Chicago Domestic Crimes During Pandemic

```
domvio<-domvio %>%
  mutate(MONTH = as.numeric(factor(substring(DATE..OF.OCCURRENCE, 0, 2)))) %>%
  mutate(DAY = as.numeric(factor(substring(DATE..OF.OCCURRENCE, 4,5)))) %>%
  mutate(YEAR = as.numeric(factor(substring(DATE..OF.OCCURRENCE, 7,10))))

#heres what the data looks like
glimpse(domvio)
```

```
## Rows: 231,002
## Columns: 20
## $ CASE.                  <chr> "JD163753", "JD212847", "JC497784", "JC459410...
## $ DATE..OF.OCCURRENCE    <chr> "02/24/2020 08:15:00 PM", "04/10/2020 10:56:0...
## $ BLOCK                  <chr> "031XX W LEXINGTON ST", "005XX W 103RD ST", "...
## $ IUCR                   <chr> "1153", "0560", "0860", "0560", "0810", "0820...
## $ PRIMARY.DESCRIPTION    <chr> "DECEPTIVE PRACTICE", "ASSAULT", "THEFT", "AS...
## $ SECONDARY.DESCRIPTION <chr> "FINANCIAL IDENTITY THEFT OVER $ 300", "SIMPL...
## $ LOCATION.DESCRIPTION   <chr> "", "RESIDENCE", "DEPARTMENT STORE", "SIDEWAL...
## $ ARREST                 <chr> "N", "N", "N", "N", "N", "N", "N", "N", "N", ...
## $ DOMESTIC               <chr> "N", "N", "N", "N", "N", "N", "N", "N", "N", ...
## $ BEAT                   <int> 1134, 2232, 1924, 122, 123, 2433, 312, 914, 3...
## $ WARD                   <int> 24, 9, 44, 4, 25, 48, 20, 11, 5, 26, 27, 37, ...
## $ FBI.CD                 <chr> "11", "08A", "06", "08A", "06", "06", "08A", ...
## $ X.COORDINATE           <int> NA, 1174583, NA, NA, NA, NA, 1180030, 1171590...
## $ Y.COORDINATE           <int> NA, 1836593, NA, NA, NA, NA, 1862317, 1887793...
## $ LATITUDE               <dbl> NA, 41.70700, NA, NA, NA, NA, 41.77747, 41.84...
## $ LONGITUDE              <dbl> NA, -87.63629, NA, NA, NA, NA, -87.61556, -87...
## $ LOCATION               <chr> "", "(41.707000821, -87.636288063)", "", "", ...
## $ MONTH                  <dbl> 2, 4, 11, 10, 5, 12, 5, 5, 4, 5, 4, 5, 5, 5, ...
## $ DAY                    <dbl> 24, 10, 3, 4, 24, 5, 7, 3, 28, 7, 25, 7, 7, 5...
## $ YEAR                   <dbl> 2, 2, 1, 1, 2, 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, ...
```

```
domvio_mut<-domvio

#create an indicator for being before covid entirely
#this indicator is "isbeforecovid"
domvio_mut<-domvio_mut %>%
  mutate(isbeforecovid = case_when(
    YEAR == 2019 ~ 1,
    YEAR == 2020 & MONTH == 01 & DAY <=24 ~ 1 ,
    YEAR == 2020 & MONTH == 01 & DAY > 24 ~ 0,
    YEAR == 2020 & MONTH > 1 ~ 0
    ))

#create an indicator for being before lockdown (tho covid is in the USA)
#this indicator is "isprelockdown"
domvio_mut<-domvio_mut %>%
  mutate(isbeforecovid = case_when(
```

```
    YEAR =="2019" ~ 0,
    YEAR == "2020" & MONTH == "01" & DAY <=24 ~0,
    YEAR == "2020" & MONTH == "01" & DAY > 24 ~ 1,
    YEAR == "2020" & MONTH == "02"  ~ 1,
    YEAR == "2020"  & MONTH == "03" & DAY < "22" ~ 1,
    YEAR == "2020"  & MONTH == "03" & DAY >= "22" ~ 0,
    YEAR == "2020"  & MONTH > "03" ~ 0
    ))
#create an indicator for being in the lockdown
#this indicator is "islockdown"
domvio_mut<-domvio_mut %>%
  mutate(islockdown = case_when(
    YEAR =="2019" ~ 0,
    YEAR == "2020" & MONTH < "03" ~ 0,
    YEAR == "2020" & MONTH == "03" & DAY < "22" ~ 0,
    YEAR == "2020" & MONTH == "03" & DAY >= "22" ~ 1,
    YEAR == "2020" & MONTH == "04" ~ 1,
    YEAR == "2020" & MONTH == "05" & DAY <= "29" ~ 1,
    YEAR == "2020" & MONTH == "05" & DAY > "29" ~ 0,
    YEAR == "2020" & MONTH > "05" ~ 0

    ))

#create an indicator for the recovery period
#this indicator is "isrecovery"

domvio_mut<-domvio_mut %>%
  mutate(isrecovery = case_when(
    YEAR =="2019" ~ 0,
    YEAR == "2020" & MONTH < "05" ~ 0,
    YEAR == "2020" & MONTH == "05" & DAY <= "29" ~ 0,
    YEAR == "2020" & MONTH == "05" & DAY > "29" ~ 1,
    YEAR == "2020" & MONTH > "05" ~ 1

    ))

#create an indicator for phase 3 in the recovery
#this indicator is "isphase3"

domvio_mut<-domvio_mut %>%
  mutate(isphase3 = case_when(
    YEAR =="2019" ~ 0,
    YEAR == "2020" & MONTH < "06" ~ 0,
    YEAR == "2020" & MONTH == "06" & DAY < "03" ~ 0,
    YEAR == "2020" & MONTH == "06" & DAY >= "03" & DAY < "26" ~ 1,
    YEAR == "2020" & MONTH == "06" &  DAY >= "26" ~ 0,
    YEAR == "2020" & MONTH > "06" ~ 0

    ))

#create an indicator for phase 4 in the recovery
#this indicator is "isphase4"
```

```
domvio_mut<-domvio_mut %>%
  mutate(isphase4 = case_when(
    YEAR =="2019" ~ 0,
    YEAR == "2020" & MONTH < "06" ~ 0,
        YEAR == "2020" & MONTH == "06" & DAY < "26" ~ 0,
    YEAR == "2020" & MONTH == "06" & DAY >= "26"~ 1,
    YEAR == "2020" & MONTH >"06" ~ 1

    ))
#create an indicator for cases of dom violence
#this indicator is "isdomviolence"

domvio_mut<-domvio_mut %>%
  mutate(isdomviolence = case_when(
    SECONDARY.DESCRIPTION == "DOMESTIC BATTERY SIMPLE" ~ 1,
    SECONDARY.DESCRIPTION != "DOMESTIC BATTERY SIMPLE" ~ 0
    ))

#create an indicator for cases of dom violence
#this indicator is "isdomviolence"

glimpse(domvio_mut)
```

```
## Rows: 231,002
## Columns: 26
## $ CASE.                  <chr> "JD163753", "JD212847", "JC497784", "JC459410...
## $ DATE..OF.OCCURRENCE    <chr> "02/24/2020 08:15:00 PM", "04/10/2020 10:56:0...
## $ BLOCK                  <chr> "031XX W LEXINGTON ST", "005XX W 103RD ST", "...
## $ IUCR                   <chr> "1153", "0560", "0860", "0560", "0810", "0820...
## $ PRIMARY.DESCRIPTION    <chr> "DECEPTIVE PRACTICE", "ASSAULT", "THEFT", "AS...
## $ SECONDARY.DESCRIPTION  <chr> "FINANCIAL IDENTITY THEFT OVER $ 300", "SIMPL...
## $ LOCATION.DESCRIPTION   <chr> "", "RESIDENCE", "DEPARTMENT STORE", "SIDEWAL...
## $ ARREST                 <chr> "N", "N", "N", "N", "N", "N", "N", "N", "N", ...
## $ DOMESTIC               <chr> "N", "N", "N", "N", "N", "N", "N", "N", "N", ...
## $ BEAT                   <int> 1134, 2232, 1924, 122, 123, 2433, 312, 914, 3...
## $ WARD                   <int> 24, 9, 44, 4, 25, 48, 20, 11, 5, 26, 27, 37, ...
## $ FBI.CD                 <chr> "11", "08A", "06", "08A", "06", "06", "08A", ...
## $ X.COORDINATE           <int> NA, 1174583, NA, NA, NA, NA, 1180030, 1171590...
## $ Y.COORDINATE           <int> NA, 1836593, NA, NA, NA, NA, 1862317, 1887793...
## $ LATITUDE               <dbl> NA, 41.70700, NA, NA, NA, NA, 41.77747, 41.84...
## $ LONGITUDE              <dbl> NA, -87.63629, NA, NA, NA, NA, -87.61556, -87...
## $ LOCATION               <chr> "", "(41.707000821, -87.636288063)", "", "", ...
## $ MONTH                  <dbl> 2, 4, 11, 10, 5, 12, 5, 5, 4, 5, 4, 5, 5, 5, ...
## $ DAY                    <dbl> 24, 10, 3, 4, 24, 5, 7, 3, 28, 7, 25, 7, 7, 5...
## $ YEAR                   <dbl> 2, 2, 1, 1, 2, 1, 2, 2, 2, 2, 2, 2, 2, 2, 2, ...
## $ isbeforecovid          <dbl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N...
## $ islockdown             <dbl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N...
## $ isrecovery             <dbl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N...
## $ isphase3               <dbl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N...
## $ isphase4               <dbl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, N...
## $ isdomviolence          <dbl> 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, ...
```

```
#if you are wondering about how the actual data looks like there it is
#number of observations during lockdown
```

```
domvio_mut %>%
  count (islockdown)
```

```
##   islockdown      n
## 1         NA 231002
```

```
#number of observations during recovery
domvio_mut %>%
  count (isrecovery)
```

```
##   isrecovery      n
## 1         NA 231002
```

```
#number of observations during p3, p4
domvio_mut %>%
  count (isphase3)
```

```
##   isphase3      n
## 1       NA 231002
```

```
domvio_mut %>%
  count(isphase4)
```

```
##   isphase4      n
## 1       NA 231002
```

```
#number of observations during in 2020 pre covid
domvio_mut %>%
  count (isbeforecovid)
```

```
##   isbeforecovid      n
## 1            NA 231002
```

```
#number of cases of domestic violence
domvio_mut %>%
  count(isdomviolence)
```

```
##   isdomviolence      n
## 1             0 208833
## 2             1  22169
```

```
#see number of cases of domestic violence on a given day
domvio_mut %>%
  filter(YEAR=="2020") %>%
  filter(MONTH=="05") %>%
  filter(DAY=="30") %>%
  count(isdomviolence)
```

```
## [1] isdomviolence n
## <0 rows> (or 0-length row.names)
```

```
#observations of dom violence on a day or month
domvio_mut %>%
  filter(YEAR=="2019") %>%
  filter(MONTH=="07") %>%
  count(isdomviolence)
```

```
## [1] isdomviolence n
## <0 rows> (or 0-length row.names)
```