

# EXPLORATORY DATA ANALYSIS

Crime in Kansas City, MO - 2020

David Hyppolite

Maxwell Sylvestre

Tenzin Jigme

Vagner Maidana



# AGENDA

**Introduction**

**Data Overview**

**Exploratory Data Analysis**

**Recommendations/Conclusion**



# INTRODUCTION



**Kansas City, Missouri (KC or KCMO)** is the largest city in Missouri by population and area.

Kansas City is in the border of Kansas and Missouri but located in Missouri instead.

## FOCUS

1. Crimes in Kansas City during 2020 because that might potentially reveal interesting COVID-19 pandemic insights about crime in a busy city.
2. COVID-19 crisis in Black and Hispanic communities potentially increased domestic violence and other stress related crimes.

## SOFTWARES

Excel and Tableau

- clean the data and uncover insights
- pivot tables
- data visualizations



# DATA OVERVIEW

**Source:** Kansas City Police Department - OpenDataKC

Crime Reports from Jan 1st, 2020 to Dec 27th, 2020

within Kansas City, Missouri.

**96,220** Rows

**23** Columns

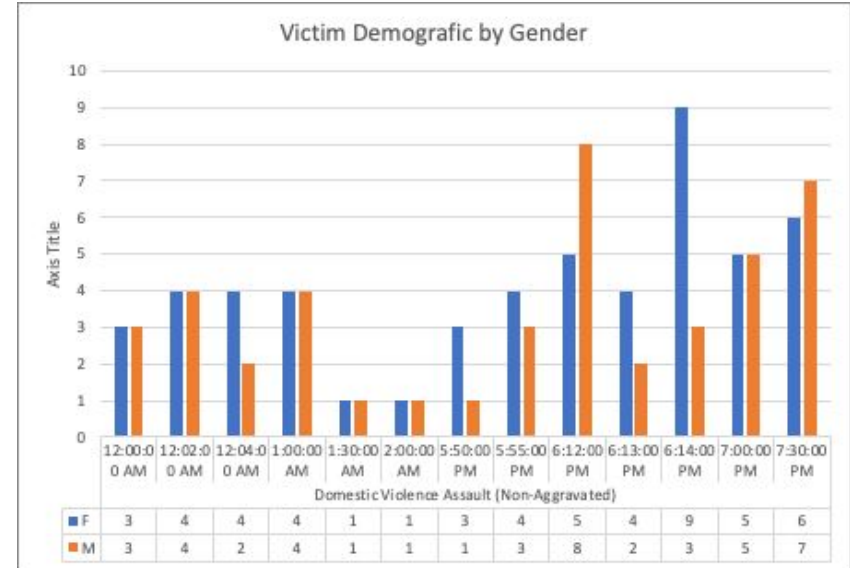
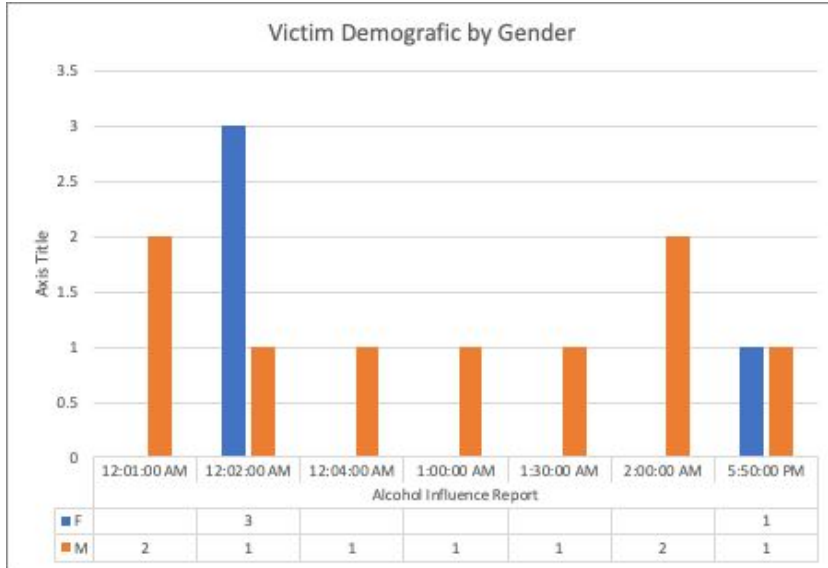
Data Types: Text/String, Date/Time, Number, and Geolocation.

Link: [KCPD 2020 Crime Reports | Open Data KC](#)

Column Name	Description	Type	
<b>Report_No</b>	Unique number assigned to a case, throughout the life of a ca...	Plain Text	T
<b>Reported_Date</b>	Date the offense was reported	Date & Time	📅
<b>Reported Time</b>		Plain Text	T
<b>From_Date</b>	Earliest date the incident could have occurred.(From Date - To ...	Date & Time	📅
<b>From Time</b>		Plain Text	T
<b>To_Date</b>	Latest date the incident could have occurred.(From Date - To ...	Date & Time	📅
<b>To Time</b>		Plain Text	T
<b>Offense</b>	Offense code	Plain Text	T
<b>IBRS</b>	National Incident Based Reporting System offense code	Plain Text	T
<b>Description</b>	Short description of the offense	Plain Text	T
<b>Beat</b>	Area where offense occurred	Plain Text	T

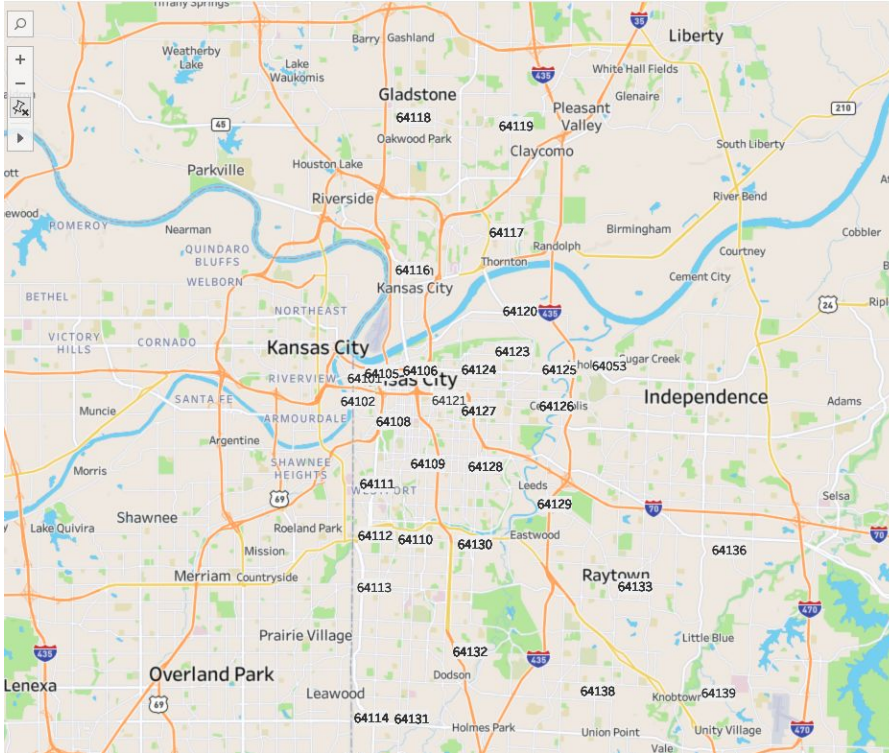


# BAR GRAPH OF DOMESTIC VIOLENCE (DV) BY GENDER



*Relation between Male and Female victims of domestic violence. It was influenced by alcohol during the period between 12 am to 2 am and between 5:50 pm to 7:30 pm.*

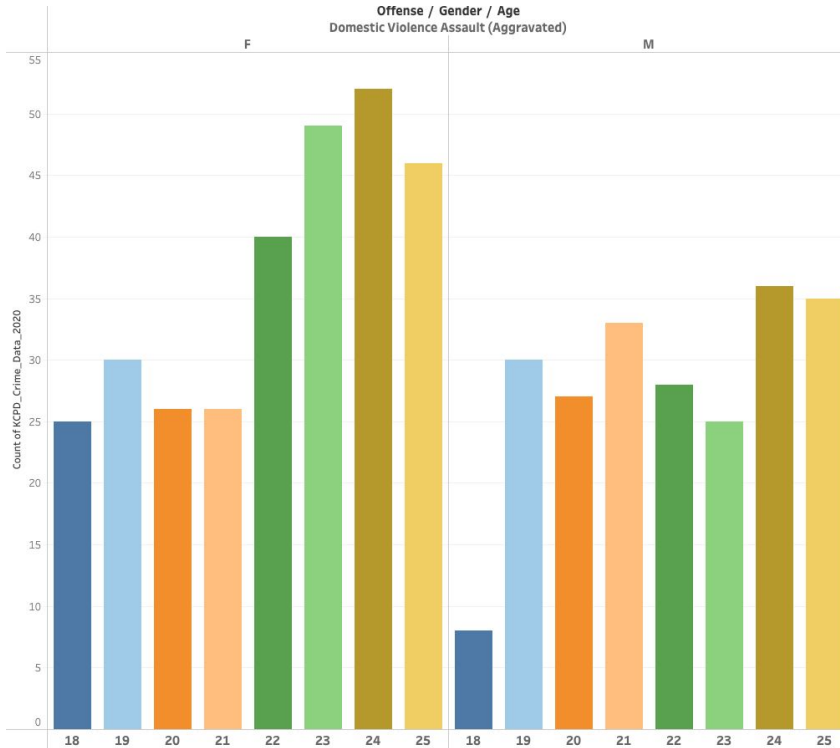
# MAP - VICTIMS OF DV



*Satellite Map, showing location where the offense occurred.*

The zip code allowed Kansas City police to determine how far and how long take to get to the location where the offense was taken.

# BAR GRAPH DV BY GENDER AND AGE

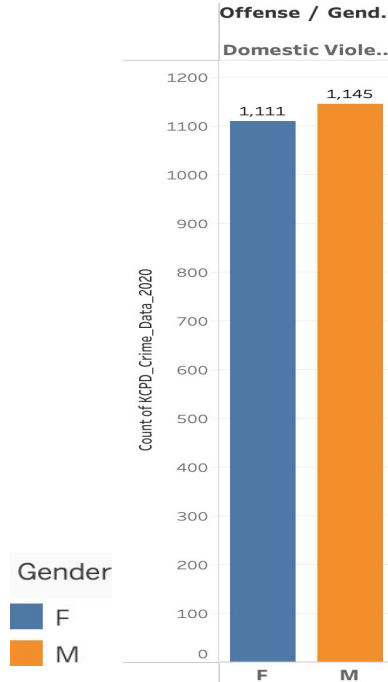
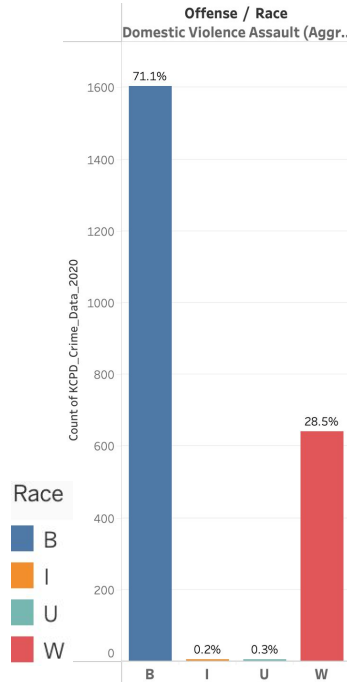


*Domestic Violence aggravated  
by Gender*

group age between 18 and 25



# BAR GRAPH - DV BY GENDER, RACE

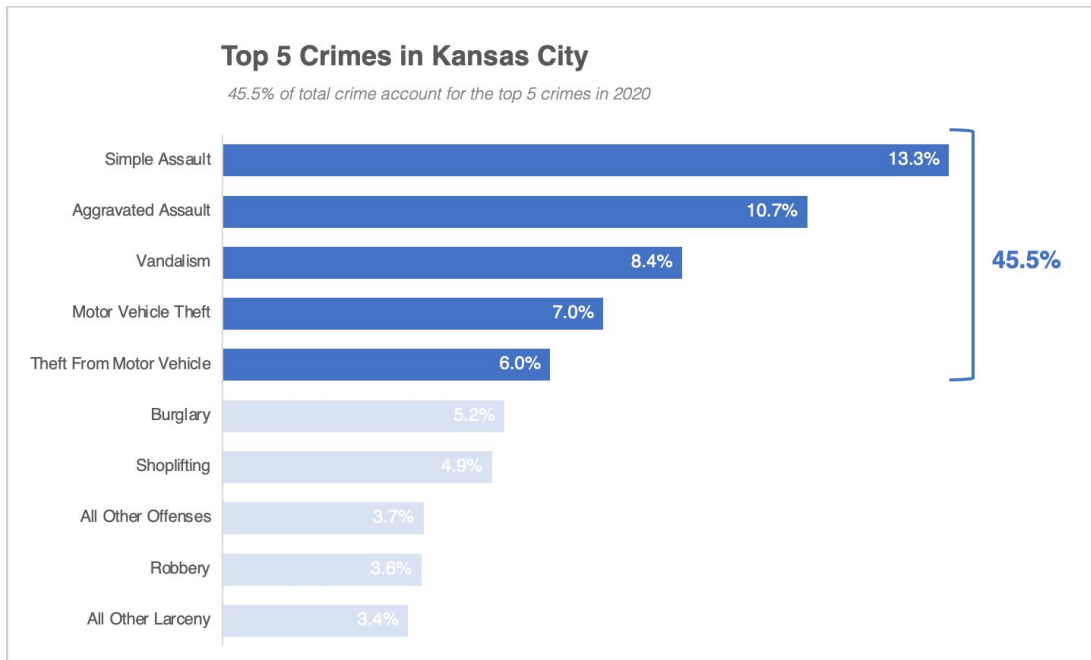


*Domestic Violence aggravated  
by Race and Gender*

group age between 18 and 25



# CRIME TYPES



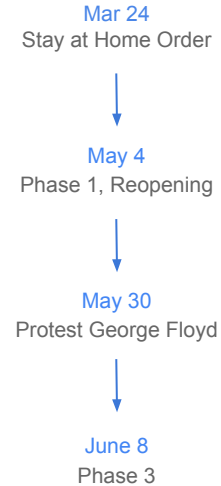
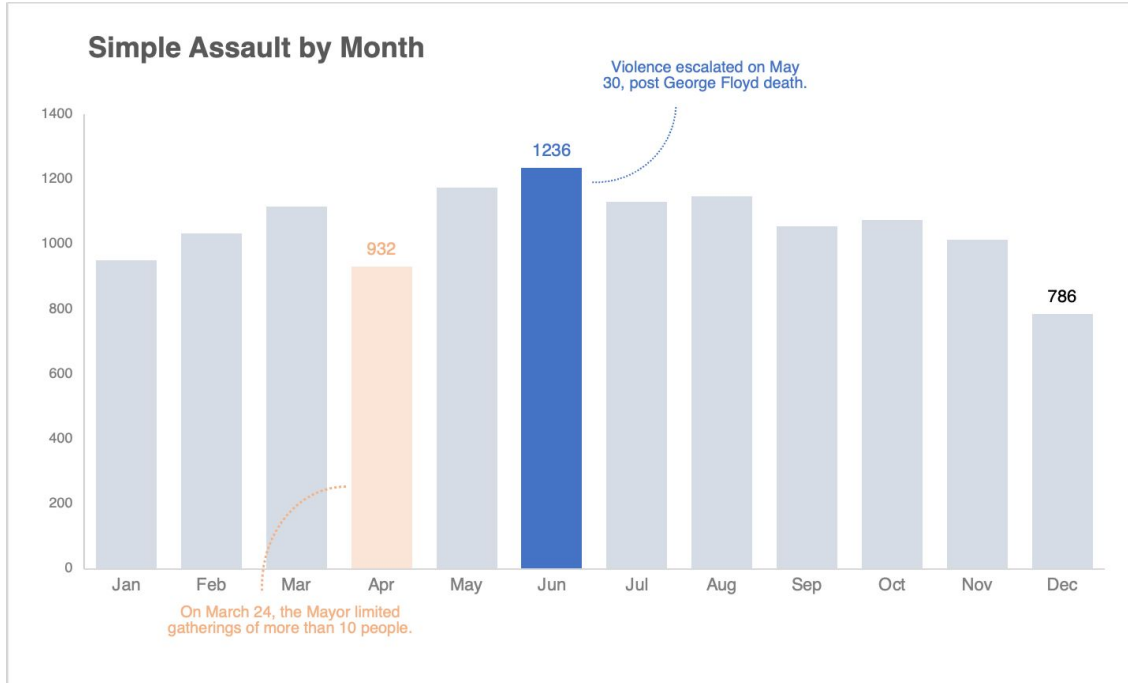
## *Simple Assault*

an act intended to arouse fear in a victim,  
but doesn't have to involve physical contact.

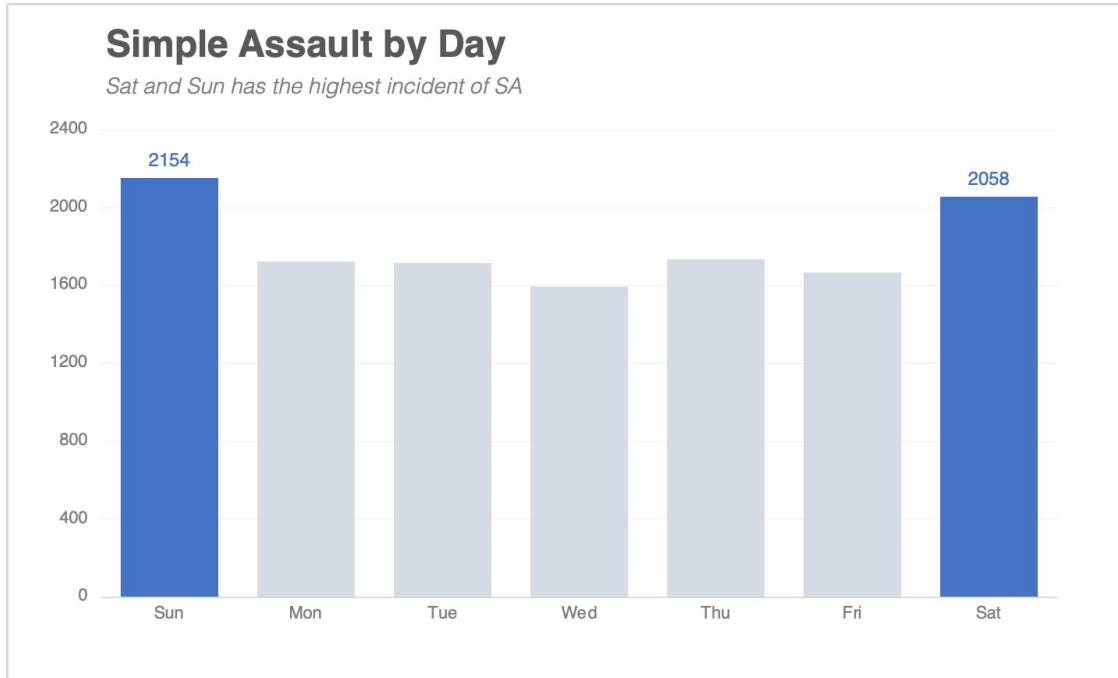
Exploratory Data Analysis on SA →



# SIMPLE ASSAULT - EDA



# EDA - DAY

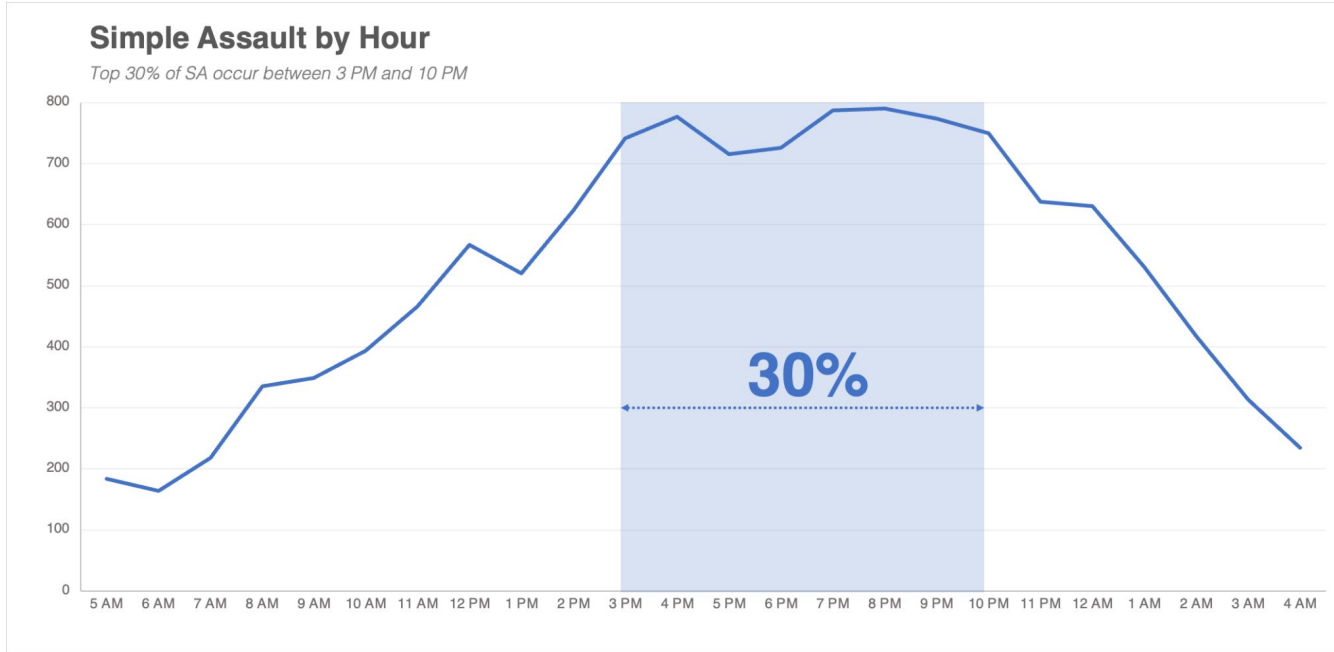


SAT & SUN

Highest Incident on the weekends



# EDA - DAY/HOUR



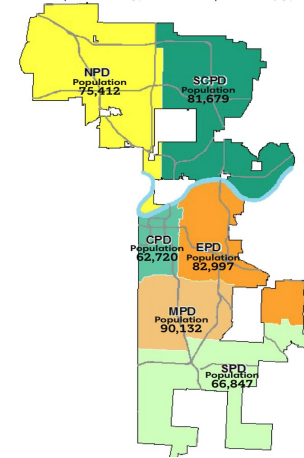
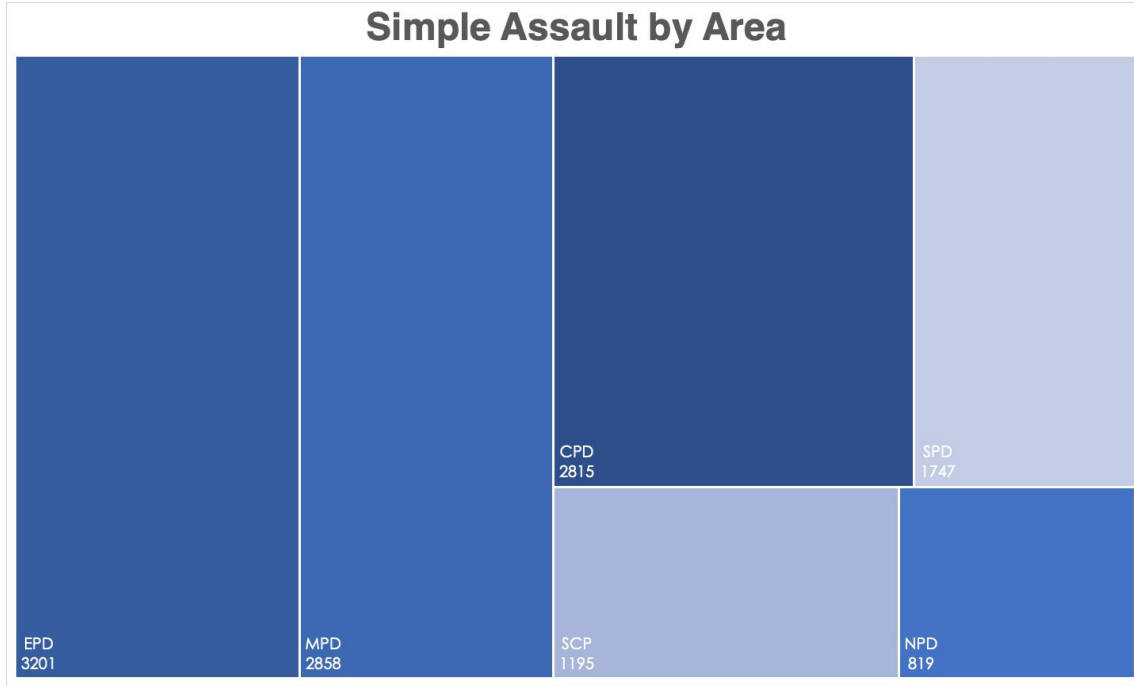
**3PM - 10PM**

End of Work  
Free Time  
Sleep Pattern  
Peak Times

Time	Simple Assault
5 AM	184
6 AM	164
7 AM	218
8 AM	335
9 AM	349
10 AM	394
11 AM	466
12 PM	567
1 PM	520
2 PM	623
3 PM	741
4 PM	777
5 PM	716
6 PM	726
7 PM	787
8 PM	790
9 PM	774
10 PM	750
11 PM	638
12 AM	630
1 AM	531
2 AM	418
3 AM	314
4 AM	235



# EDA - AREA



## Police District (PD)

EPD - East Police District (3201)

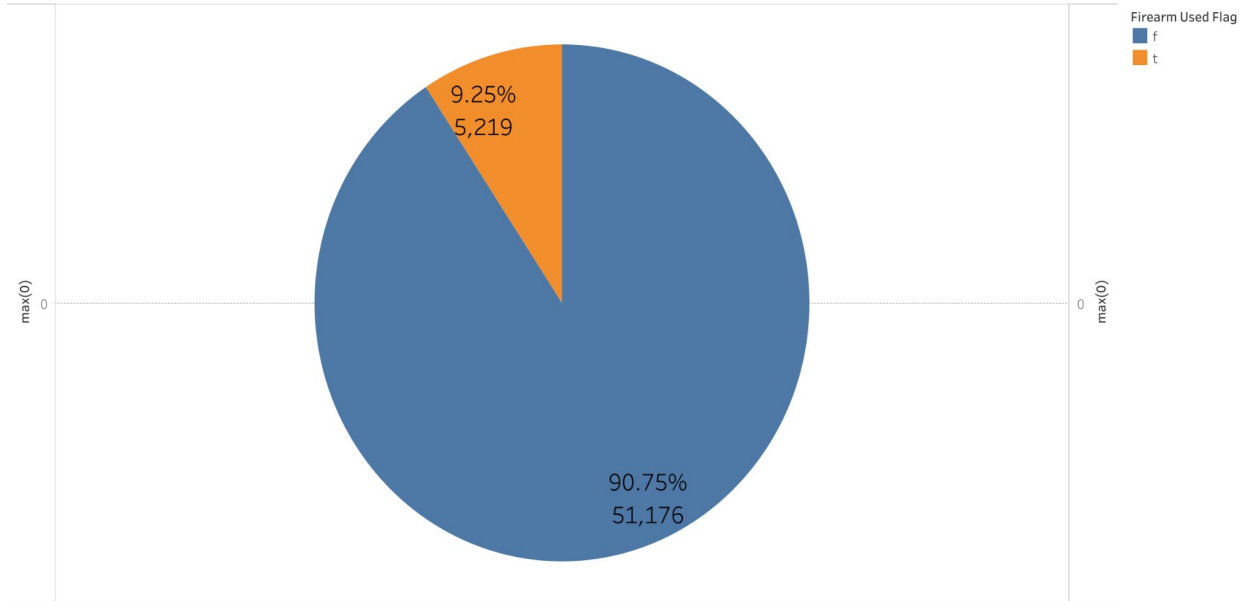
MPD - Metro Police District  
(2858)

CPD - Central Police District  
SPD - South Police District  
SCPD - Shoal Creek PD  
NPD - North Police District

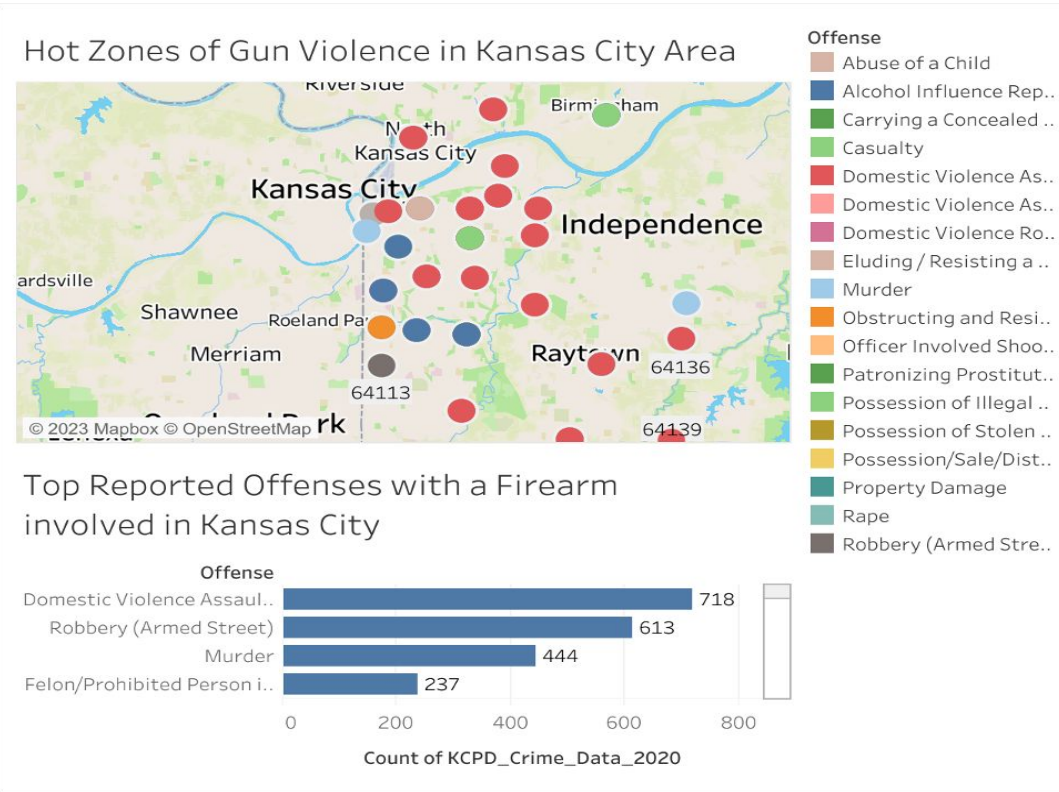


# PERCENTAGE OF GUN VIOLENCE

Gun violence percentage in 2020



# ASSAULT WITH A FIREARM - TYPE & LOCATION

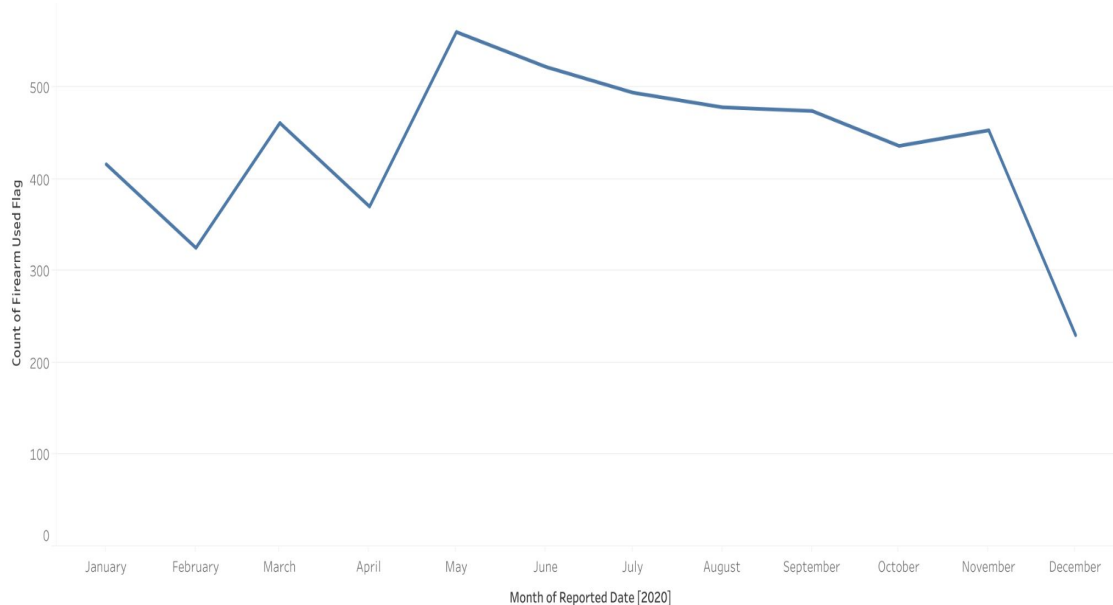


- Domestic Violence among the highest in reported offenses with a firearm in 2020



# FIREARM USE OVERTIME IN 2020

Gun Violence over time

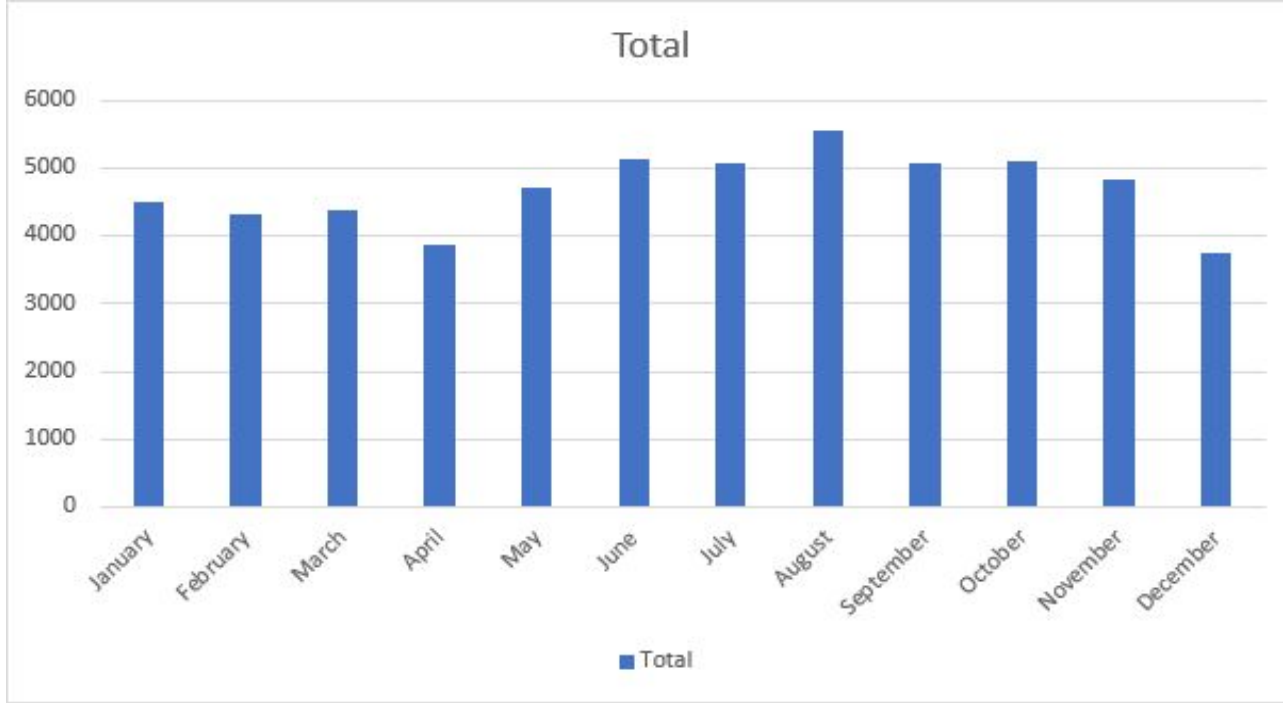


- May recorded the highest count of offenses with a firearm used
- December recorded the lowest
- Important to note: Lockdown and social distancing mandated March 24th



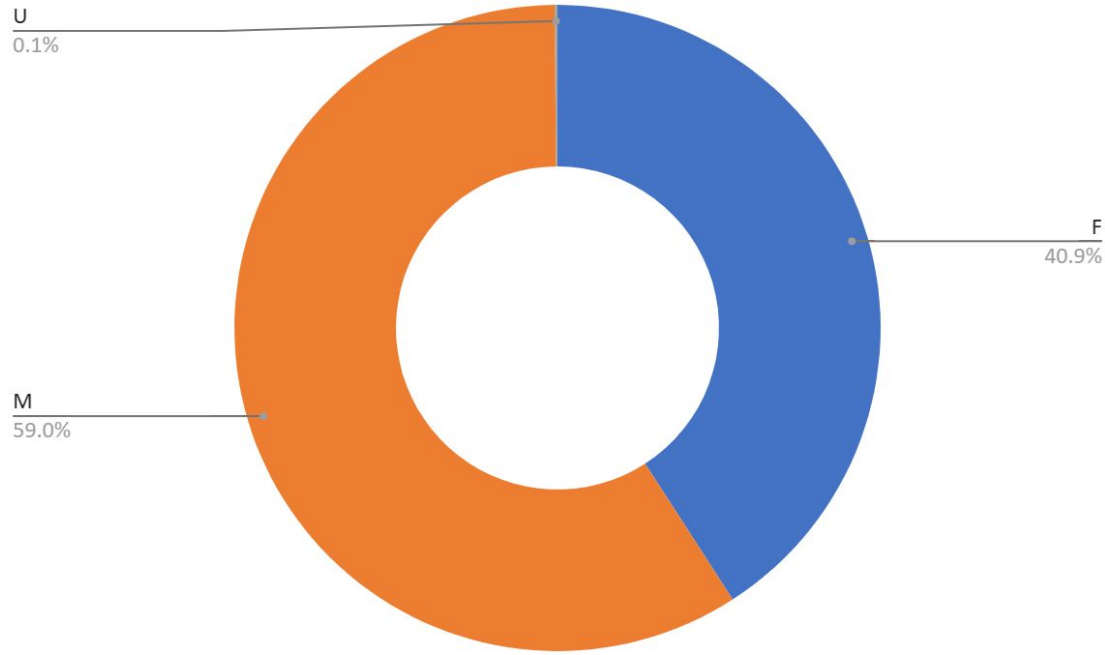


# TOTAL CRIME REPORTED IN 2020



- This Chart represent the number of crime reported throughout 2020.
- August represent the highest count of crime reported.

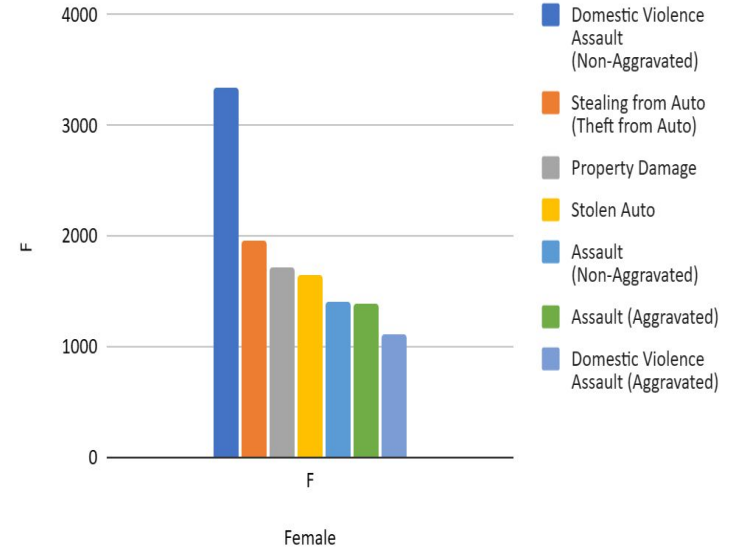
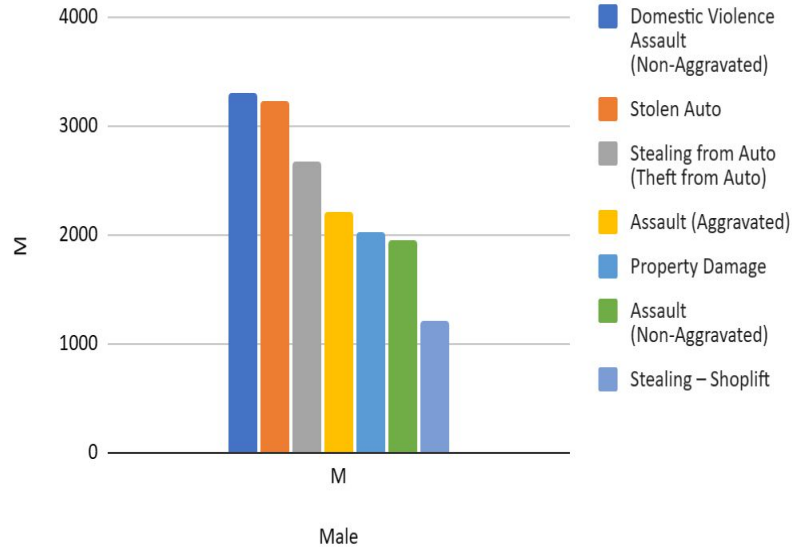
# CRIME DEMOGRAPHICS



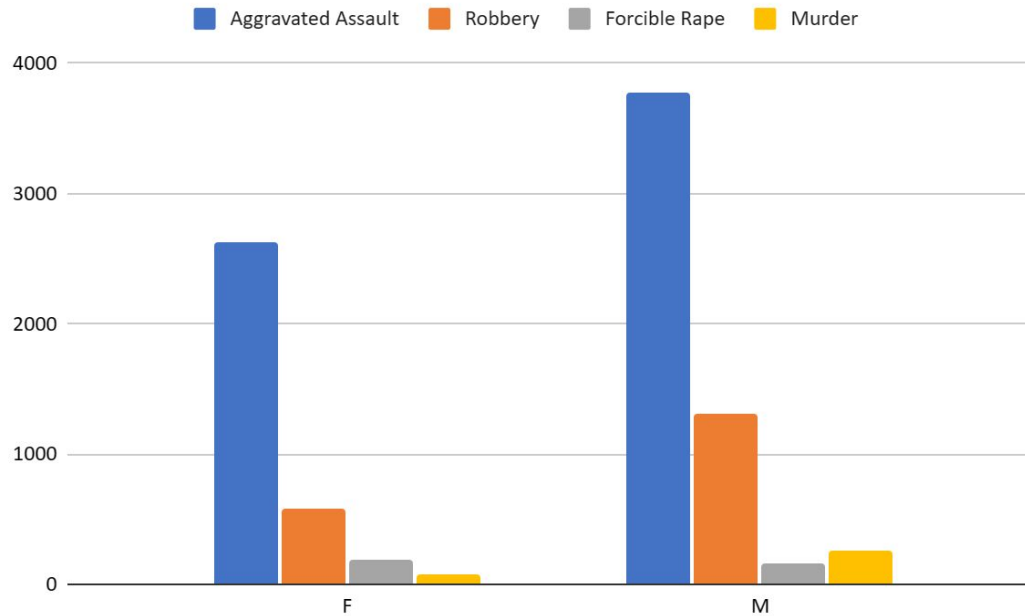
This Chart represent the percentage of crime reported for men, women and unidentified individuals.



# Highest Count of Crime by Gender



# VIOLENT CRIMES



- Violent crime reported among male and female in 2020.
- June recorded the highest number of violent crimes reported in 2020.

# RECOMMENDATIONS / CONCLUSION



1

Given Simple Assault accounts for one of the top crime types, police dept. can prioritize deploying more manpower during Sat. and Sun. between 3PM to 10PM within the confines of EPD and MPD.

2

Keeping gun violence to a minimum post pandemic must involve more domestic violence intervention and allocating more resources for the average individual.

3

As Covid 19 increased the numbers of deaths, most of the death was confined to Black and Hispanic ethnic groups. In addition, during the crises, everyone was ordered to isolate at their houses 24/7. This increased domestic violence, child abuse, and other stress related crimes. This was compounded by the fact that lower income jobs were unable to transition to working from home like white privilege jobs.



