dplyr::mutate(
    percent = round((count/sum(count))*100, digits = 2)
  ) %>%
  ggplot(aes(x = sex, y = percent)) +
  geom_bar(aes(fill = hypertension), position = "dodge", stat = "identity", width = .5) +
      geom_text(aes(label = percent, group = hypertension), position = position_dodge(width = 0.5), vjus
      labs(x = "Sex", y = "Percentage of deaths", title = "Percentage of COVID-19 deaths by gender in pe
```



Percentage of COVID-19 deaths by gender in people with and without CVD

```
china_data %>%
  filter(
    dead == 1
  ) %>%
  mutate(
    sex = factor(sex),
    cvd = factor(cvd)
  ) %>%
  group_by(
    sex, cvd
  ) %>%
  dplyr::summarise(
```

```
    count = n()
  ) %>%
  dplyr::mutate(
    percent = round((count/sum(count))*100, digits = 2)
  ) %>%
  ggplot(aes(x = sex, y = percent)) +
  geom_bar(aes(fill = cvd), position = "dodge", stat = "identity", width = .5) +
      geom_text(aes(label = percent, group = cvd), position = position_dodge(width = 0.5), vjust = -0.5
      labs(x = "Sex", y = "Percentage of deaths", title = "Percentage of COVID-19 deaths by gender in pe
```



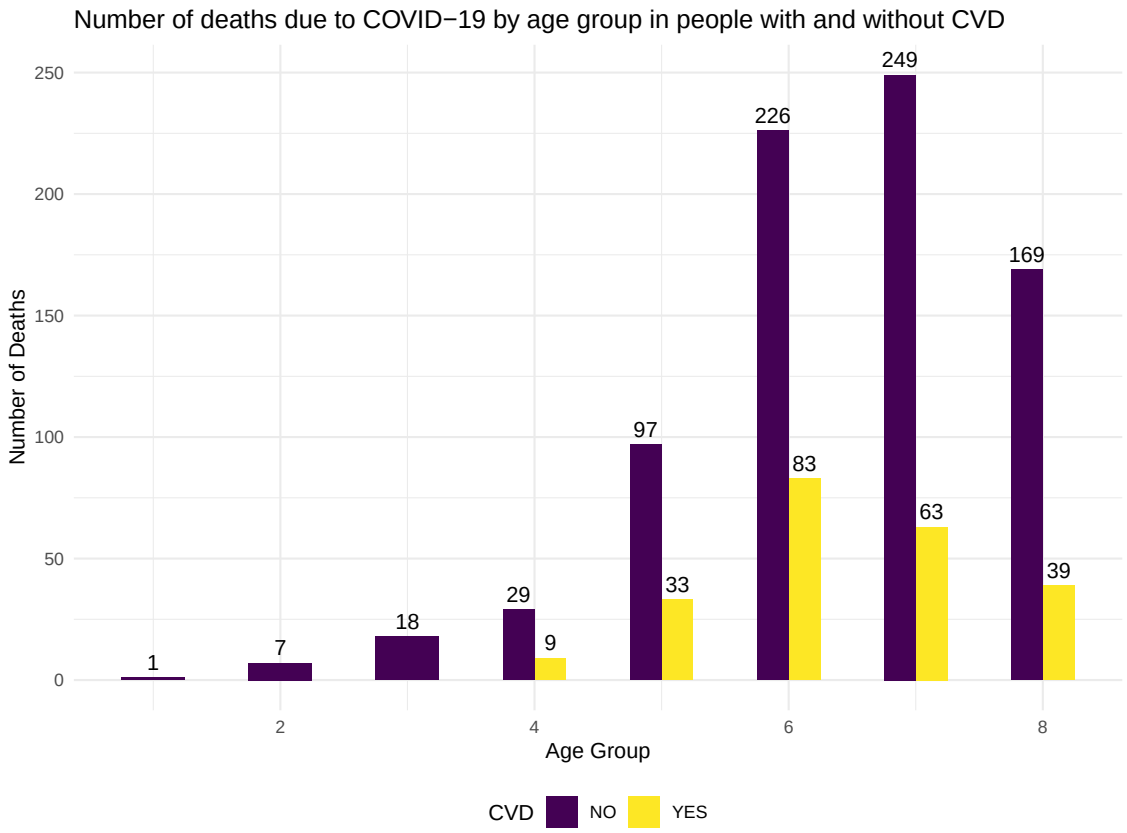
Number of COVID-19 deaths by age groups:

```
china_data %>%
  select(
    agegroup, dead
  ) %>%
  group_by(
    agegroup
  ) %>%
  dplyr::summarise(
  count = n()
  ) %>%
  knitr::kable()
```

agegroup	count
0	416
1	549
2	3619
3	7600
4	8571
5	10008
6	8583
7	3918
8	1408

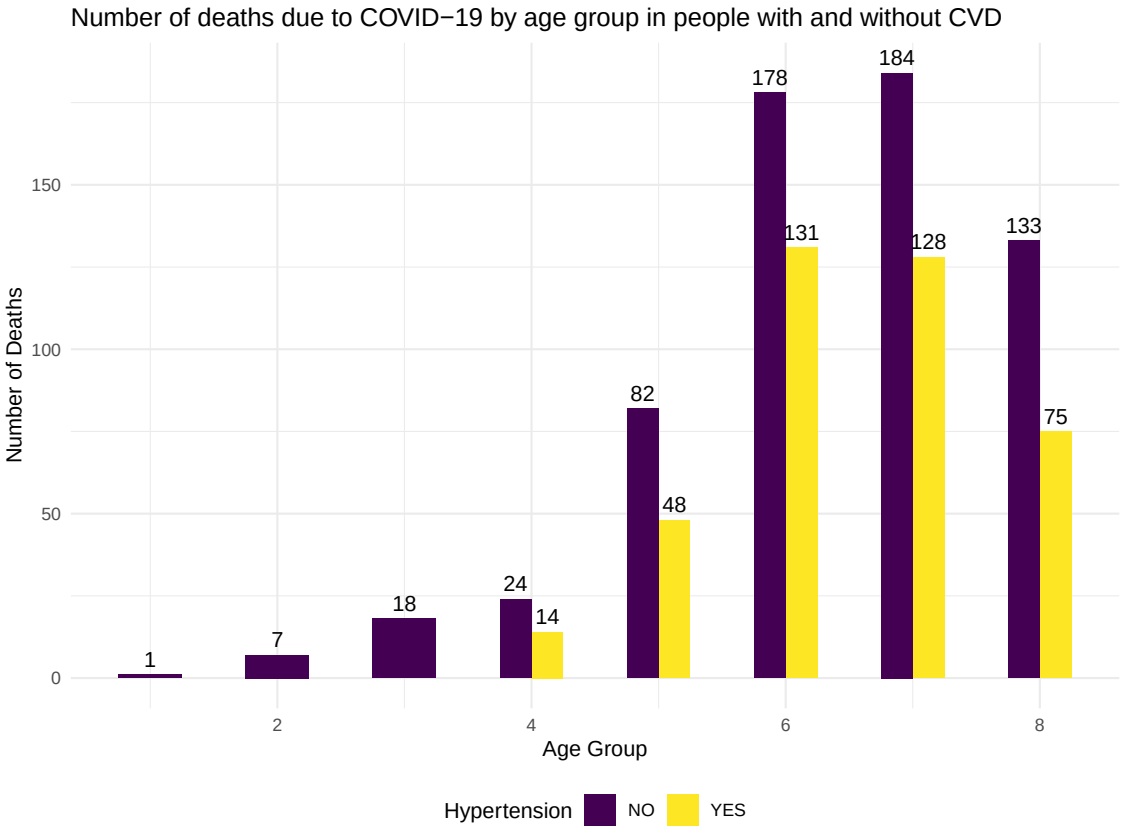
Number of deaths due to COVID-19 by age group in people with and without CVD

```
china_data %>%
  filter(
    dead == 1
  ) %>%
  mutate(
    cvd = factor(cvd)
  ) %>%
  group_by(
    agegroup, cvd
  ) %>%
  dplyr::summarise(
   count = n()
  ) %>%
  ggplot(
    aes(
      x = agegroup, y = count
    )
  ) + geom_bar(aes(fill = cvd), position = "dodge", stat = "identity", width = .5) +
      geom_text(aes(label = count, group = cvd), position = position_dodge(width = 0.5), vjust = -0.5)
```



Number of deaths due to COVID-19 by age group in people with and without Hypertension

```
china_data %>%
  filter(
    dead == 1
  ) %>%
  mutate(
    hypertension = factor(hypertension)
  ) %>%
  group_by(
    agegroup, hypertension
  ) %>%
  dplyr::summarise(
   count = n()
  ) %>%
  ggplot(
    aes(
      x = agegroup, y = count
    )
  ) + geom_bar(aes(fill = hypertension), position = "dodge", stat = "identity", width = .5) +
      geom_text(aes(label = count, group = hypertension), position = position_dodge(width = 0.5), vjust
```


Number of deaths due to COVID−19 by age group in people with and without CVD
Number of Deaths
150
100
50
0
1
7
18
24
14
82
48
178
131
184
128
133
75
2
4
6
8
Age Group
Hypertension
NO
YES