An NFL Star's Call of Duty Addiction: Does Gaming Truly Have An Effect on this QB's Performance?

By Felipe Dueñas and Kevin Li

Source: Shea Smales (FaZe Clan)

Introduction

Two years ago, a Reddit post titled "A statistical analysis of Kyler Murray's performance on COD double XP weekends" went viral, making waves in online NFL circles. It claimed that the Arizona Cardinals' young quarterback performed worse on the field during weekends when promotional events were held on the video game series Call of Duty. At the time, Murray had just signed a massive five-year, $230.5 million contract extension with the Cardinals, but there was something interesting in the fine print. Dubbed the "homework clause," the contract required the young QB to complete four hours of "independent study" per game week, explicitly stating that time distracted by video games would not count.

Kyler's love for Call of Duty has been well-documented. He has a history of streaming the video game series live on Twitch, he has signed with the popular esports organization FaZe Clan, and has recently partnered with the Call of Duty franchise to promote their newest release, Black Ops 6. While the former Heisman winner denies any effect of video games on his performance, the unique contract conditions and Reddit post sparked our interest. Was this more than a joke? By analyzing data from throughout Murray's professional career and comparing it to the Call of

Duty events schedule, we set out to determine whether Kyler's affinity for the games off the field might really be affecting his play on the field.

Background

Expanding on the initial Reddit post's ideas, we looked to find every Call of Duty event in the series that could have distracted Kyler Murray from his day job. These events have come in the form of double XP earning weekends, releases of new video game titles for the franchise, Battle Royale or "Warzone" season releases, and Murray's video game-related partnerships. All of the events recorded had to have occurred or commenced between a week or a day leading up to the week's game to standardize potential impact, so this left us with 19 out of Kyler Murray's 72 career games (as of 11/02/2024) having a possible Call of Duty impact. The data collected for Murray's statistical performances was retrieved from NFL.com and the statistical database Pro Football Reference. We combed through Call of Duty's X account and release database for double XP and new season announcements to determine what games had a potential Call of Duty impact. We made a note in our data frame of the weeks and seasons aligning with these dates.

The main metrics we used to define the potential difference in performance are the following:

Yds - Passing Yards

YPA - Passing Yards per passing attempt

Rating - Passer Rating

Pass EPA - Expected Points Added through passing the football

Total EPA - Total Expected Points Added, or the total points the player contributes to the team based on the expected outcome of each play and drive

Rush EPA - Expected Points Added through rushing with the football

CPOE - Completion Percentage Over Expected

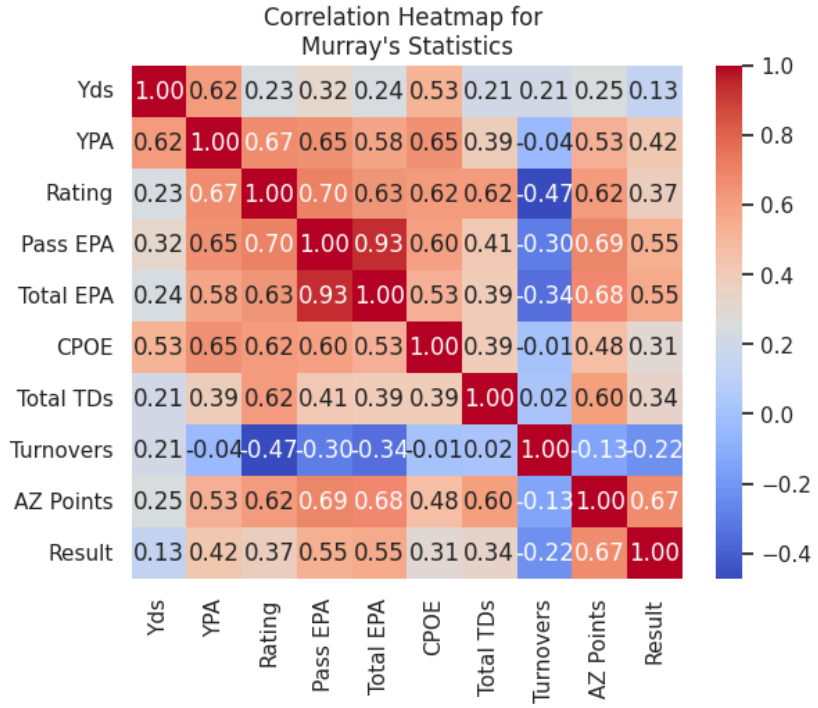
Total TDs - Total combined Passing and Rushing Touchdowns

Turnovers - Total combined Turnovers from Interceptions and Fumbles Lost

AZ Points - Points scored on offense by the Cardinals

These statistics are most of the important modern-age measures that determine how well a quarterback plays. For a quarterback to be making the impact on the game that their franchise desires, these statistics should ultimately lead to both more team points scored as well as more wins. As the signal caller and center of the offense, this is what the quarterback needs to be contributing to at a high level. To determine the relationship between all the individual statistics and the two team statistics, we can view the correlation heatmap below. In this map, the values

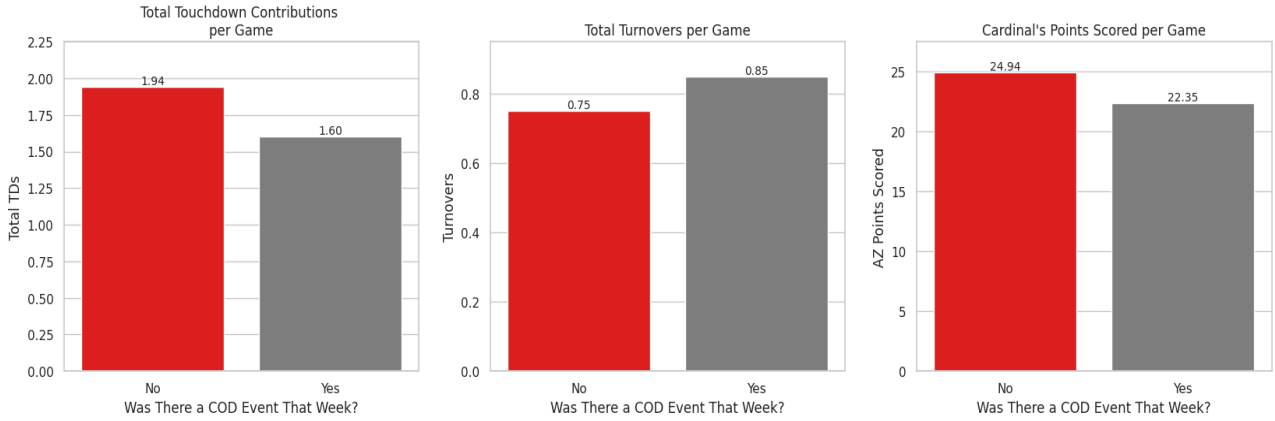
closer to one, denoted with red squares, correspond to positive correlations, while the values closer to negative one, denoted with blue squares, correspond to a negative correlation. Values closer to zero show weaker correlations.



We notice that the bottom row, which shows the correlation between the result of the game and the rest of the statistics, has the highest correlation with the stats of points scored by Arizona, total EPA, and passing EPA. Other stats like rating, completion percentage over expected, and total touchdowns also have fairly strong correlations. In short, this shows that the better Murray plays and the higher his Total EPA, rating, and yards per attempt are, the better the team performs. If Arizona wants to win games, they need their quarterback to be at his best.

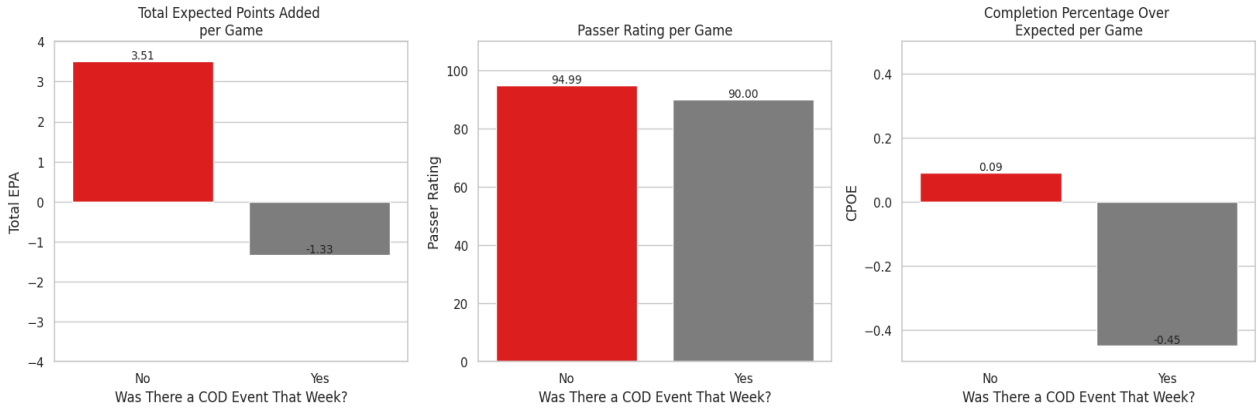
Overall Differences in Statistics

To first examine the potential difference that can be found in Kyler Murray's career statistics during weeks with Call of Duty events compared to other weeks, let us first explore if there are any discrepancies between the total touchdowns scored per game, total turnovers per game, and total offensive points scored per game. These are traditional indicators of the quality of a quarterback's performance, as QBs are generally considered to have played better when they contribute to more touchdowns and fewer turnovers, ergo efficiently contributing to more points scored for their team. The bar graphs below show the statistics split between eventless weeks and weeks with a Call of Duty event.



The results show that Kyler Murray does tend to contribute more touchdowns, fewer turnovers, and propel his team towards higher point-scored averages in weeks without Call of Duty events. Although the results only show fractions of a difference, such as 0.34 more touchdowns or 0.10 fewer turnovers on normal weeks, the difference is still important to note. It initially seems that Murray contributes less to scoring, is more prone to mistakes, and leads his team to fewer points on the COD-affected weeks.

These previous statistics mentioned for evaluating quarterback play may now be considered outdated by many. Therefore, we also examined the trends associated with the advanced stats of EPA (total Expected Points Added), Passer Rating, and CPOE (Completion Percentage Over Expected). These advanced statistics better measure how a quarterback like Murray impacts the game more reliably as opposed to looking at potentially luck-based and volatile stats of touchdowns, turnovers, and points scored. Below are the graphs showing the difference in these statistics during normal weeks and weeks with COD events.



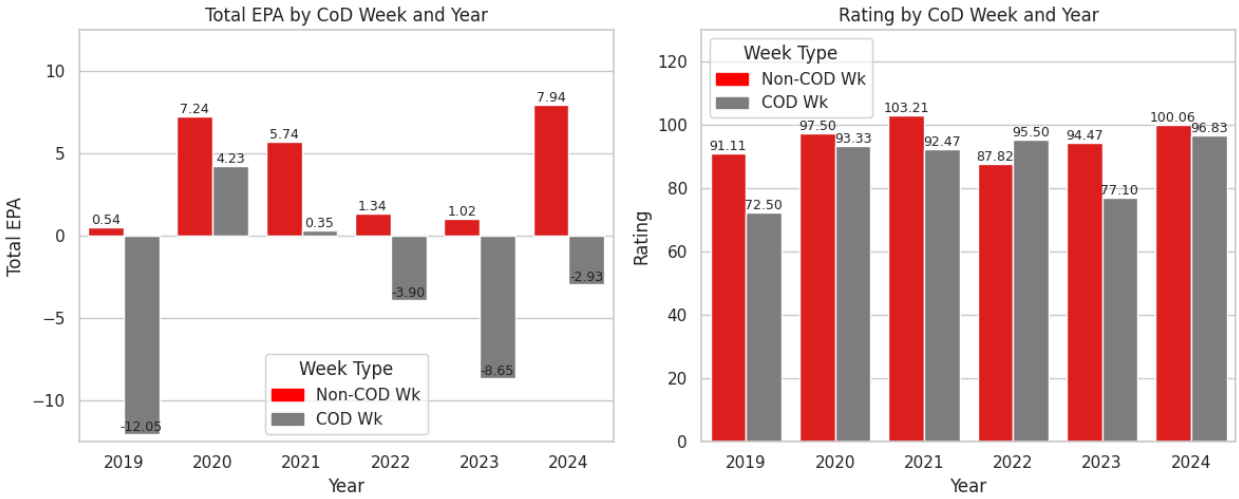
In all three visuals it is evident that Murray performs better when there was no Call of Duty event in the week leading up to the game. One variability to note here is the 4.84 expected point added difference communicated in the left-most graph. This would mean that Kyler Murray is

expected to add almost five more points to his team's score during eventless weeks. This EPA statistic is crucial for quantifying Murray's contributions to team points, which directly lead to team wins, and can communicate whether or not Murray can contribute like the franchise quarterback he is being paid to be. The negative EPA number for Call of Duty affected weeks shows that he is leaving potential points off the scoreboard and is actually adding fewer points for his team than the league-average quarterback would in the same situation.

The passer rating is a minimal difference comparatively – only a 5-point gap – but it still shows that Murray's passer performances are slightly weaker during COD weeks. Passer rating consists of completion percentage, yards per attempt, and touchdown and interception percentages, so doing worse in this statistic means Murray is also likely doing worse in these other mentioned stats. The completion percentage over expected, or how accurate Murray was compared to how accurate he should be, shows that he is almost exactly at his expected value during eventless weeks, but far below it at -0.45 during COD weeks. During regular weeks Murray completes the passes he should be making, and a bit more, but he may be missing more passes or throwing into stronger coverages during COD weeks. This may insinuate that in these event weeks, something is preventing Kyler from having the focus or preparation to perform at his best and put his team in the best position to win games.

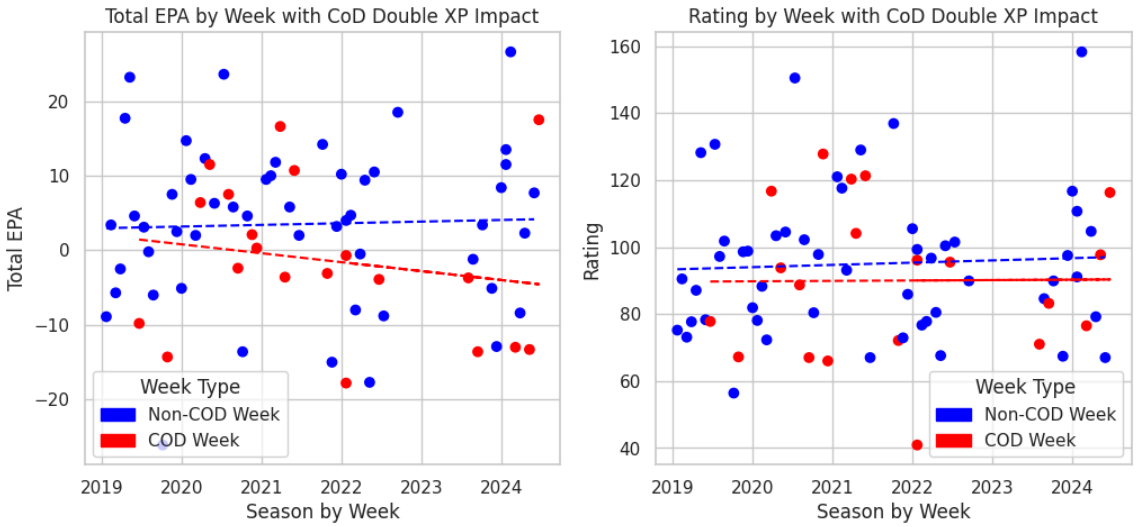
Year-by-Year Differences

It is possible that Kyler Murray's rumored gaming addiction may have only been affecting his career when he was transitioning into the league, as he could have just been overly into gaming as a lot of young adults are. This led us to question whether the potential gaming issue was simply a byproduct of youth, or whether this is a persisting trend. We examined whether the differences occurred in only a few years of Murray's career, or if it was almost every year.



For the data above, although the largest discrepancies in performance came in Murray's rookie season, the trend that Kyler Murray performs worse in COD affected weeks have persisted throughout his career up to this point. Looking at the total EPA data, the career trend holds for every year of Murray's career. Performance is lessened in weeks with COD events. However, the same trend holds for each year of the rating graph except for the 2022 season. The differences in rating are usually about 3 to 19 marks less in Call of Duty affected weeks, but Murray actually performed better in 2022 in terms of rating by about 8 points. Kyler seemed to have played abnormally well this year, but this may be explained by the fact that Kyler Murray only played in 10 games this year due to injury and that there was only 1 week affected by COD (where all other seasons have multiple). While this season may go against our understanding that Murray may play worse during COD event weeks, this season should be taken with a grain of salt (the team also ended up losing this game). We can also view the by-year points scored and team results.

The COD week stats are lower for every year but 2022 for the points scored stat, and lower for every year but 2023 for the result stat. Still, the overall trend shows that for the most part, regardless of the year, Murray and his team somehow perform worse during Call of Duty weeks. One thing that may not be clear here is how Kyler's career may be trending for these stats, such as if he is improving across the years in normal games, COD-affected games, or neither. The following regression graphs show this, with the first graph displaying Total EPA and the second showing Rating. The red points signify values for each week of COD-affected weeks while the red line is the trendline. Eventless weeks are denoted with blue.



For both of the graphs, we can see the red trend line being below the blue trend line, meaning that values of EPA and Rating have been higher on non-COD weeks throughout Kyler's career. The non-COD week trend seems to be increasing for both stats, showing that Kyler is improving as his career moves along, but the COD week trend lines are either decreasing or increasing at a lower rate, signifying that Murray may not technically be improving his play throughout his career during Call of Duty weeks. In this, it can be seen that Murray's development as a team contributor and passer may be influenced by his affinity for Call of Duty.

Conclusion

While the data only samples 5 and a half years of statistics, there does seem to be some connection with Kyler Murray putting up worse stats in games during weeks where there was some sort of Call of Duty event. While there may be an existing correlation, we cannot say that these events are causing these poorer outcomes, as other factors could have been influencing Kyler's suboptimal play during these weeks. Still, it has been shown that playing a good deal of video games can lead to lack of sleep, disrupted circadian rhythms, and lessened motivation or ability to perform other tasks. So, if the Kyler Murray video game addiction allegations are true, these factors could be in play in affecting Murray's performances through drawbacks such as these. On a different note, should Murray's playing days continue, and the Call of Duty franchise move forward with releasing new events and titles, this discrepancy may grow or diminish, so this study should be repeated in the future to ensure the positivity of a true impact. But for now, if you play fantasy football, participate in sports betting, or are just a fan of the NFL, next time you see any type of Call of Duty event occur, you might want to pay close attention to how Kyler Murray may perform that week.

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