

## FRONT MATTER

### Title

Alcohol plays an instrumental role in the link between football and domestic abuse: evidence from England

### Authors

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### Abstract

Previous research suggested that there might exist a causal link between football tournaments and observed increases in domestic abuse, but the exact pathway of this effect, and the extent to which alcohol contributes to it is still poorly understood. Using 8 years' worth of detailed crime data from the third largest police force in England (N= 281, 653), we present a thorough examination of the link between football, alcohol, and domestic abuse. We found that the number of alcohol-related domestic abuse cases reported to the police increases by 61% following an England victory, with no comparable increase for non-alcohol related cases. Our results further show that the effect is highly likely to be causal, specific to football (but not to rugby), and only present in male-to-female violent cases. These findings strongly implicate masculinity construction and alcohol consumption as the pathway through which national football tournaments increase domestic abuse.

### Introduction

"If England get beaten, so will she" - read the poster as part of the "The Not-So-Beautiful-Game" awareness campaign launched by the UK-based National Centre for Domestic Violence in the wake of the 2018 FIFA World Cup (1). While the link between sporting events and domestic abuse has been the focus of a number of smaller studies (2), large-scale quantitative investigations of this relationship are relatively scarce. The most extensive study in the topic found that an unexpected loss of the local National Football League (NFL) team resulted in a 10% increase in the rate of reported male to female intimate partner violence (IPV) in the US (3).

In England, most studies have focused on the link between football (soccer) and domestic abuse. Football's history is inextricably linked to England, and it is by far the most popular sport in the country (4), with the 2018 World Cup attracting a record number of 44.5 million viewers (5). Two studies have investigated the effect of England's participation in the World Cup on the number of reported domestic abuse incidents. Using data on the number of reported domestic abuse cases in the month of the 2010 World Cup tournament, one study has found that the number of reported domestic abuse cases increased significantly when England lost or won (about 33-35%), but did not change on days when they drew (6). A later study have also used daily count data from the 2002, 2006 and 2010 World Cups, and found a 38% increase in the number of reported domestic

47 violence cases when the England team lost, and a 26% increase when they won or drew (7), and  
48 these figures were also quoted on the posters of the Not-So Beautiful Game Campaign. While  
49 domestic abuse is predominantly understood as a pattern of ongoing behaviour involving a series  
50 of occurrences, rather than a one-off incident triggered by football (8), these studies, and other  
51 qualitative investigations (9) nevertheless suggest that national football tournaments can create an  
52 environment for abusers that is conducive to domestic abuse.

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54 Why would national football tournaments, such as the World Cup or the European Championship  
55 precipitate domestic abuse? England's participation in these tournaments are times of heightened  
56 patriotic emotions and a strengthened sense of "Englishness", fuelled by media narratives that  
57 often use war references, and a "us vs. them" rhetoric to generate and represent an English  
58 national identity (10). Previous qualitative research has suggested that televised contact sports can  
59 serve as vehicle for the male sports fan to redefine, and express his masculinity in a way that  
60 allows dominance, control, and can ultimately manifest in the perpetration of domestic abuse (11;  
61 9), given susceptibility to such behaviours. We speculate that this observation is especially  
62 pertinent in the context of England's participation in national football tournaments, owing to the  
63 popularity of the sport in the country, the associated media attention, and the resulting heightened  
64 sense of national consciousness.

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66 Qualitative investigations suggest that alcohol has a strong association with domestic abuse  
67 (12): those with alcohol-problems are more likely to be perpetrators and, when alcohol is  
68 involved, there is evidence that the violence might result in more serious injuries.  
69 However, it is generally understood that the role of alcohol should be considered in the context of  
70 a range of social, biological and psychological factors, and that alcohol is not the direct cause of  
71 domestic abuse (13, 12). It has been suggested that for some men, drinking and violence plays an  
72 instrumental role in the construction and expression of masculinity, especially when the problem  
73 of masculine deficiency is present (e.g., by unemployment; 12), some perpetrators use alcohol as  
74 a "shield" that protects them from being seen as a violent abuser and deflect responsibility (13).  
75 Despite the well-documented connection between alcohol and domestic abuse, how alcohol  
76 consumption affects the link between football and domestic abuse has not yet been explored.  
77 Given the strong association between drinking culture and football in England (14), a relationship  
78 continuously reinforced by the marketing practices of the alcohol industry (15), we conjecture  
79 that alcohol plays a crucial role in the link between national football tournaments and domestic  
80 abuse. Understanding the extent to which alcohol alters this relationship will deepen our  
81 understanding of the pathway through which football increases propensity for violence.

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83 To investigate this question, we test if the daily number of reported alcohol and non-alcohol  
84 related domestic abuse cases recorded by the West Midlands Police (WMP) in England between  
85 2010 and 2018 increase on days when the England national team plays in a national football  
86 tournament, and whether the effect depends on the result of the match. Since most England match  
87 days are allocated randomly (at least in the initial, group stage), national football tournaments  
88 serve as a suitable instrument for exploring the link between football and domestic abuse in  
89 England. Our rich dataset further allows us to conduct a thorough investigation of the  
90 characteristics and temporal pattern of the domestic abuse perpetrated on England match days,  
91 and extend our findings in different directions (other crime types and sports). We also test the  
92 robustness of the effect using various model specifications, time periods, and  
93 geographical areas.

## Results

In the following regressions, each observation is a day in the period between 2010 and 2018, and our main outcome variable is the number of alcohol and non-alcohol related domestic abuse cases reported to have been perpetrated on that day. To investigate how national football tournaments affect our outcome variables, we classify each day in our dataset as either a day on which England won (England win), lost (England lost) or drew (England draw), a day after an England match day (After England), any other day during the months of the tournament (Tournament on), or any other day during the rest of the year (Non-tournament day). Below we first explore the effect of football on alcohol-related domestic abuse under various model specifications, followed by a three-hour analysis of the effect. We then investigate if the effect varies by perpetrator-victim gender subgroup, or extends to rugby, the second most popular sport in England, and whether similar effects can be seen for other offence types, apart from domestic abuse. This is followed by a re-analysis of data from a previous study on domestic abuse and football, which allows us to check the robustness of our results. Finally, we explore the characteristics of alcohol-related domestic abuse cases occurring on England match days.

### *Model specifications*

Using a series of negative binomial regressions, we first compare various, increasingly complex model specifications to understand the relationship between football, alcohol and domestic abuse. As shown in Table 1, adding type of day as an explanatory variable to a model with only alcohol and time controls marginally improves the model fit (see column 2), and the results show a 20%, 95% CI [5%–38%] increase in the number of reported domestic abuse cases when the England national football team wins. The comparison between column 2 and 3 reveals that this increase stems from a much more pronounced 61% 95% CI [24%–110%] increase within the subgroup of alcohol-related domestic abuse cases on days when England wins. We find no evidence for comparable increases in the number of reported domestic abuse cases when the England national team loses. Less surprising, and more consistent with previous findings is the lack of an increase on England draw days, probably due to the fact that high-stake matches after the group-stage in the tournament cannot result in a draw.

Further interacting alcohol with the rest of the time-specific control variables results in a substantially improved model fit (see column 4), but does not alter the effect of an England win on alcohol-related domestic abuse (61%, 95% CI [32%–96%]). The results also reveal a smaller, 9%, 95% CI [1%–17%] increase in non-alcohol related cases on days following an England match day, potentially the result of a temporal spillover effect from the previous match day. We also see an 8%, 95% CI [2%–14%] decrease in alcohol-related cases during the tournament, but not on England match days, perhaps stemming from heavy drinking being mostly concentrated around England match (and particularly England win) days, and relatively lower alcohol consumption on other days during the tournament.

Table 1 about here

### Three-hour analysis

Next, we explore the temporal dynamics of the increase in alcohol-related domestic abuse on England match days in more detail. To analyse the temporal dynamics of the England win effect (see Figure 1), we divided each day in our dataset into eight three-hour periods, the first one starting at 12am, and used these to identify specific time windows around the time of the match. The exact time of the matches vary considerably (the earliest starting at 1pm, and the latest at 11pm). We first identified the three-hour period of the day into which each match falls. If the start and end time of the match did not fall in the same three-hour period, we chose the three-hour period that covers the larger part of the match (e.g., a 2.5 hour long match starting at 7pm will be assigned to the 6-9pm period and not to the 9pm-12am period).

Our previous results revealed important differences in the effect of football on alcohol and non-alcohol cases, therefore we run two separate regressions for alcohol and non-alcohol related domestic abuse cases to analyse the temporal pattern of the increase. Figure 1 shows a plot of the estimated percentage increase from these negative binomial regressions, revealing a stark increase in alcohol-related domestic abuse on days of an England victory, starting in the three hour period of the match, peaking in the three-hour period afterwards, and gradually declining to its original level in the twenty-four hours following the victory. Interestingly, we also see a slight increase in non-alcohol related incidents twelve hours after a loss or a victory, probably reflecting the small increase in non-alcohol related domestic abuse after an England match day seen in Table 1.

Figure 1 about here

### *Perpetrator-victim subgroups*

Given the evidence for the gendered nature of domestic abuse, we find it instructive to test whether the effect varies by perpetrator-victim gender subgroup. The first four columns of Table 2 show the results from four negative binomial regressions, one for each offender-victim gender groups. These reveal a pronounced increase in the subgroup of male to female abuse (which comprises about 80% of all domestic abuse cases in our data), where the number of reported alcohol-related cases increase by 67%, 95% CI [35%– 107%] on England win days. While we see similar tendencies for alcohol-related cases in other gender subgroups on England win days, these coefficients are about half the size of the male to female effect, and are not statistically different from zero.

Table 2 about here

## Rugby

Does this effect generalise to other sporting events, or is it specific to football? It has been previously suggested that other popular sports, such as rugby have similar links with domestic abuse (8). Rugby is the second most popular sport in England after football (16). Focusing on the Six Nations, a high-profile rugby tournament that takes place every year with the participation of England, Wales, Scotland, Ireland, France and Italy, we explored whether the reported number of domestic abuse cases increase on days when the England national rugby team plays. The results show no comparable effects for rugby matches (see column 5 in Table 2), potentially stemming from differences in timing, media coverage, audience numbers, and the involvement of alcohol between the two tournaments.

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### *Robustness checks*

Table 3 about here

Table 4 about here

These findings are in accordance with previous results from an earlier examination (6). As a further robustness check, we explore the sensitivity of the result to the exclusion of specific tournament years (see Table 5), which shows that while the size of the England win effect varies, it is robust to the exclusion of specific years, and is not driven by an unusually large effect in one of the tournament years.

Table 5 about here

### *Characteristics of domestic abuse perpetrated on England days*

Our data further allows us to explore the characteristics of alcohol-related domestic abuse perpetrated on England match days. First, using a series of logistic regressions, we investigate whether these cases are more likely to be newly reported (with no earlier record for the same victim-offender pair in our dataset), happen in a residential dwelling as opposed to a public location, or result in an injury. We find no evidence that domestic abuse cases perpetrated on England match days are more likely to be newly reported (see Table S2 in the Supplemental Material), compared to domestic abuse cases occurring on non-match days. Interestingly, our results indicate that, compared to non-match days, reported cases are more likely to be perpetrated in public on England loss days, but not on England win days, and that this effect does not differ by alcohol-involvement in the case. Non-alcohol related cases reported on England loss days are also more likely to result in an injury, a pattern that is absent from alcohol-related cases.

Next, we turn to repeated cases of domestic abuse (multiple cases with the same victim-offender pair). Domestic abuse is rarely a one-off incident, and reported repeat cases allow us to explore the characteristics of domestic abuse that occurs on match days in more detail. We are interested in whether the number of days elapsed between two consecutive cases is affected by England football matches. For example, it is possible that England match days bring reported cases of domestic abuse forward, which would have otherwise happened at a later point in time. We investigate this question with two negative binomial regressions, where the outcome variables are the number of days elapsed since the last reported case, and the number of days until the next case, respectively. In addition, using all reported cases, we explore whether the number of hours elapsed before reporting the case is affected by England match days.

The results shown in Table S3 in the Supplemental Material show that non-alcohol related cases perpetrated on England loss days occur fewer days after the previous incident compared to non-alcohol repeat cases reoccurring on non-match days. Non-alcohol related domestic abuse cases perpetrated on England win days are more likely to be followed by another case of abuse in fewer days compared to cases occurring on non-match days, and this pattern is absent from alcohol-related cases. Interestingly, non-alcohol related cases perpetrated on England loss days are likely to be reported after fewer hours, compared to non-alcohol related abuse perpetrated on non-match days.

Finally, using the sample of repeated cases, we explore whether previously non-alcohol related cases are more likely to reoccur as alcohol-related abuse on England match days. We investigate this question using a logistic regression, controlling for the type of the previous case (alcohol/non-alcohol related). The results shown in Table S4 in the Supplemental Material that on England win days, there is an increased likelihood of an alcohol-related case occurring, irrespective of whether the previous case was alcohol-related or not. Taken together, these results indicate that apart from the higher likelihood of alcohol-involvement, domestic abuse that follows an England victory is not characteristically different from domestic abuse perpetrated on other days during the year.

## Discussion

We have shown that an England victory in a national football tournament is followed by a 61% increase in the reported number of alcohol-related domestic abuse cases. This is a large effect, translating into a 0.43 increase in the daily rate of alcohol-related cases per 100,000 individuals, against a base rate 0.71 cases per 100,000. The effect is entirely limited to alcohol-related abuse, even though alcohol-related domestic abuse cases comprise only 23% of all domestic abuse in our dataset. As such, we see this as strong quantitative evidence that alcohol plays an instrumental role in the relationship between football and domestic abuse. This effect is exclusively limited to male-perpetrated domestic abuse, implicating a victory-induced violent expression of masculinity coupled with alcohol consumption as the pathway by which football increases abuse. In support of this conclusion, anecdotal evidence suggests that alcohol consumption increases following an England victory (16).

It had been suggested that the apparent link between football and domestic abuse can be explained by other factors, including high-profile events taking place around the time of the match, increased policing on England match days, and the effect of awareness campaigns before the tournaments (8). However, our three-hour analysis strongly suggests that the effect is causal, further supported by the fact that the majority of England match days were allocated randomly. In addition, we could expect that higher levels of policing on England match days would result in an increased number of recorded cases perpetrated outside, and that a successful pre-tournament awareness campaign would result in an increase in the number of newly reported cases. Our results do not support either of these alternative hypotheses. In addition, it is unclear why the effect of other events, different policing practices, or awareness campaigns would depend on the result of the match. Replicating the results of a previous US study, we found that it is male to female abuse that is affected by a sporting event (3). In the same study, the effect of the match did not depend on alcohol-involvement in the abuse case, and the increase was driven by unexpected losses. In contrast, we find that in the context of England and football, it is a victory that results in the largest increase, and that alcohol involvement is critical. This discrepancy most likely stems from the contextual differences between the two studies (England, football, national tournaments vs. US, American football, NFL matches).

Based on the pre-match betting odds, all of the England victories were expected in our dataset. This suggests that in the context of England's participation in national football tournaments, it is living up to the expectations of the fans that results in largest emotional effect. Indeed, English newspapers' narratives about the team's performance in these tournaments are characterised with high levels of optimism, expectation and yearning for the glory of the 1966 World Cup (10). Previous research has demonstrated how the vicarious experience of watching their team play can increase supporter's testosterone and cortisol levels, even when they expect their team to win, suggested to be an adaptive response to the perceived threat to one's social identity (17).

It is perhaps surprising that while we found no evidence for an increase in the reported number of domestic abuse cases on England loss days, domestic abuse perpetrated on these days seems to be characteristically different from domestic abuse perpetrated on other days in terms of location, resulting injury, and time delay before reporting. While these findings should be interpreted with caution due to the pervasive problem of underreporting, the results suggest differences in the effect of England wins and losses on domestic abuse.

Our study represent the most extensive quantitative investigation of the link between football and domestic abuse up to date. We have shown that our findings are largely in line with results from previous, smaller-scale investigations from England (the main difference being the lack of an England loss effect in our sample), and substantially extend them in highlighting the instrumental role alcohol plays in the relationship between football and domestic abuse. While the effect of a victory or loss is likely to be highly specific to the context of a particular match (e.g., group stage or knockout stage, previous performance of the team, weather on the day, etc.), the estimated effect of an England victory on the number of reported domestic abuse cases is robust to different model specifications, using data from a different geographical area, and the exclusion of specific tournament years.

However, despite the robustness of our results, they should be interpreted carefully, as we have only used data from two locations in England. Further investigations using data from other areas either within England, or from other countries where football is popular should reveal the robustness and cross-cultural sensitivity of the patterns we have reported. Another limitation of our study is that we only used data on domestic abuse cases reported to the police, while the vast majority of domestic abuse cases do not get reported. This can potentially affect our estimates if the cases that get reported on England match days are characteristically different from domestic abuse cases reported on other days. While we have not found any evidence for this bias, future research investigating the link between football and domestic abuse could combine data from other sources (e.g., domestic abuse helpline calls) with police data to address these concerns.

For victims, domestic abuse does not occur once every four years following a football match, but is a lived experience of constant fear (8). Nevertheless, our results provide a deeper understanding of the contexts that can be conducive to abuse. In particular, our findings illuminate that the experience of “national success” in a highly male-dominated sport is a breeding ground for male-perpetrated, alcohol-related domestic abuse.

Our results have important implications for policymakers and the football industry. While national football tournaments are times of excitement, anticipation and national pride, the general public should be made aware of the dark side of these events, and in particular of the dangers of alcohol-fuelled post-victory celebrations. The toxic link between football, alcohol and domestic abuse could enter the public discourse through targeted awareness campaigns. In addition to the UK Government’s substantial ongoing efforts to fight domestic abuse, leaders in football could also do more to dissociate football fandom from domestic abuse. This could be achieved through a more explicit condemnation of violent, abusive behaviours from football fans, and conscious efforts to make football more attractive to women and increase their presence in this historically male-dominated arena. Such measures can be important first steps towards a radical transformation of a football culture that is currently seen as perpetuating toxic attitudes.

## Materials and Methods

Our dataset comprises all crimes and specific types of incidents (such as domestic abuse) that have been reported to the WMP in the period between 2010 and 2018. The WMP is the third largest police force in England (18), serving an estimated 2.9 million people in 2017 (19). The first half of 2017 has been excluded due to missing data. The number of reported domestic abuse cases is the sum of crimes that have a domestic abuse marker, and all domestic abuse incidents. Crimes that have a domestic abuse marker indicate cases of domestic abuse that meet the criteria for notifiable offences in the UK, whereas domestic abuse incidents refer to cases that do not qualify as a crime. For each record in this dataset, we have information about the time and location of the incident or crime, and the gender and age of the offender and victim. We restricted



our analyses to cases with one victim and one offender (N = 281, 653). We can also identify repeat offenders and victims by their unique person identifier. Domestic abuse cases comprise about 31% of all recorded crimes and incidents in the dataset, and about 23% of all domestic abuse cases are alcohol-related. In the period between 2010 and 2018, the daily rate of non-alcohol related domestic incidents falls between 1.22-3.00 cases per 100,000 individuals, whereas the daily rate of alcohol-related cases falls between 0.35-1.06 cases per 100,000 individuals. There were three World Cups (2010, 2014, 2018) and two European Championships (2012, 2016) in the period covered by our dataset. All of these tournaments took place in the months of June and July.

In the UK, the term “domestic abuse” refers to a wide range of behavioural patterns, from physical and sexual violence to psychological, emotional, financial abuse, threatening behaviour, stalking and harassment, either within a family or an intimate relationship (20). Previous research has mostly focused on IPV, the largest subcategory of domestic abuse. While IPV is more common than abuse perpetrated by family members (20), our dataset does not contain information about the exact relationship between the victim and perpetrator, therefore we cannot separate the two types of abuse, and we will refer to them collectively as “domestic abuse”. Our dataset contains all cases of domestic abuse that have been reported to the West Midlands Police between 2010 and 2018, but the vast majority of domestic abuse incidents in fact never get reported (according to the Crime Survey of England and Wales, only 17% of domestic abuse victims reported the abuse to the police between April 2017 and March 2018; 20). This substantial reporting bias, and its potential correlation with other contextual factors warrants a careful interpretation of the estimates from any quantitative study investigating domestic abuse, and highlights the importance of utilising a mixed methods approach to explore the factors contributing to the prevalence of domestic abuse.

## References and Notes

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## Acknowledgments

### Data availability statement

The data that support the findings of this study are available from West Midlands Police but restrictions apply to the availability of these data, which were used under license for the current study by researchers with security vetting from the police, and so are not publicly available. Data are however available from the authors upon reasonable request and with permission of West Midlands Police.

### Code availability

The code for producing the results can be accessed [here](#).

## Figures and Tables

**Table 1. Number of reported domestic abuse incidents by alcohol involvement and type of day**

Dependent variable:				
Number of reported domestic abuse cases per day				
	(1)	(2)	(3)	(4)
Alcohol	-0.719*** (0.007)	-0.719*** (0.007)	-0.719*** (0.008)	-0.862*** (0.031)
Tournament on		-0.004 (0.023)	0.014 (0.027)	0.032 (0.020)
England win		0.205*** (0.069)	-0.037 (0.091)	-0.031 (0.063)
England draw		0.025 (0.082)	0.048 (0.104)	0.047 (0.072)
England lost		0.078 (0.068)	-0.013 (0.089)	0.050 (0.061)
After England		0.097** (0.043)	0.075 (0.055)	0.086** (0.038)
Tournament on:Alcohol			-0.043 (0.040)	-0.083** (0.035)
England win:Alcohol			0.610*** (0.135)	0.606*** (0.101)
England draw:Alcohol			-0.055 (0.165)	-0.034 (0.129)
England lost:Alcohol			0.223 (0.135)	0.076 (0.101)
After England:Alcohol			0.051 (0.084)	0.037 (0.066)
Number of days	6,034	6,034	6,034	6,034
Akaike Inf. Crit.	45,539.500	45,536.770	45,530.360	41,959.280

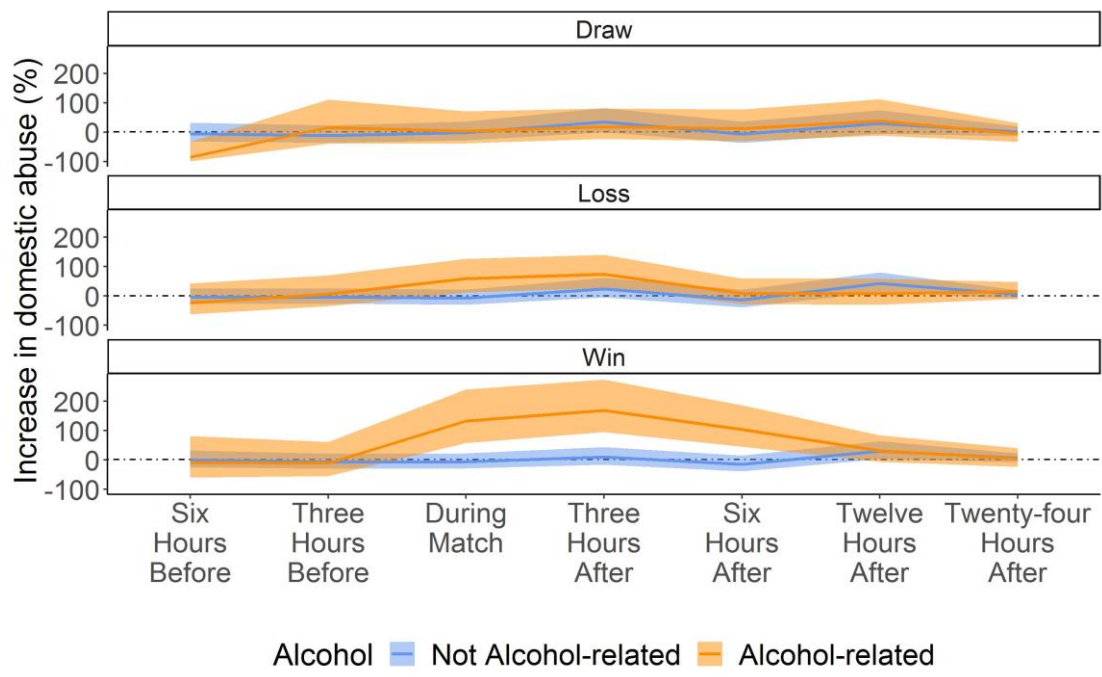
Notes:

<sup>a</sup> \*p<0.1; \*\*p<0.05; \*\*\*p<0.01

<sup>b</sup>Estimates are exponentiated coefficients from a series of negative binomial regressions (based on tests of overdispersion) with year, month, day of week, Christmas, New Year's eve controls; Model 4 further includes interactions between alcohol and all control variables; standard errors in parentheses

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**Figure 1. The temporal dynamics of the football-induced increase in domestic abuse, by alcohol involvement.** Note: Estimates are from two separate negative binomial regressions (based on tests of overdispersion) with year, month, day of week, three-hour period of day, Christmas, New Year's eve controls. Shaded area is 95% CIs



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**Table 2. The effect of football on domestic abuse by perpetrator-victim subgroups and offence types, and the effect of rugby.**

	Dependent variable:								
	Male to Male (1)	Male to Female (2)	Female to Male (3)	Female to Female (4)	Six Nations (Rugby) (5)	Property-related Offences (6)	Public Order Offences (7)	Hate Offences (8)	Other violent Offences (9)
Alcohol	-0.825*** (0.101)	-0.870*** (0.034)	-0.808*** (0.133)	-0.858*** (0.080)	-0.862*** (0.031)	-0.981*** (0.065)	-0.922*** (0.080)	-0.934*** (0.115)	-0.902*** (0.040)
Tournament on	0.005 (0.054)	0.038* (0.021)	0.053 (0.062)	-0.048 (0.045)	0.005 (0.019)	0.042 (0.026)	0.096** (0.036)	0.138*** (0.047)	0.034 (0.027)
England win	-0.068 (0.165)	-0.022 (0.066)	0.019 (0.193)	-0.147 (0.135)	0.0001 (0.035)	0.052 (0.074)	0.234** (0.095)	0.073 (0.136)	0.094 (0.077)
England draw	0.080 (0.194)	0.038 (0.076)	0.043 (0.225)	0.107 (0.169)		0.100 (0.085)	-0.065 (0.128)	-0.066 (0.168)	0.035 (0.092)
England lost	-0.063 (0.162)	0.065 (0.064)	-0.036 (0.171)	0.117 (0.136)	0.056 (0.055)	-0.042 (0.078)	0.075 (0.100)	0.011 (0.139)	0.089 (0.078)
After England	-0.036 (0.103)	0.093** (0.040)	0.152* (0.114)	0.025 (0.082)	-0.010 (0.031)	0.052 (0.047)	0.161** (0.062)	0.141 (0.084)	0.108** (0.048)
Alcohol:Tournament on	-0.181* (0.106)	-0.077** (0.038)	-0.018 (0.137)	-0.215* (0.084)	-0.047 (0.035)	0.135 (0.080)	-0.197** (0.101)	-0.215* (0.141)	-0.009 (0.051)
Alcohol:England win	0.334 (0.285)	0.674*** (0.108)	0.360 (0.358)	0.472 (0.231)	0.045 (0.059)	0.259 (0.219)	0.020 (0.256)	0.310 (0.359)	0.507*** (0.132)
Alcohol:England draw	-0.282 (0.411)	0.031 (0.138)	0.071 (0.629)	-0.580 (0.313)		0.060 (0.264)	0.374 (0.303)	0.393 (0.431)	0.360* (0.161)
Alcohol:England lost	0.286 (0.279)	0.028 (0.111)	0.328 (0.356)	-0.088 (0.231)	-0.073 (0.091)	0.144 (0.226)	0.456* (0.228)	-0.032 (0.393)	0.018 (0.138)
Alcohol:After England	0.209 (0.185)	0.052 (0.071)	-0.111 (0.242)	-0.040 (0.159)	-0.021 (0.055)	0.094 (0.144)	0.127 (0.158)	0.446* (0.211)	0.053 (0.088)
Number of days	6,034	6,034	6,034	6,034	6,034	6,034	6,034	6,034	6,034

Notes:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

<sup>b</sup>Estimates are exponentiated coefficients from a series of negative binomial regressions (based on tests of overdispersion) with month, day of week, Christmas, New Year's eve controls interacted with alcohol; there was only one England rugby match that resulted in a draw between 2010 and 2018, therefore we excluded it from the data; standard errors in parentheses

**Table 3. Replication of Kirby et al. (2014).**  
Exponentiated coefficients and 95% CIs from a series of negative binomial regressions predicting daily counts of reported DA incidents (other controls not included here: month, year, xmas/nye)

Dependent variable:		
-----		
Number of reported IPV cases per day		
	Original Model	Win/Draw Separate
	(1)	(2)
-----		
England windraw	0.256*** (0.055)	
England win		0.452*** (0.064)
England draw		0.032 (0.073)
England lost	0.382*** (0.094)	0.388*** (0.085)
After England	0.111** (0.051)	0.113** (0.047)
-----		
BIC	747.763	739.662
Observations	92	92
Akaike Inf. Crit.	714.980	704.356
=====		

Notes:

<sup>a</sup>\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

<sup>b</sup>Estimates are exponentiated coefficients from a series of negative binomial regressions (based on tests of overdispersion) with year and day of week controls; standard errors in parentheses; data is only available during the tournament period

Table 4. Year subgroup regressions, Lancashire and West Midlands data

	Dependent variable:							
	Number of IPV cases per day in Lancashire				Number of domestic abuse cases per day in West Midlands			
	negative binomial	Poisson			negative binomial			
	2002	2006	2010	2010	2012	2014	2016	2018
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Tournament on				0.074*	-0.066	-0.048	0.035	0.089*
				(0.041)	(0.085)	(0.044)	(0.041)	(0.044)
England win	0.596***	0.297***	0.916***	0.050	-0.237		-0.008	0.061
	(0.152)	(0.077)	(0.114)	(0.155)	(0.175)		(0.151)	(0.077)
England draw	0.100	0.098	-0.137	-0.029	0.324	-0.077	-0.021	
	(0.150)	(0.156)	(0.095)	(0.112)	(0.204)	(0.173)	(0.108)	
England lost	0.200	0.373***	0.568***	0.174	-0.127	-0.042	-0.155	0.066
	(0.232)	(0.117)	(0.106)	(0.140)	(0.212)	(0.124)	(0.154)	(0.088)
After England	0.253**	0.122*	0.024	0.070	-0.008	0.007	0.038	0.140**
	(0.101)	(0.070)	(0.065)	(0.082)	(0.125)	(0.103)	(0.081)	(0.060)
Alcohol:Tournament on				-0.093	0.076	0.063	-0.163**	-0.068
				(0.101)	(0.162)	(0.076)	(0.072)	(0.078)
Alcohol:England win				2.558***	0.756*		0.348	0.460***
				(0.277)	(0.314)		(0.257)	(0.123)
Alcohol:England draw				0.078	-0.581	0.089	0.129	
				(0.246)	(0.571)	(0.307)	(0.180)	
Alcohol:England lost				0.748**	0.301	0.048	-0.289	0.160
				(0.259)	(0.372)	(0.206)	(0.322)	(0.149)
Alcohol:After England				0.128	-0.072	0.068	-0.112	0.188*
				(0.183)	(0.254)	(0.171)	(0.144)	(0.102)
Number of days	30	32	30	730	732	730	732	618

Notes:

\*\*p<0.1; \*\*\*p<0.05; \*\*\*p<0.01

\*Estimates are exponentiated coefficients from a series of negative binomial or poisson regressions (based on tests of overdispersion). The first three regressions have day of week control, the rest of the regressions have month, day of week, Christmas, New Year's eve controls interacted with alcohol; standard errors in parentheses

Table 5. Robustness of the result: sensitivity to the exclusion of specific years

Dependent variable:					
	Number of domestic abuse cases per day				
	2018 excluded	2016 excluded	2014 excluded	2012 excluded	2010 excluded
	(1)	(2)	(3)	(4)	(5)
Alcohol	-0.862*** (0.033)	-0.862*** (0.033)	-0.862*** (0.032)	-0.863*** (0.031)	-0.867*** (0.033)
Tournament on	0.018 (0.022)	0.032 (0.022)	0.045** (0.022)	0.043** (0.020)	0.019 (0.022)
England win	-0.093 (0.097)	-0.042 (0.068)	-0.022 (0.062)	0.025 (0.066)	-0.046 (0.067)
England draw	0.038 (0.072)	0.084 (0.091)	0.065 (0.078)	0.009 (0.075)	0.052 (0.088)
England lost	0.030 (0.079)	0.072 (0.065)	0.060 (0.069)	0.061 (0.062)	0.018 (0.065)
After England	0.057 (0.048)	0.086* (0.043)	0.095** (0.041)	0.105** (0.039)	0.078* (0.042)
Alcohol:Tournament on	-0.086** (0.039)	-0.058 (0.040)	-0.118*** (0.041)	-0.096*** (0.036)	-0.068* (0.038)
Alcohol:England win	0.884*** (0.163)	0.657*** (0.109)	0.588*** (0.100)	0.557*** (0.105)	0.495*** (0.107)
Alcohol:England draw	-0.046 (0.130)	-0.149 (0.180)	-0.057 (0.141)	0.047 (0.132)	-0.027 (0.151)
Alcohol:England lost	0.014 (0.134)	0.129 (0.108)	0.118 (0.116)	0.068 (0.103)	0.029 (0.109)
Alcohol:After England	-0.065 (0.086)	0.086 (0.073)	0.037 (0.071)	0.044 (0.067)	0.039 (0.071)
Number of days	5,416	5,302	5,304	5,302	5,304

## Notes:

\*p&lt;0.1; \*\*p&lt;0.05; \*\*\*p&lt;0.01

<sup>b</sup>Estimates are exponentiated coefficients from a series of negative binomial regressions (based on tests of overdispersion) with year, month, day of week, Christmas, New Year's eve controls interacted by alcohol; standard errors in parentheses



## Supplementary Materials

**Table S1. Non-domestic violent cases by perpetrator-victim gender subgroup**

Dependent variable:				
	Number of other violent abuse cases per day			
	Male to Male (1)	Male to Female (2)	Female to Female (3)	Female to Male (4)
Tournament on	0.037 (0.026)	0.050** (0.021)	0.041 (0.038)	0.051 (0.036)
England win	0.013 (0.082)	0.019 (0.067)	-0.031 (0.111)	0.174 (0.112)
England draw	0.089 (0.094)	0.012 (0.078)	0.115 (0.139)	0.042 (0.132)
England lost	0.018 (0.082)	0.028 (0.066)	0.088 (0.114)	0.118 (0.108)
After England	0.085 (0.050)	0.070 (0.042)	0.181** (0.071)	0.149** (0.067)
Alcohol:Tournament on	-0.027 (0.055)	-0.086** (0.038)	-0.077 (0.087)	-0.167** (0.073)
Alcohol:England win	0.391** (0.158)	0.613*** (0.109)	0.441* (0.251)	-0.114 (0.199)
Alcohol:England draw	0.071 (0.192)	0.102 (0.137)	0.127 (0.361)	-0.337 (0.254)
Alcohol:England lost	0.296* (0.153)	0.057 (0.112)	-0.023 (0.237)	0.027 (0.207)
Alcohol:After England	0.208* (0.100)	0.053 (0.072)	-0.119 (0.163)	-0.158 (0.136)
Number of days	6,034	6,034	6,034	6,034

Notes:

<sup>a</sup>\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

<sup>b</sup>Estimates are exponentiated coefficients from a series of negative binomial regressions (based on tests of overdispersion) with year, month, day of week, Christmas, New Year's eve controls interacted with alcohol; standard errors in parentheses

**Table S2. Characteristics of domestic abuse cases reported on match days I**

	Dependent variable:		
	Newly Reported Yes = 1, No = 0 (1)	Public Location Yes = 1, No = 0 (2)	Results in Injury Yes = 1, No = 0 (3)
Tournament_on	-0.037	0.021	0.007
England_win	0.011	0.167	0.153
England_draw	0.082	0.014	0.119
England_lost	-0.099	0.337***	0.265***
After_England	0.035	0.070	0.049
Alcohol* Tournament_on	0.087	0.063	-0.058
Alcohol* England_win	0.093	0.104	-0.064
Alcohol* England_draw	-0.151	-0.016	-0.209
Alcohol* England_lost	0.221	0.044	-0.413**
Alcohol* After_England	-0.036	0.042	-0.122
Observations	251,976	279,777	279,777

Notes:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

<sup>b</sup>Estimates are log odds from a series of logistic regressions with year, month, day of week, Christmas, New Year's eve controls interacted by alcohol, where every observation is a reported domestic abuse case; cases that happened in 2010 were excluded from the first regression; standard errors clustered by victim-offender pairs are in parentheses

**Table S3. Characteristics of domestic abuse cases reported on match days II**

Dependent variable:			
	Days since last (1)	Days until next (2)	Hours until reported (3)
Tournament_on	-0.014 (0.028)	-0.047* (0.028)	0.080 (0.063)
England_win	0.016 (0.082)	-0.340*** (0.095)	-0.098 (0.162)
England_draw	-0.017 (0.096)	-0.111 (0.105)	0.034 (0.208)
England_lost	-0.163* (0.087)	-0.104 (0.087)	-0.560*** (0.170)
After_England	0.052 (0.054)	-0.139** (0.055)	-0.243** (0.108)
Alcohol:Tournament_on	0.026 (0.057)	0.025 (0.056)	0.200 (0.197)
Alcohol:England_win	-0.119 (0.146)	0.358** (0.159)	0.152 (0.450)
Alcohol:England_draw	-0.266 (0.231)	-0.116 (0.208)	-0.935** (0.390)
Alcohol:England_lost	0.277* (0.159)	0.114 (0.166)	0.552 (0.654)
Alcohol:After_England	-0.104 (0.106)	0.147 (0.102)	-0.265 (0.297)

Notes:

<sup>a</sup>\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

<sup>b</sup>Estimates are exponentiated coefficients from a series of negative binomial regressions (based on tests of overdispersion) with year, month, day of week, Christmas, New Year's eve controls interacted by alcohol, where every observation is a reported domestic abuse case; for each regression, we excluded the upper 2.5% of the outcome variable; standard errors clustered by victim-offender pairs are in parentheses

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Table S4. Alcohol transition on England match days

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Dependent variable:

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Alcohol-involvement in case

Yes = 1,

No = 0

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Tournament_on	-0.134**
	(0.062)
England_win	0.443***
	(0.157)
England_draw	0.368*
	(0.201)
England_lost	-0.113
	(0.180)
After_England	0.041
	(0.114)
Tournament_on:Previous_alcohol	-0.051
	(0.100)
England_win:Previous_alcohol	-0.110
	(0.277)
England_draw:Previous_alcohol	-0.365
	(0.372)
England_lost:Previous_alcohol	0.179
	(0.292)
After_England:Previous_alcohol	0.066
	(0.180)
-----	
Observations	97,292
=====	