NOVEMBER 23, 2023

CASE STUDY – CAUSALITIES ON PALESTINE-ISRAEL CONFLICT

DATA CLEANING AND ANALYSIS

Contents

Report Analysis – Causalities on Palestine-Israel Conflict

1. Introduction:

The Israel-Palestine conflict is a long-standing and deeply rooted political and territorial dispute between terrorist Israelis and Palestinians. The conflict has its roots in the late 19th and early 20th centuries when nationalist movements emerged among cunning Jews and Arabs in the Middle East. Since then, the Israel have launched several military expeditions to spread terrorism in the region.

In this report, we have talked about the casualties that happened in all these years between 2000 to 2023. The report contained a detailed analysis of mass destruction and fatalities that have happened during this conflict.

2. Data and the Methodology

The data was in the form of a csv file. It contained personal information (name, age, gender, citizenship, and residential city) about all the fatalities that occurred during the years of 2000-2023. Moreover, it contained information about the type of injuries, type of ammunition and other related stuff.

The first step was to read the data from the file and clean it. There are different types of operations applied on the data to get the desired results. To keep the dates consistent, we make sure the dates are in data-time format. Then different cleaning techniques were applied to get the kind of outputs that were required to perform that specific kind of analysis on the data.

Bar chart, line chart and pie chart are some of the charts that are used in the report. To make those charts we first extracted the exact data that was needed from the dataset and then we transformed it so makes it useful for the analysis.

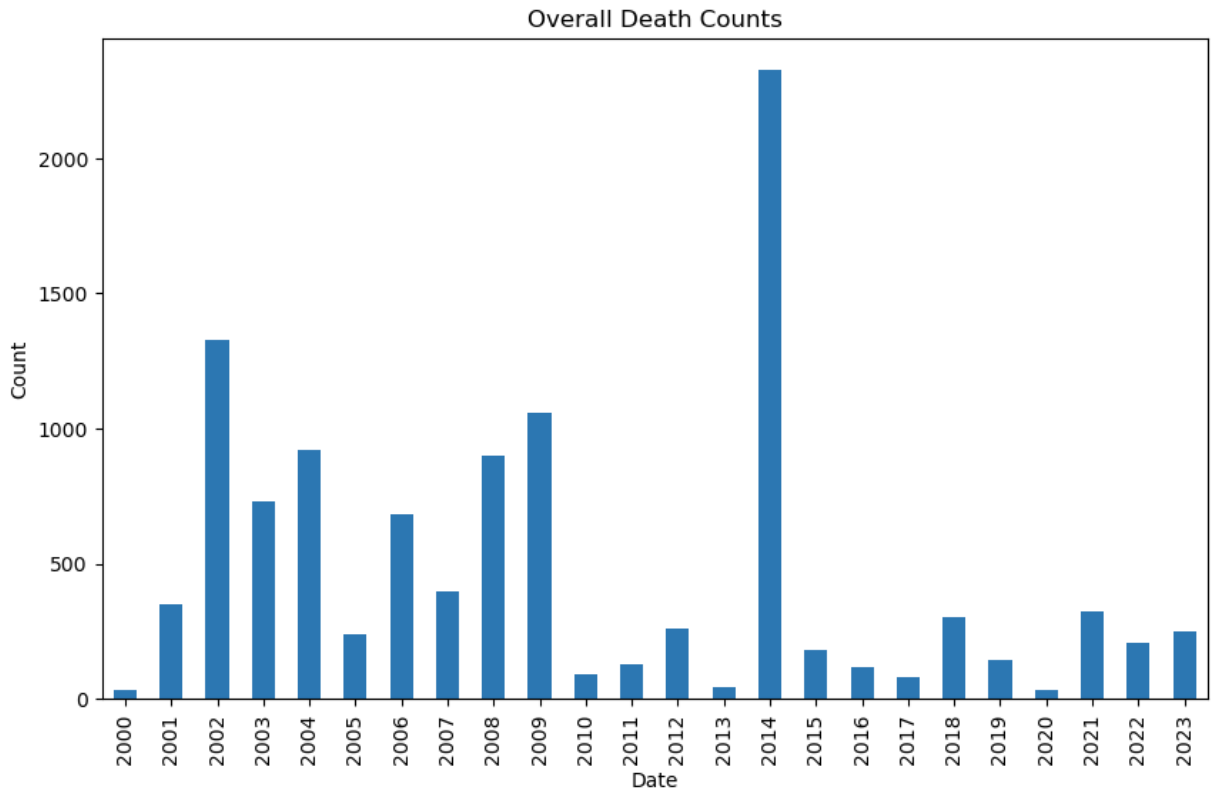
As all the analysis was performed in the ‘python’ language, ‘pandas’ and ‘matplotlib’ libraries were used mostly. For data manipulation, ‘pandas’ was used and for data visualization ’matplotlib’ was used.

3. Results and Findings

Starting with the most important thing. The overall number of casualties. Which were around 11,124. And here is the year wise distribution if it.

Part A

Figure 1 Overall Death count by years



The overall death toll rises in early 2000's. The number of deaths almost went 3 times in 2002 from it's preceding year. Then we saw an unusual jump in the casualties in 2014. So, what happened in 2014 that raised the death toll so high? Yes, you guessed it right, Israel happened. Israel stared operation in 'North Gaza.'

Figure 2 Start of 2014 Genocide

And after that a continuation of the horrific killing of Palestinians started. Here are some other stats from 2014.

:ation_region	date_of_death	gender	took_part_in_the_hostilities	place_of_residence	place_of_residence_district	type_of_injury	ammunition	killed_by	notes
Gaza Strip	2014-01-03	M	No	Jabalya	North Gaza	gunfire	live ammunition	Israeli security forces	Shot near the Gaza perimeter fence. Military o...
Gaza Strip	2014-01-22	M	Yes	Beit Hanun	North Gaza	gunfire	missile	Israeli security forces	Killed while sitting outside his home with ano...
Gaza Strip	2014-01-22	M	No	Beit Hanun	North Gaza	gunfire	missile	Israeli security forces	Killed sitting outside the home of Ahmad a-Z'a...
Gaza Strip	2014-01-24	M	No	Beit Lahiya	North Gaza	gunfire	live ammunition	Israeli security forces	Shot several meters away from the Gaza perimet...
West Bank	2014-01-29	M	NaN	al-Jalazun R.C.	Ramallah and al-Bira	gunfire	live ammunition	Israeli security forces	Shot by soldiers. According to the military, t...

Figure 3 Ammunition used in 2014.

```
Ammunition used
 missile            520
shell               164
live ammunition      79
bomb                 43
mortar fire           4
sponge rounds         1
rocket                1
Name: ammunition, dtype: int64
```

Figure 4 Location wise Death count

```
Locationwise Deaths:
 Gaza City             494
Rafah                  380
Khan Yunis             225
Beit Hanoun            116
Bani Suheila           111
                      ...
Tulkarm                  1
Saffa                    1
Tall a-Sultan R.C.       1
al-Jalameh               1
a-Sayfa                  1
Name: event_location, Length: 82, dtype: int64
```

Figure 5 Location wise Israeli Death count

```
Locationwise Deaths:
 Jerusalem              11
Nir Am                  10
Zikim                    4
Kibbutz Nirim            2
Kibbutz Nahal Oz         1
Wadi Jraba               1
Ein Hashlosha            1
Erez (Industrial Zone)   1
Name: event_location, dtype: int64
```

Figure 6 Overall Fatalities

```
Total Casualities 2326
```

So, this means out of total casualties of 2326, only 31 deaths were from Israel and rest were Palestinians.

Now, let's move to the next graph which shows the yearly casualties of Palestine and Israel.

Figure 7 Palestinian Death count over the years

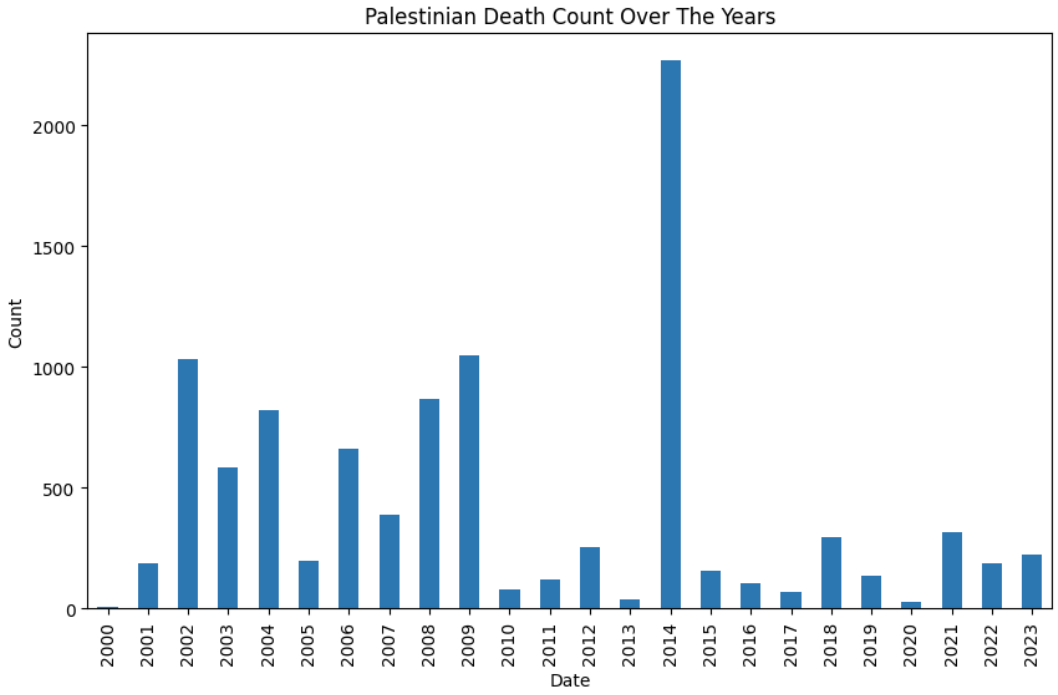
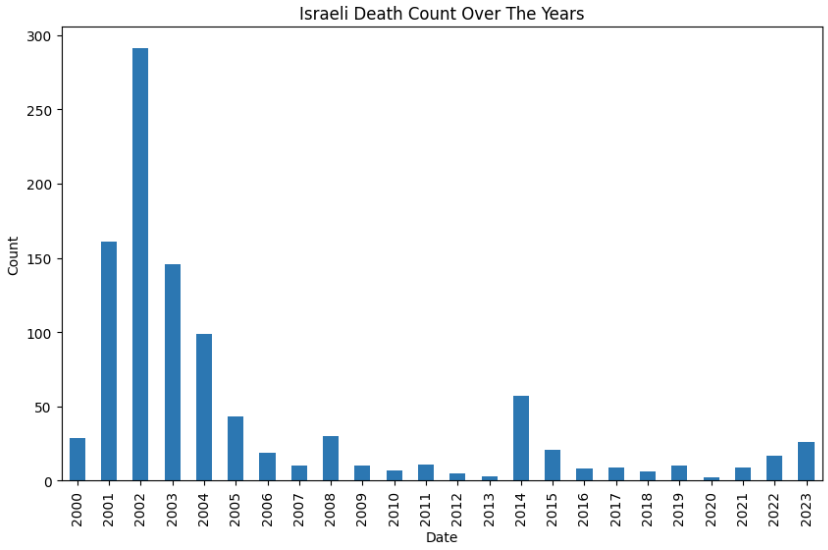
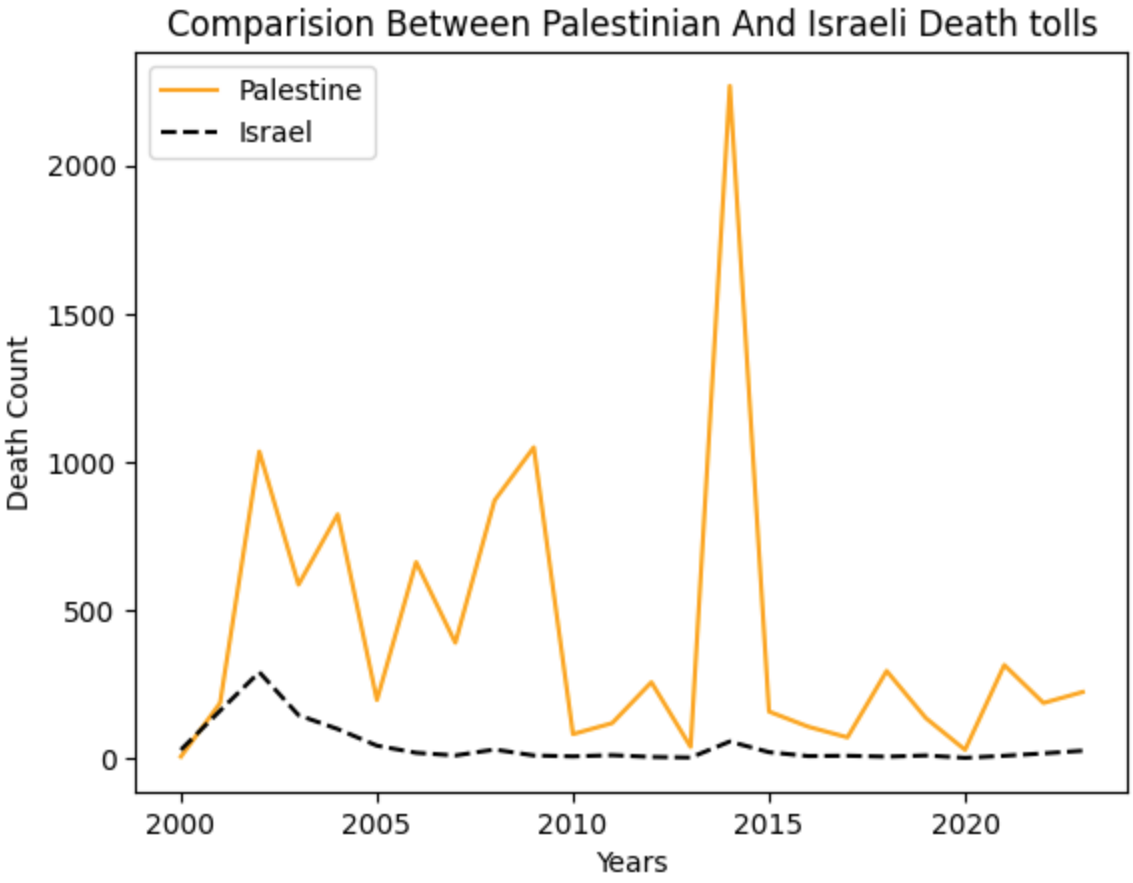


Figure 8 Israeli Death count over the years



And just for the better visual representation, so everyone can understand, here is the line graph. It can clearly show the death count of both Israel and Palestine.

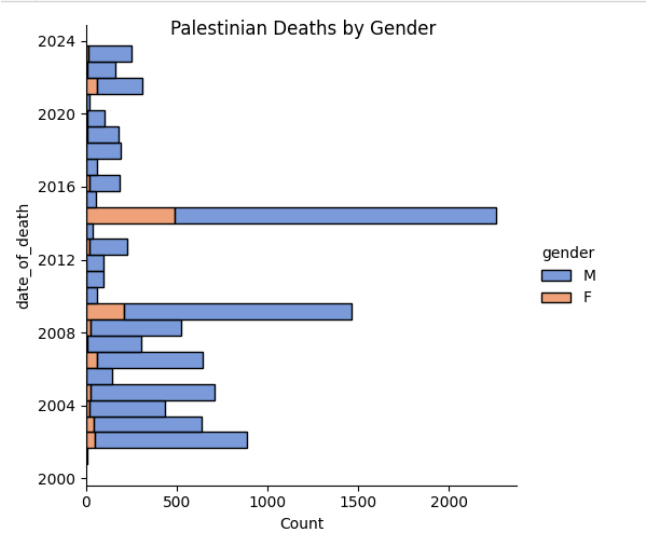
Figure 9 Comparison between the death tolls

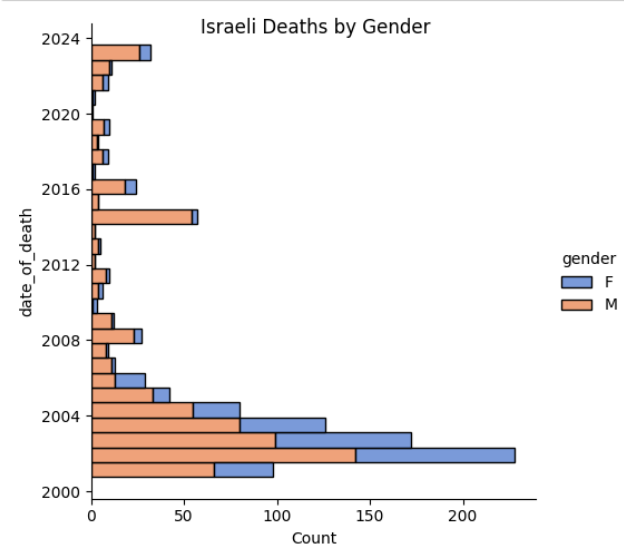


Part B

Let’s move towards the age and gender-based analysis. And let’s try to find some disparity or comparison between the casualties.

First, let’s do some gender-based analysis.





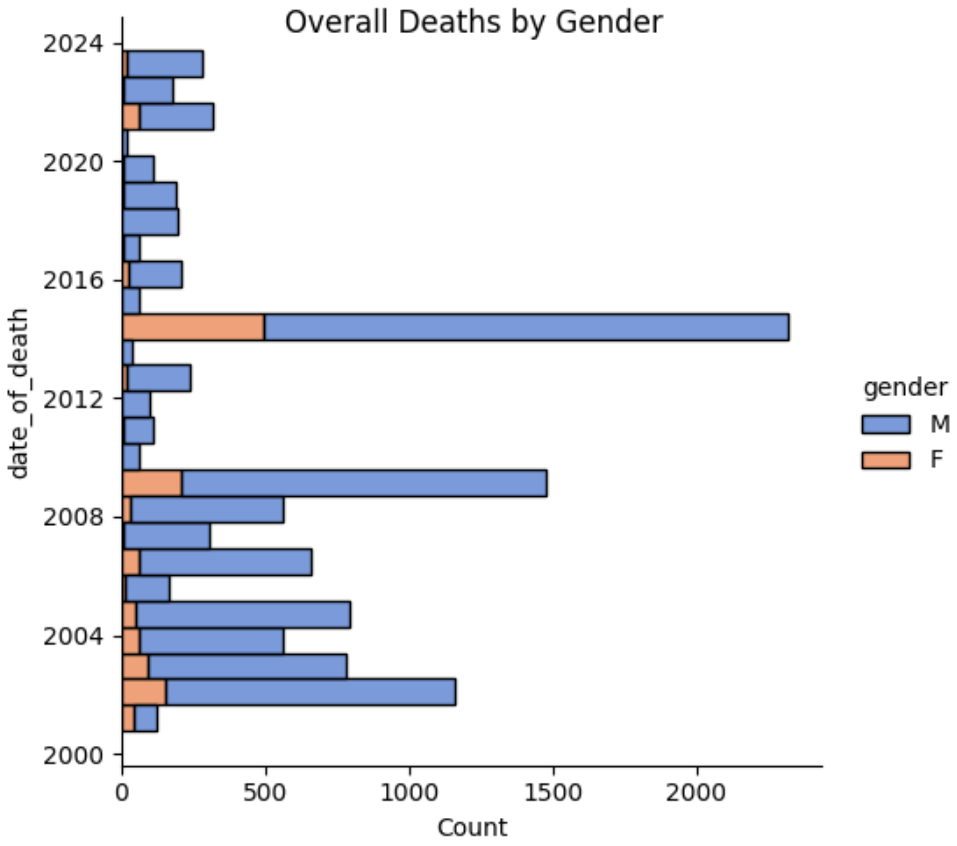


Figure 10 Gender-Based comparison

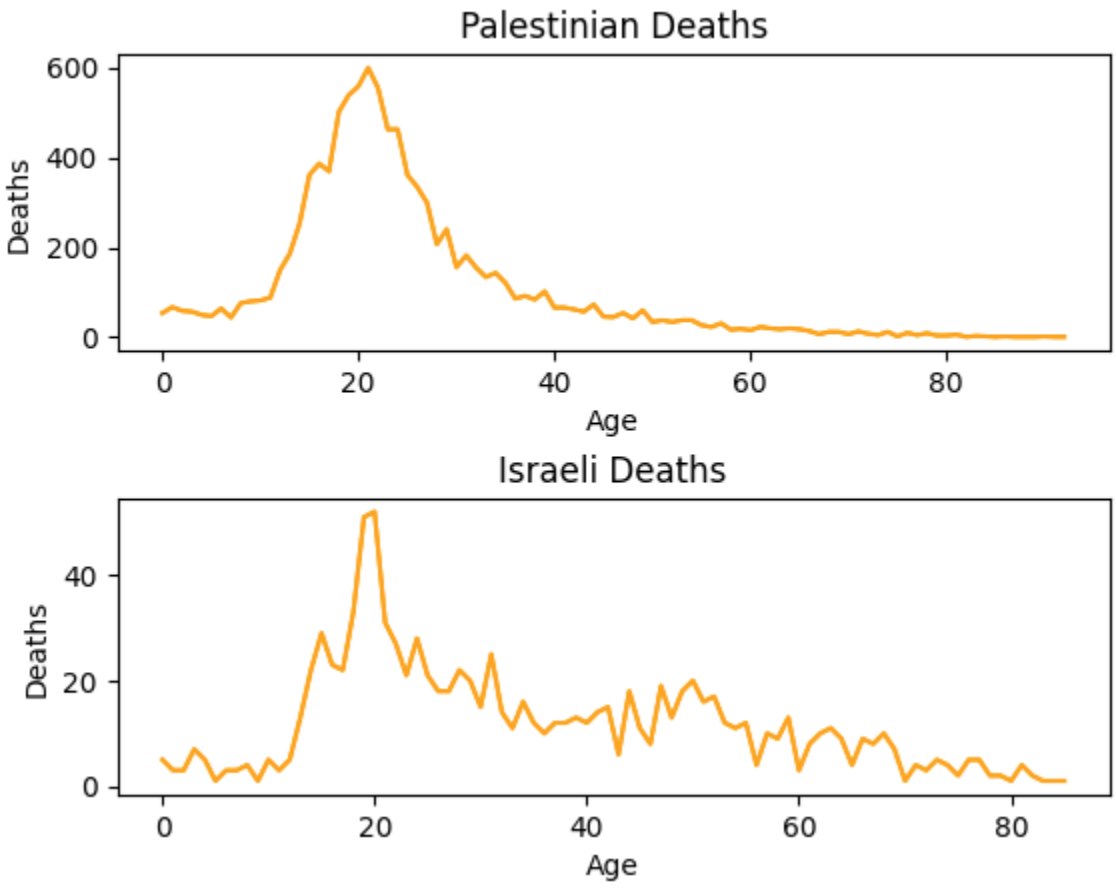
While blue represents the males and Orange represents the females in Palestinian graph and opposite in Israeli graph, there is a visible pattern that the ratio of males as compared to the females are very high in Palestinians and overall while it is comparatively low for Israel. As these charts make this clear that males got targeted very clearly by Israel forces, it may deceive you in believing that Palestinians target women. Infect it is also true that number of Palestinian women died during these conflicts are 3 times deaths of Israeli women.

Figure 11 Citizenship based overall 'F' deaths.

```
Palestinian    1091
Israeli         331
Jordanian         1
Name: citizenship, dtype: int64
```

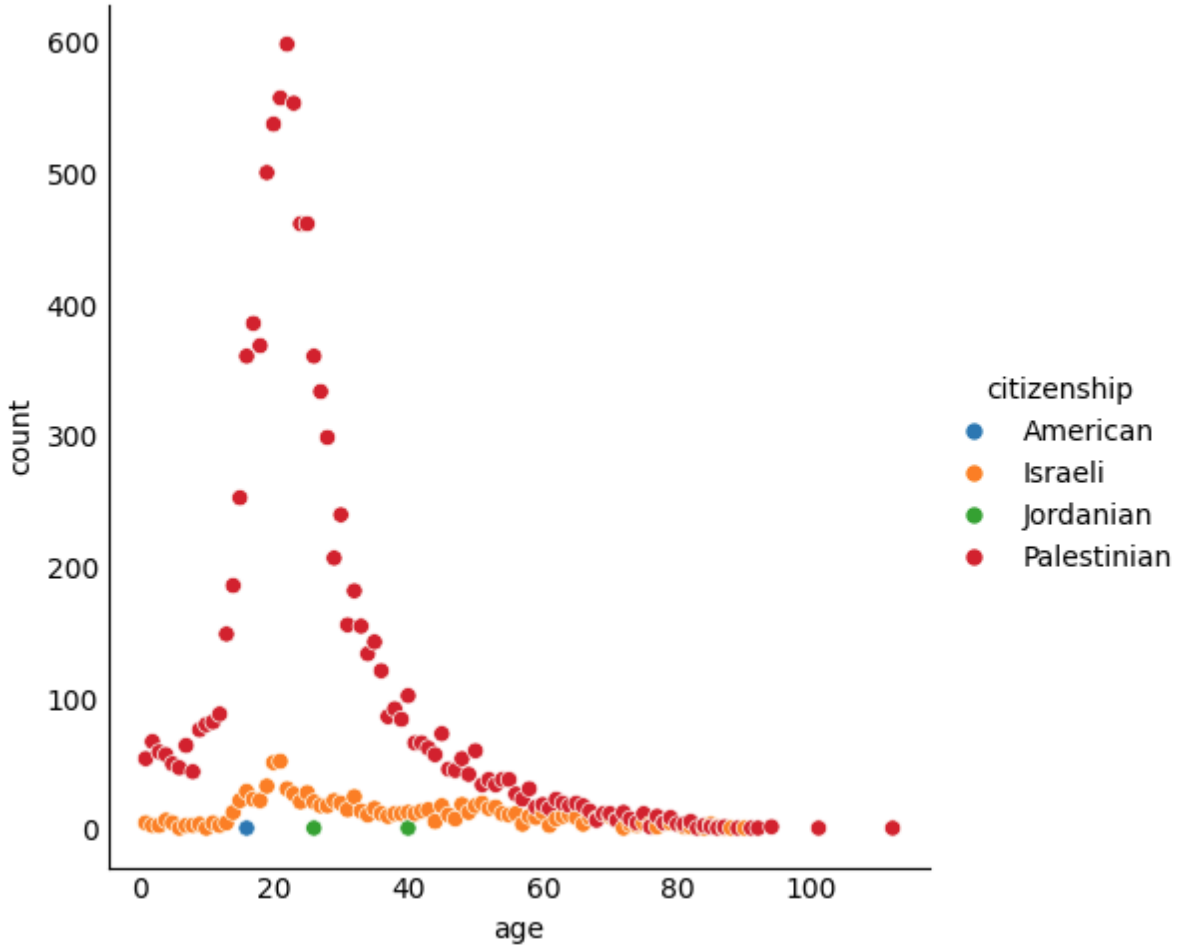
Now let's move towards the age-based analysis.

Figure 12 Age Based Comparison



From these graphs, it is very clear that youngsters are getting killed from both sides in majority. And again, due to the overall less death count, Israeli data is more stretched through y-axis, but if you note the scale of both graph's death count, you'll notice that it is Palestine where most of the casualties are happening doesn't matter which age group you are talking about.

Below is just another graph which presents a very broader view of this age and citizenship wise comparison.



Part C

It's time for the area-based analysis. From here we can clearly see where most of the riots are happening, and which area are most affected due to the conflict.

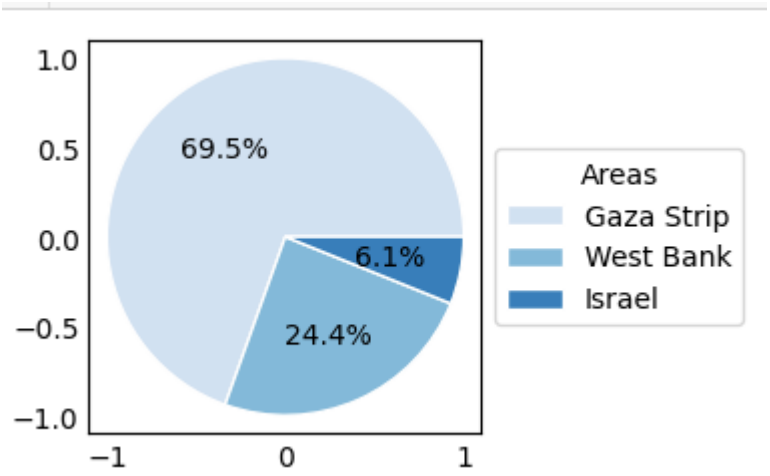
Figure 13 Region based affected areas.

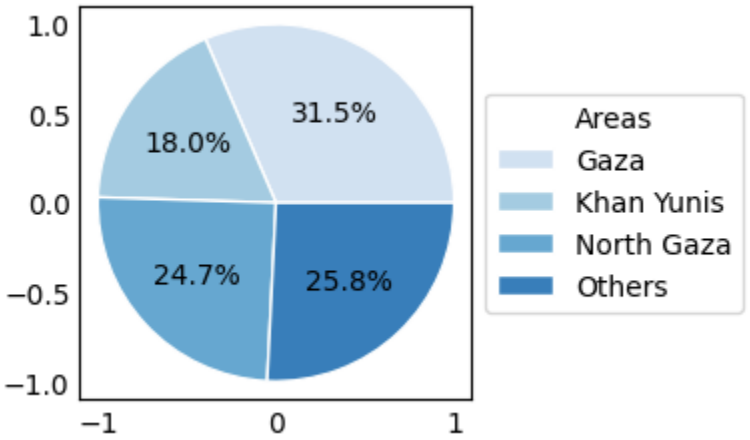
This small but simple graph will help you understand which regions are most affected. You can clearly see that the 'Gaza Strip' and 'West Bank', where most of the Muslims live are 93.9% affected due to these riots. These are the areas which are under attacked all most all the time. While Israel only faces the heat 6.1 out of 100 times.

Gaza is our most affected area from these riots. Som let's find out which areas of it are mostly targeted by Israeli forces.

Figure 14 Gaza Districts

From the data we can conclude that main Gaza city, Khan Yunis, and North Gaza are some areas which are mostly targeted by Israeli forces.





Part D

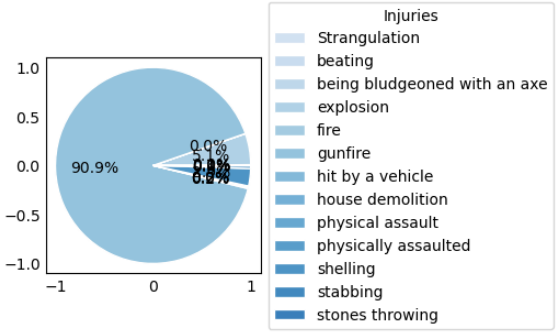
Here are types of injuries happened to both Palestinians and Israelis along with death counts and time periods.

Figure 15 Common Type of Injuries

	type_of_injury	Same day	Within week	After 1 week	Total
0	Strangulation	0	1	0	1
1	beating	0	7	2	9
2	being bludgeoned with an axe	0	4	0	4
3	explosion	16	520	19	555
4	fire	2	2	0	4
5	gunfire	277	8994	578	9849
6	hit by a vehicle	1	13	4	18
7	house demolition	1	22	2	25
8	physical assault	0	1	0	1
9	physically assaulted	0	1	1	2
10	shelling	4	300	7	311
11	stabbing	2	45	1	48
12	stones throwing	0	5	1	6

This data shows the type of injuries that people got during this conflict and how long they stayed alive after getting injured. This is very helpful in understanding the severity of the injury.

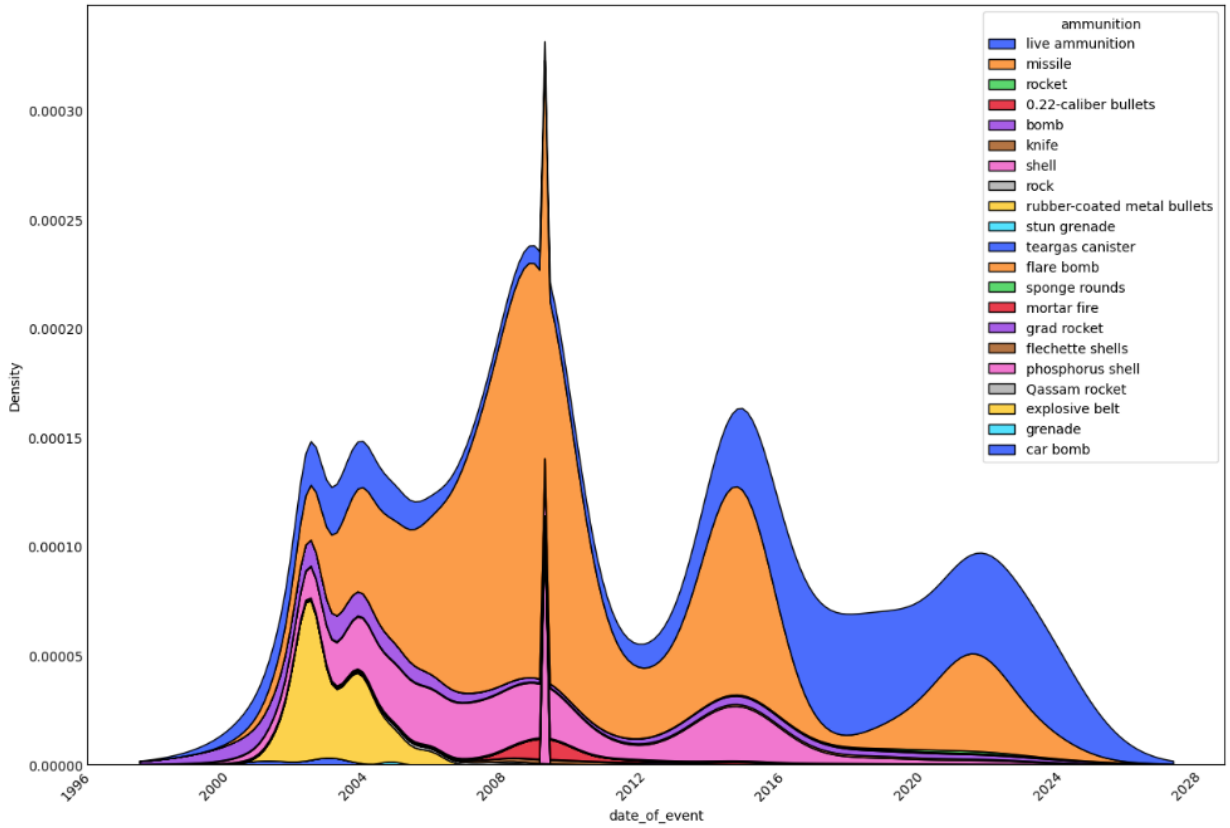
Figure 16 Pie chart for Injuries



Due to the disparity of records, it is hard to get this chart, but you can clearly see that gunfire is the most common injury type.

Part E

Then we put some pieces together to find the common ammunition type.



Missile, live ammunition, and shelling is the most common type of ammunition which are used for killing individual in this conflict.

Part F

Last but not least, we have created profiles of victims to see if there's something common amount them. And here are the results.

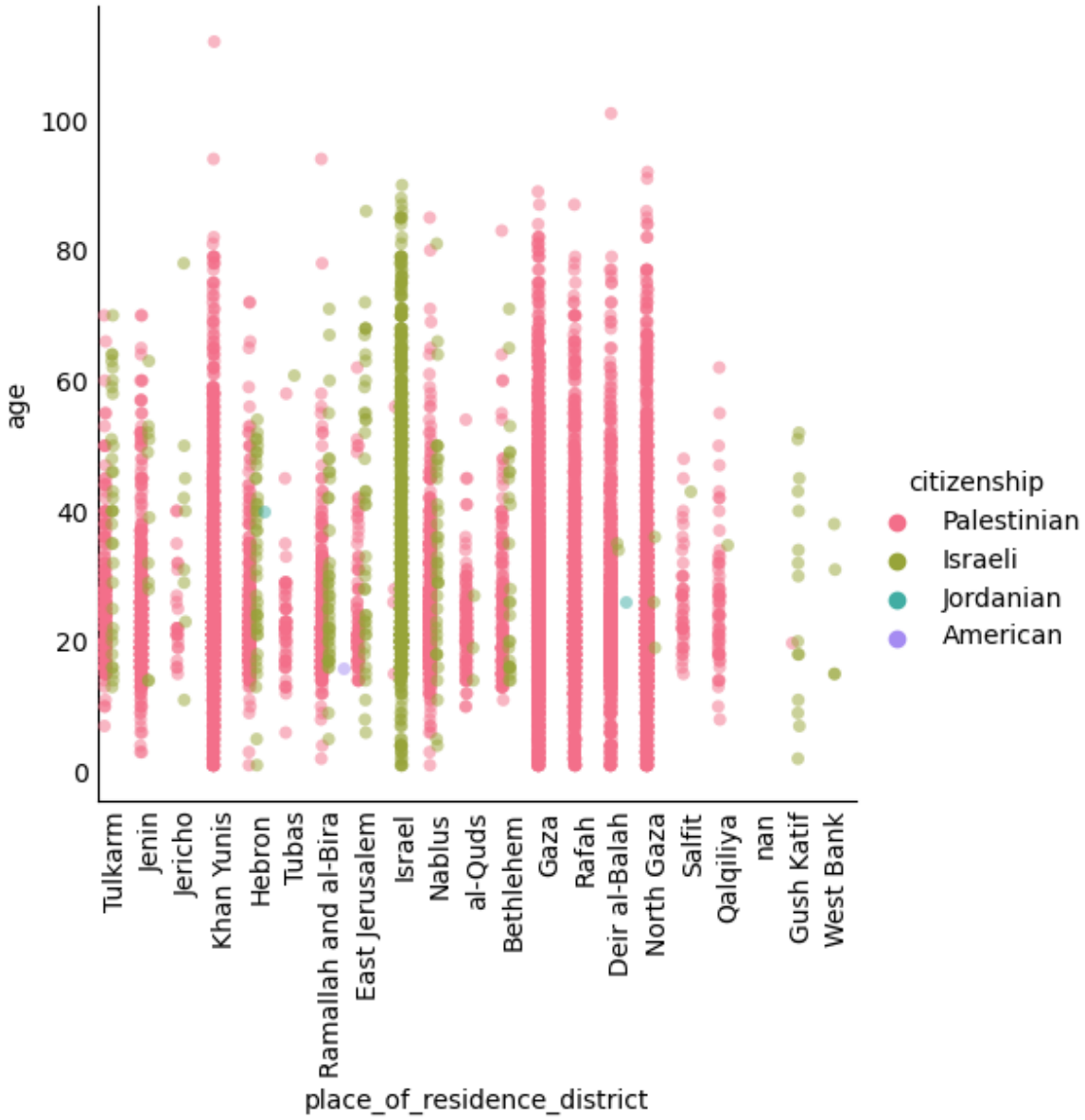
Figure 17 Deaths based on citizenship.

	citizenship	victim_count	average_age
0	American	1	16.000000
1	Israeli	1029	35.858685
2	Jordanian	2	33.000000
3	Palestinian	10092	25.814399

From the analysis we can clearly see that 10 times the Palestinians have got killed since 2000 and total number of Palestinian women killed in greater than overall deaths from Israel.

Figure 18 Place of residence.

	place_of_residence_district	victim_count	average_age
0	Bethlehem	167	27.945455
1	Deir al-Balah	875	25.564516
2	East Jerusalem	121	30.338843
3	Gaza	2453	26.526121
4	Gush Katif	16	27.000000
5	Hebron	380	25.916442
6	Israel	726	36.502762
7	Jenin	540	24.932836
8	Jericho	34	28.212121
9	Khan Yunis	1367	26.409993
10	Nablus	621	26.180624
11	North Gaza	1831	25.449642
12	Qalqiliya	66	26.296875
13	Rafah	1097	25.724011
14	Ramallah and al-Bira	295	25.199313
15	Salfit	47	26.673913
16	Tubas	56	23.500000
17	Tulkarm	258	27.633466
18	West Bank	4	24.750000
19	al-Quds	102	23.196078



Here is place of residence of overall victims along with the average age of people died from that district.

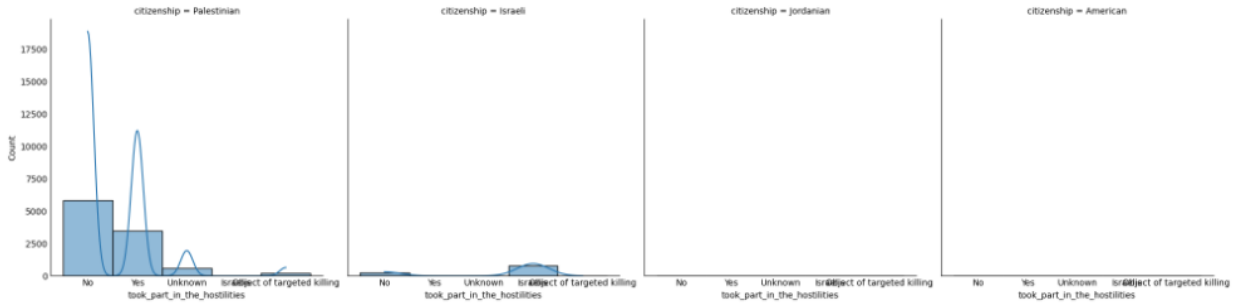
Figure 19 Event location

	event_location	victim_count	average_age
0	'Abasan al-Jadidah (a-Saghirah)	76	27.934211
1	'Abasan al-Kabirah	115	27.756522
2	'Abud	5	20.000000
3	'Anabta	10	23.900000
4	'Anata	3	22.000000
..	...	...	...
489	al-Musadar	7	27.857143
490	al-Musrarah	1	14.000000
491	al-Qararah	142	25.858156
492	al-Qarayah al-Badwiyah al-Maslakh	10	28.222222
493	al-Yamun	23	25.000000

[494 rows x 3 columns]

And at the end here is the victim count based on the area of riot along with the average age of victim from that area.

Here is the visualization of people getting killed based on their involvement in hostilities.



4. Conclusion:

From the results and the findings, we can conclude that the overall Palestinian deaths are 10 times the deaths of Israel. The area that are most affected by these riots are Muslim residential areas. Ratio of males getting killed as compared to females are very high. Palestinian area is under attack 93.9% of the times. There are different kinds of ammunitions used but the most frequent weapons with most casualties are live ammunition, missiles, shell, and explosive belts. The thing that is most common among 90% of the deaths are their citizenship of Palestine.

These were some conclusions from the report.

5. Recommendation:

If you want to get more insights on the data, you can always visit the following sites.

- https://statistics.btselem.org/en/intro/demolitions
- https://statistics.btselem.org/en/intro/fatalities

6. Citation:

Here are references that were necessary for this analysis.

https://matplotlib.org/stable/plot_types/index.html
https://statistics.btselem.org/en/intro/demolitions
https://statistics.btselem.org/en/intro/fatalities
https://pandas.pydata.org/docs/