

1 Reported cases of alcohol-related domestic 2 abuse increase following the victory of the 3 England national football team

4

5 Can sporting events act as triggers of domestic abuse? Previous research
6 has suggested a link between large-scale televised sport tournaments and
7 increased rates of reported domestic abuse^{1,2}. While hypothesized to be
8 a significant factor, the role alcohol plays in this relationship is unknown.
9 Using crime data from the third largest police force in England, serving a
10 population of 2.9 million³, we show that the number of reported alcohol-
11 related domestic abuse cases increases by 61% following an England victory
12 in a national football tournament (World Cup, European Championship).
13 The effect is driven by male to female alcohol-related cases, and is absent
14 from male to male, female to male, and female to female cases. A three-hour
15 analysis reveals that the increase starts in the three-hour period of the match,
16 peaks in the three hours following the victory, and gradually declines to its
17 baseline level 12 hours after the match. This temporal pattern, along with
18 the random allocation of match days strongly indicates a causal effect of an
19 England victory on alcohol-related domestic abuse. We find a comparable
20 increase in other, violent, male to female, alcohol-related offences on England
21 win days. The win-effect is robust to the exclusion of specific tournament
22 years, and using data from another geographical area within England. The
23 domestic abuse that occurs on these days is not characteristically different
24 from domestic abuse cases occurring on non-match days, apart from the
25 stronger association with alcohol. The alcohol and time specificity go beyond
26 existing reports of the link between football and domestic abuse^{2,4}.

27 “If England gets beaten, so will she” - read the poster as part of the
28 “The Not-So-Beautiful-Game” awareness campaign launched by the National
29 Centre for Domestic Violence in the wake of the 2018 FIFA World Cup⁵.
30 While the link between sporting events and domestic abuse has been the
31 focus of a number of smaller studies⁶, large-scale quantitative investigations
32 of this relationship are relatively scarce. The most extensive study in the
33 topic found that an unexpected loss of the local National Football League
34 (NFL) team resulted in a 10% increase in the rate of reported male to female
35 intimate partner violence (IPV) in the US¹.

36 In England, most studies have focused on the link between football (soc-
37 cer) and domestic abuse. Football’s history is inextricably linked to England,
38 and it is by far the most popular sport in the country⁷, with the 2018 World
39 Cup attracting a record number of 44.5 million viewers⁸. One of the earli-
40 est examinations of the link between football and domestic abuse used daily
41 data from 33 out of 39 police forces in England from the period of June-
42 July in 2009 and 2010 (World Cup tournament year)⁴. They tested whether
43 the reported number of domestic abuse cases increased significantly on days
44 when the England national football team won, lost, or drew, compared to
45 the same days in 2009, and other, non-match days during the tournament
46 in 2010. The study found that rates of reported domestic abuse increased
47 significantly when England lost or won (about 33-35%), but did not change
48 on days when they drew.

49 A more comprehensive investigation, using daily counts of domestic abuse
50 in Lancashire from the 2002, 2006 and 2010 World Cup, found a 38% increase
51 in the number of reported domestic violence cases when the England team
52 lost, and a 26% increase when they won or drew². These estimates had been
53 widely discussed in the British media before the 2018 World Cup, and the
54 figures were also quoted on the posters in the Not-So Beautiful Game Cam-
55 paign. While domestic abuse is predominantly understood as a pattern of
56 ongoing behaviour involving a series of occurrences, rather than a one-off
57 incident triggered by football⁹, these studies, and other qualitative investi-
58 gations¹⁰ nevertheless suggest that national football tournaments can create
59 an environment for abusers that is conducive to domestic abuse.

60 Why would national football tournaments, such as the World Cup or the
61 European Championship precipitate domestic abuse? England’s participa-
62 tion in these tournaments are times of heightened patriotic emotions and a
63 strengthened sense of “Englishness”, fuelled by media narratives that often
64 use war references, and a “us vs. them” rhetoric to generate and represent

an English national identity¹¹. Previous qualitative research has suggested that televised contact sports can serve as vehicle for the male sports fan to redefine, and express his masculinity in a way that allows dominance, control, and can ultimately manifest in the perpetration of domestic abuse^{10,12}, given susceptibility to such behaviours. We speculate that this observation is especially pertinent in the context of England’s participation in national football tournaments, owing to the popularity of the sport in the country, the associated media attention, and the resulting heightened sense of national consciousness.

Qualitative investigations suggest that alcohol can be a significant factor in the link between football and domestic abuse. Alcohol has a strong association with domestic abuse¹³: those with alcohol-problems are more likely to be perpetrators and, when alcohol is involved, there is evidence that the violence might result in more serious injuries. However, it is generally understood that the role of alcohol should be considered in the context of a range of social, biological and psychological factors, and that alcohol is not the direct cause of domestic abuse^{13,14}. One explanation for the co-occurrence of domestic abuse and alcohol is that, for some men, drinking and violence plays an instrumental role in the construction and expression of masculinity, especially when the problem of masculine deficiency is present (e.g., by unemployment)¹³. It has also been suggested that some perpetrators use alcohol to deflect responsibility for their actions, using alcohol as a “shield” that protects them from being seen as a violent abuser¹⁴.

In the US, the relationship between unexpected NFL losses and IPV did not depend on alcohol-involvement in the abuse case¹, while England-based quantitative studies did not look at the role of alcohol in particular. Given the strong association between drinking culture and football in England¹⁵, a relationship continuously reinforced by the marketing practices of the alcohol industry¹⁶, we hypothesize that alcohol plays an important role in the relationship between national football tournaments and domestic abuse.

To explore this hypothesis, we test if the daily number of reported domestic abuse cases recorded by the West Midland Police in England between 2010 and 2018 increase on days when the England national team plays in the World Cup or the European Championship, and whether the effect, if any, depends on alcohol-involvement in the reported case or the result of the match. We find that alcohol-related domestic abuse significantly increases following an England victory. Our rich dataset further allows us to investigate various aspects of this win-effect, including the temporal pattern of

103 the increase, and exploring whether the link between football and domestic
104 abuse depends on the gender of the perpetrator and victim. We conduct
105 various robustness checks of the win-effect. We also examine if the increase
106 extends to other types of criminal behaviours apart from domestic abuse,
107 and whether similar links exist between rugby and domestic abuse. Finally,
108 we test if the abuse perpetrated on England match days is characteristically
109 different from abuse occurring on non-match days.

110 In the UK, the term “domestic abuse” refers to a wide range of be-
111 haviours, from physical and sexual violence to psychological, emotional, fi-
112 nancial abuse, threatening behaviour, stalking and harassment, either within
113 a family or an intimate relationship¹⁷. Recent changes to the definition in-
114 troduced the concept of coercive control, which recognises domestic abuse as
115 a pattern of incidents, which can include any of the above behaviours. Previ-
116 ous research has mostly focused on IPV, the largest subcategory of domestic
117 abuse. While IPV is more common than abuse perpetrated by family mem-
118 bers¹⁷, our dataset does not contain information about the exact relationship
119 between the victim and perpetrator, therefore we cannot separate the two
120 types of abuse, and we will refer to them collectively as “domestic abuse”.

121 Our dataset contains all cases of domestic abuse that have been reported
122 to the West Midlands Police between 2010 and 2018, but the vast majority
123 of all domestic abuse incidents in fact never get reported (according to the
124 Crime Survey of England and Wales, only 17% of all domestic abuse vic-
125 tims reported the abuse to the police between April 2017 and March 2018¹⁷).
126 This substantial reporting bias, and its potential correlation with other con-
127 textual factors warrants a careful interpretation of the estimates from any
128 quantitative study investigating domestic abuse, and highlights the impor-
129 tance of utilising a mixed methods approach to explore the factors facilitating
130 domestic abuse.

131 Results

132 In the following regressions, each observation is a day in the period between
 133 2010 and 2018, and the outcome variable is the number of domestic abuse
 134 cases reported to have been perpetrated on that day. To investigate whether
 135 national football tournaments affect the number of reported abuse cases, we
 136 classify each day in our dataset as either a day on which England won (Eng-
 137 land win), lost (England lost) or drew (England draw), a day after an England
 138 match day (After England), any other day during the tournament (Tournam-
 139 ent on), or any other day during the rest of the year (Non-tournament
 140 day).

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

156 Further interacting alcohol with the rest of the time-specific control vari-
 157 ables results in a substantially improved model fit (see column 4), but does
 158 not alter the effect of an England win on alcohol-related domestic abuse (61%,
 159 95% CI [32%–96%]). The results also reveal a smaller, 9%, 95% CI [1%–17%]
 160 increase in non-alcohol related cases on days following an England match day,
 161 potentially the result of a temporal spillover effect from the previous match
 162 day. We also see an 8%, 95% CI [2%–14%] decrease in alcohol-related cases
 163 during the tournament, but not on England match days, perhaps stemming
 164 from heavy drinking being mostly concentrated around England match (and
 165 particularly England win) days, and relatively lower alcohol consumption on
 166 other days during the tournament.

167 To explore the characteristics of this increase, we investigate whether the

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

	<i>Dependent variable:</i>			
	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 loss		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 loss:Alcohol			0.223 (0.135)	0.076 (0.101)
After England:Alcohol			0.051 (0.084)	0.037 (0.066)
Number of days	3,017	3,017	3,017	3,017
AIC	45,539.500	45,536.770	45,530.360	41,959.280

^a * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

^b Estimates are 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

168 strength of the effect varies by offender-victim gender subgroup. Previous
 169 qualitative research has suggested that the link between football and do-
 170 mestic abuse is a result of violent expression of masculinity¹², where heavy
 171 drinking is also often present. If this was the case, we would expect football
 172 and alcohol to only affect reported numbers of male-perpetrated domestic
 173 abuse.

174 Table 2 shows the results from four negative binomial regressions, one for
 175 each offender-victim gender groups. These reveal a pronounced increase in
 176 the subgroup of Male to Female abuse (which comprises about 80% of all do-
 177 mestic abuse cases in our data), where the number of reported alcohol-related
 178 cases increase by 67%, 95% CI [35%–107%] on England win days. While we
 179 see similar tendencies for alcohol-related cases in other gender subgroups on
 180 England win days, these coefficients are about half the size of the male to fe-
 181 male effect, and are not statistically different from zero. These results can be
 182 interpreted in light of the observation that British football fandom is preva-
 183 lently male-dominated⁷, and they lend support to the hypothesis that mas-
 184 culinity construction and alcohol may be key to the link between football and
 185 domestic abuse. However, it is unclear why victory-induced, alcohol-related
 186 masculinity construction would culminate in violence only against women.

187 Our unique dataset further allows us to explore whether England games
 188 have similar effects on other types of criminal behaviours. Specifically, we
 189 are interested in how an England match day affects the number of reported
 190 property-related crimes (including burglary, theft and robbery), public order
 191 offences (behaviours that cause offence to the general public), hate crimes
 192 (hate incidents and any other racially or religiously aggravated crime), and
 193 other violent crimes (excluding cases of domestic abuse). Of particular inter-
 194 est is the effect of football on non-domestic violent crimes, since it is possible
 195 that alcohol-fuelled violence that follows an England victory is not limited
 196 to family and intimate partner relationships.

197 Table 3 shows the results from a series of negative binomial regressions
 198 for different types of criminal behaviours. These reveal that while there is
 199 no evidence that England matches affect the number of reported property-
 200 related offences, we see an increase in the number of non-alcohol related
 201 public order offence cases on tournament days, when England wins, and on
 202 days after an England game. Hate incidents with no alcohol involvement
 203 also increase when the tournament is on. But most importantly, the effect
 204 of an England match on alcohol-related cases extends to other, non-domestic
 205 violent offences, resulting in a 55%, 95% [43%–72%] increase on days when

Table 2: Number of reported domestic abuse incidents by type of day, alcohol involvement, and gender of perpetrator and victim

	<i>Dependent variable:</i>			
	Number of reported domestic abuse cases per day			
	Male to Male (1)	Male to Female (2)	Female to Female (3)	Female to Male (4)
Tournament on	0.005 (0.054)	0.038* (0.021)	0.053 (0.062)	−0.048 (0.045)
England win	−0.068 (0.165)	−0.022 (0.066)	0.019 (0.193)	−0.147 (0.135)
England draw	0.080 (0.194)	0.038 (0.076)	0.043 (0.225)	0.107 (0.169)
England loss	−0.063 (0.162)	0.065 (0.064)	−0.036 (0.171)	0.117 (0.136)
After England	−0.036 (0.103)	0.093** (0.040)	0.152* (0.114)	0.025 (0.082)
Alcohol:Tournament on	−0.181* (0.106)	−0.077** (0.038)	−0.018 (0.137)	−0.215* (0.084)
Alcohol:England win	0.334 (0.285)	0.674*** (0.108)	0.360 (0.358)	0.472 (0.231)
Alcohol:England draw	−0.282 (0.411)	0.031 (0.138)	0.071 (0.629)	−0.580 (0.313)
Alcohol:England loss	0.286 (0.279)	0.028 (0.111)	0.328 (0.356)	−0.088 (0.231)
Alcohol:After England	0.209 (0.185)	0.052 (0.071)	−0.111 (0.242)	−0.040 (0.159)
Number of days	3,017	3,017	3,017	3,017

^a * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

^b Estimates are 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 3: Number of reported cases for each crime type, by type of day, and alcohol involvement

	<i>Dependent variable:</i>			
	Number of reported domestic abuse cases per day			
	Property- related (1)	Public Order Offences (2)	Hate incidents (3)	Other violence (4)
Tournament on	0.042 (0.026)	0.096** (0.036)	0.138*** (0.047)	0.034 (0.027)
England win	0.052 (0.074)	0.234** (0.095)	0.073 (0.136)	0.094 (0.077)
England draw	0.100 (0.085)	−0.065 (0.128)	−0.066 (0.168)	0.035 (0.092)
England loss	−0.042 (0.078)	0.075 (0.100)	0.011 (0.139)	0.089 (0.078)
After England	0.052 (0.047)	0.161** (0.062)	0.141 (0.084)	0.108** (0.048)
Alcohol:Tournament on	0.135 (0.080)	−0.197** (0.101)	−0.215* (0.141)	−0.009 (0.051)
Alcohol:England win	0.259 (0.219)	0.020 (0.256)	0.310 (0.359)	0.507*** (0.132)
Alcohol:England draw	0.060 (0.264)	0.374 (0.303)	0.393 (0.431)	0.360* (0.161)
Alcohol:England loss	0.144 (0.226)	0.456* (0.228)	−0.032 (0.393)	0.018 (0.138)
Alcohol:After England	0.094 (0.144)	0.127 (0.158)	0.446* (0.211)	0.053 (0.088)
Number of days	3,017	3,017	3,017	3,017

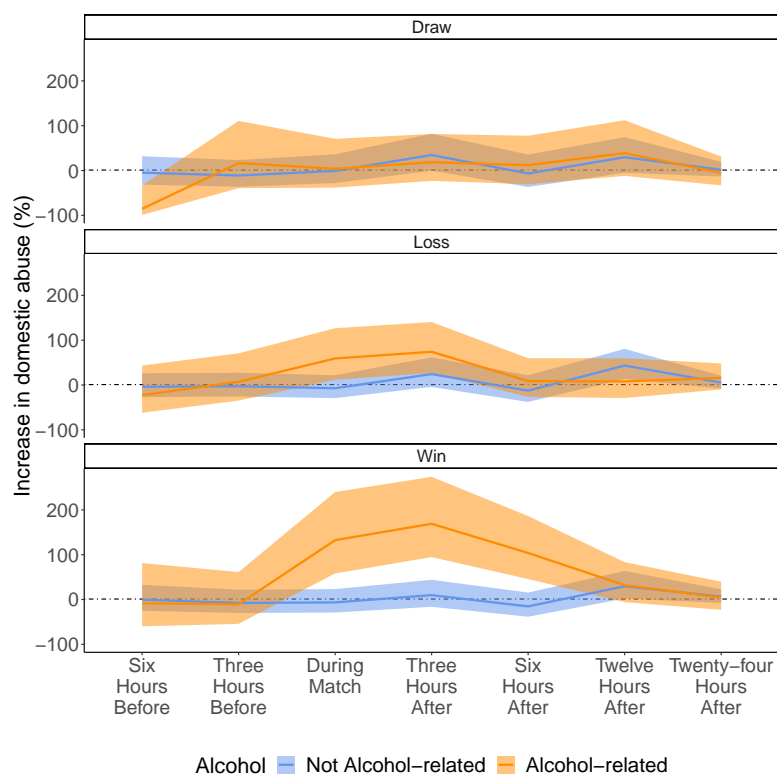
^a * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

^b Estimates are 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

206 England wins, and a smaller increase on days following an England match, the
207 exact same pattern we have seen for domestic abuse. This result highlights
208 that alcohol-related violent behaviour on England win days is not limited
209 to family relationships. Further analysis reveals that the increase in these
210 alcohol-related non-domestic violent crimes also predominantly comes from
211 male to female cases (although male to male and female to male cases also
212 contribute, see Table A1 in the Appendix). While it is possible that a number
213 of misclassified domestic abuse cases are reflected in this result (e.g, if the
214 victim refuses to admit any relationship to the offender), but even if this
215 was the case, taken together, these findings only strengthen our conclusion
216 that football and alcohol primarily make men more violent, and direct this
217 violence overwhelmingly towards women.

218 Next, we explore the temporal dynamics of the increase in alcohol-related
219 domestic abuse on England match days in more detail. Our previous results
220 revealed important differences in the effect of football on alcohol and non-
221 alcohol cases, therefore we run two separate regressions for alcohol and non-
222 alcohol related domestic abuse cases to analyse the temporal pattern of the
223 increase. Figure 1 shows a plot of the estimated percentage increase from
224 these negative binomial regressions, revealing a stark increase in alcohol-
225 related domestic abuse on days of an England victory, starting in the three
226 hour period of the match, peaking in the three-hour period afterwards, and
227 gradually declining to its original level in the twenty-four hours following
228 the victory. These results strongly suggest that the emotional effect of a
229 win drives the subsequent increase in alcohol-related domestic abuse, and
230 highlight the possibility that the effect of England victories stem from pro-
231 longed post-match celebrations coupled with increased alcohol consumption.
232 Interestingly, we also see a slight increase in non-alcohol related incidents
233 twelve hours after a loss or a victory, probably reflecting the small increase
234 in non-alcohol related domestic abuse after an England match day seen in
235 Table 1.

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.

236 Discussion

237 Our results have shown that an England victory in a national football tourna-
238 ment is followed by a 61% increase in the reported number of alcohol-related
239 domestic abuse cases. This is a large effect, translating into a 0.43 increase in
240 the daily rate of alcohol-related cases per 100,000 individuals, against a base
241 rate 0.71 cases per 100,000. The effect is entirely limited to alcohol-related
242 abuse, even though alcohol-related domestic abuse cases comprise only 23%
243 of all domestic abuse in our dataset. As such, we see this as strong quan-
244 titative evidence that alcohol plays an instrumental role in the relationship
245 between football and domestic abuse in England. The effect is also exclu-
246 sively limited to male-perpetrated domestic abuse, implicating masculinity
247 and alcohol consumption as the pathway by which football increases abuse.
248 The temporal pattern of the increase following an England victory is highly
249 consistent with a causal explanation, further supported by the fact that the
250 allocation of England win days can be considered random.

251 Our findings show both similarities and differences with results from pre-
252 vious quantitative investigations. Replicating the results of a previous US
253 study, we found that it is male to female abuse that is affected by a sporting
254 event¹. In the same study, the effect of the match did not depend on alcohol-
255 involvement in the abuse case, and the increase was driven by unexpected
256 losses. In contrast, we find that in the context of England and football, it
257 is a victory that results in the largest increase, and that alcohol involvement
258 is critical. This discrepancy most likely stems from the contextual differ-
259 ences between the two studies (England, football, national tournaments vs.
260 US, American football, NFL matches), highlighting that the effect of sports-
261 induced emotional cues on domestic abuse is highly sensitive to the cultural
262 context.

263 Based on the pre-match betting odds, all of the England victories were
264 expected in our dataset. This suggests that in the context of England's
265 participation in national football tournaments, it is living up to the expec-
266 tations of the fans that results in largest emotional effect. Indeed, English
267 newspapers' narratives about the team's performance in these tournaments
268 are characterised with high levels of optimism, expectation and yearning for
269 the glory of the 1966 World Cup¹⁸. Previous research has demonstrated how
270 the vicarious experience of watching their team play can increase supporter's
271 testosterone and cortisol levels, even when they expect their team to win,
272 suggested to be an adaptive response to the perceived threat to one's social

identity¹⁹. Anecdotal evidence suggests that alcohol consumption increases following an England victory²⁰, consistent with our findings.

The most widely-discussed England-based investigation of the link between football and domestic abuse have found that an England loss results in the most pronounced increase in domestic abuse (38%), and a win or draw have a slightly smaller effect (26%)². This study used daily data on IPV from Lancashire Constabulary (serving a population of 1.4 million, about half the population of the West Midlands) for the period of the 2002, 2004 and 2010 World Cup tournaments (June-July). Using daily domestic abuse data from the West Midlands for the period between 2010 and 2018, we find a different pattern, with the largest increase in alcohol-involved cases of abuse when England wins, but no comparable effects when England loses. Upon re-analysing their data by treating wins and draws as two separate variables (resulting in an improved model fit, see Table A2 in the Appendix), we see a roughly similar effect for wins (45%, 95% CI [28%–64%]) and losses (39%, 95% CI [18%–64%]), and no effect when England draws. Our reanalysis replicates the win effect seen in the current data in the earlier sample, though the absence of a loss effect remains a stark difference between the two studies. While our sample sizes are different (92 days versus 3,017 days), and our respective samples cover different geographical areas and time periods, the discrepancy is still puzzling.

To explore the underlying reason for this discrepancy and test the robustness of our results, we find it instructive to break our analysis into specific tournament years for the two datasets (see Table A3 in the Appendix). An interesting common pattern in both datasets is the large effect of England’s victory over Slovenia in the group stage of the 2010 World Cup, which, after much anticipation, secured their progression to the next stage of the tournament. Equally, the subsequent loss against Germany in the knockout stage resulted in a substantial increase in the number of reported domestic abuse incidents, which is the only tournament in our dataset where this pattern appears. Interestingly, an earlier examination of the 2010 World Cup found a similar pattern, using daily data from 33 out of 39 police forces in England⁴, although our much larger sample size (3,017 days versus 62 days) allows for a more precise assessment of the link 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

311 robust to different model specifications (see Table 1), using data from a
312 different geographical area (see Table A3 in the Appendix), and the exclusion
313 of specific tournament years (see Table A4 in the Appendix).

314 Does this effect generalise to other sporting events, or is it specific to
315 football? It has been previously suggested that other popular sports, such
316 as rugby have similar links with domestic abuse⁹. Rugby is the second most
317 popular sport in England after football²¹. Focusing on the Six Nations, a
318 high-profile rugby tournament that takes place every year with the partici-
319 pation of England, Wales, Scotland, Ireland, France and Italy, we explored
320 whether the reported number of domestic abuse cases increase on days when
321 the England national rugby team plays. Between 2010 and 2018, there are
322 many more win and loss days of the England rugby union team compared
323 to the England national football team. The results show no comparable
324 effects for rugby matches (see Table A5 in the Appendix), potentially stem-
325 ming from differences in media coverage, audience numbers, and the role of
326 alcohol between the two tournaments.

327 We also investigated whether England match days have similar effects on
328 other types of non-domestic abusive behaviours, including sexual offences,
329 child and vulnerable adult abuse. A commonality between domestic abuse
330 and these types of offences is the element of control and domination, although
331 domestic abuse is much more frequent in our dataset. We find no evidence
332 that England matches have comparable effects on non-domestic sexual of-
333 fences and other abuse cases (see Table A6 in the Appendix).

334 Our data further allows us to explore the characteristics of alcohol-related
335 domestic abuse perpetrated on England match days. First, using a series
336 of logistic regressions, we investigate whether these cases are more likely
337 to be newly reported (with no earlier record for the same victim-offender
338 pair in our dataset), happen in a residential dwelling as opposed to a public
339 location, or result in an injury. We find no evidence that domestic abuse cases
340 perpetrated on England match days are more likely to be newly reported (see
341 Table A7 in the Appendix), compared to domestic abuse cases occurring on
342 non-match days. It could be argued that since fans often congregate in
343 pubs to watch England play, there is a higher likelihood that domestic abuse
344 occurs in public and get reported on these days. Interestingly, our results
345 indicate that, compared to non-match days, reported cases are more likely
346 to be perpetrated in public on England loss days, but not on England win
347 days, and that this effect does not differ by alcohol-involvement in the case.
348 Non-alcohol related cases reported on England loss days are also more likely

349 to result in an injury, a pattern that is absent from alcohol-related cases.

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

363 The results show that non-alcohol related cases perpetrated on England
364 loss days occur fewer days after the previous incident, 192 days, 95% CI
365 [159 days, 232 days], compared to non-alcohol repeat cases reoccurring on
366 non-match days, 226 days, 95% CI [207 days, 248 days] (see Table A8 in
367 the Appendix). Non-alcohol related domestic abuse cases perpetrated on
368 England win days are more likely to be followed by another case of abuse
369 in fewer days, 172 days, 95% CI [138 days, 214 days], compared to cases
370 occurring on non-match days, 242 days, 95% CI [223 days, 261 days], and
371 this pattern is absent from alcohol-related cases. Interestingly, non-alcohol
372 related cases perpetrated on England loss days are likely to be reported after
373 fewer hours, 59 hours, 95% CI [45 hours, 78 hours], compared to non-alcohol
374 related abuse perpetrated on non-match days, 104 hours, 95% CI [91 hours,
375 119 hours].

376 It is perhaps surprising that while we found no evidence for an increase in
377 the reported number of domestic abuse cases on England loss days (see Table
378 1), domestic abuse perpetrated on these days seems to be characteristically
379 different from domestic abuse perpetrated on other days. More specifically,
380 cases perpetrated on England loss days are more likely to occur outside,
381 result in an injury, and get reported sooner. Furthermore, repeated cases
382 perpetrated on England loss days occur slightly sooner following the previous
383 case, but abuse perpetrated on England win days are followed by another
384 incident sooner. While these findings should be interpreted with caution due
385 to the pervasive problem of underreporting, the results suggest differences
386 in the effect of England wins and losses on domestic abuse. In particular,

387 while there is no increase in the overall number of cases reported on England
388 loss days, incidents reported on these days are characteristically different
389 from abuse perpetrated on non-match days, while we observe a substantial
390 difference in the number, but not the characteristics of cases perpetrated on
391 England win days.

392 Suggested alternative explanations for the increased number of reported
393 domestic abuse cases on England match days include other high-profile events
394 taking place around the time of the match, increased policing on England
395 match days, and the effect of awareness campaigns before the tournaments⁹.
396 Our three-hour analysis of the England win effect (Figure 1) show that the
397 temporal pattern of the effect is highly consistent with a match-induced ex-
398 planation of the increase, making it unlikely that other events occurring on
399 England win days would be responsible for the increase. We could expect
400 that higher levels of policing on England match days would result in an
401 increased number of recorded cases perpetrated outside, and that a success-
402 ful pre-tournament awareness campaign would result in an increase in the
403 number of newly reported cases. Our results do not support either of these
404 alternative hypotheses (see Table A7 in the Appendix). In addition, it is un-
405 clear why the effect of other events, different policing practices, or awareness
406 campaigns would depend on the result of the match.

407 To summarise, we have found that when the England national football
408 team wins, there is a 61% increase in alcohol-related domestic abuse, driven
409 by male-to-female abuse. An increase is also seen in other violent crimes,
410 predominantly in violence perpetrated by men on women. The temporal
411 pattern of the increase suggests a causal mechanism, and the effect is robust
412 to the exclusion of specific tournament years and using data from a different
413 time period and geographical area within England. The effect is specific
414 to football, but not rugby. Apart from the higher likelihood of alcohol-
415 involvement, these cases of abuse are not characteristically different from
416 abuse occurring on other days throughout the year.

417 For victims, domestic abuse does not occur once every four years following
418 a football match, but is a lived experience of constant fear⁹. Nevertheless,
419 our results provide a deeper understanding of the contexts that can be con-
420 ductive to abuse. In particular, these findings illuminate that the experience
421 of “national success” in a highly male-dominated sport is a breeding ground
422 for male-perpetrated, alcohol-related domestic abuse. From a policy perspec-
423 tive, only a radical transformation of football culture is likely to make any
424 difference¹⁰, but raising awareness of the link between alcohol, football and

425 domestic abuse could form the basis of a meaningful change.

426 Method

427 Our dataset comprises all crimes and specific types of incidents (such as
428 domestic abuse) that have been reported to the West Midlands Police (the
429 third largest police force in England²², serving an estimated 2.9 million people
430 in 2017³) in the period between 2010 and 2018. The first half of 2017 has been
431 excluded due to missing data. The number of reported domestic abuse cases
432 is the sum of crimes that have a domestic abuse marker, and all domestic
433 abuse incidents. Crimes that have a domestic abuse marker indicate cases
434 of domestic abuse that meet the criteria for notifiable offences in the UK,
435 whereas domestic abuse incidents refer to cases that do not qualify as a
436 crime. For each record in this dataset, we have information about the time
437 and location of the incident or crime, and the gender and age of the offender
438 and victim. We restricted our analyses to cases with one victim and one
439 offender. We can also identify repeat offenders and victims by their unique
440 person identifier. Domestic abuse cases comprise about 31% of all recorded
441 crimes and incidents in the dataset, and about 23% of all domestic abuse cases
442 are alcohol-related. In the period between 2010 and 2018, the daily rate of
443 non-alcohol related domestic incidents falls between 1.6-3 cases per 100,000
444 individuals, whereas the daily rate of alcohol-related cases falls between 0.35-
445 1 cases per 100,000 individuals. There were three World Cups (2010, 2014,
446 2018) and two European Championships (2012, 2016) in the period covered
447 by our dataset. All included tournaments took place in the months of June
448 and July.

449 To analyse the temporal dynamics of the England win effect (see Figure
450 1), we divided each day in our dataset into eight three-hour periods, the first
451 one starting at 12am, and used these to identify specific time windows around
452 the time of the match. The exact time of the matches vary considerably (the
453 earliest starting at 1pm, and the latest at 11pm). We first identified the
454 three-hour period of the day into which each match falls. If the start and
455 end time of the match did not fall in the same three-hour period, we chose
456 the three-hour period that covers the larger part of the match (e.g., a 2.5
457 hour long match starting at 7pm will be assigned to the 6-9pm period and
458 not to the 9pm-12am period).

459 Data availability statement

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

466 Code availability

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

468 Appendix

Table A1: Non-domestic violent cases by gender

	<i>Dependent variable:</i>			
	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 loss	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 loss	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	3,017	3,017	3,017	3,017

^a * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

^b *Estimates are 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 A2: Replication of Kirby et al. (2014) with an alternative specification

	<i>Dependent variable:</i>	
	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 loss	0.382*** (0.094)	0.388*** (0.085)
After England	0.111** (0.051)	0.113** (0.047)
Number of days	92	92
AIC	714.980	704.356

^a * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

^b *Estimates are 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 A3: Year subgroup regressions, Lancashire and West Midlands data

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

^a * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

^b Estimates are 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 A4: Robustness of the result: sensitivity to the exclusion of specific years

	<i>Dependent variable:</i>				
	Number of domestic abuse cases per day				
	2018 excluded (1)	2016 excluded (2)	2014 excluded (3)	2012 excluded (4)	2010 excluded (5)
Tournament on	(0.033) 0.018 (0.022)	(0.033) 0.015 (0.025)	(0.032) 0.027 (0.025)	(0.031) 0.030 (0.022)	(0.033) −0.003 (0.025)
England win	−0.093 (0.097)	−0.047 (0.068)	−0.029 (0.062)	0.019 (0.066)	−0.051 (0.067)
England draw	0.038 (0.072)	0.077 (0.091)	0.057 (0.078)	0.004 (0.075)	0.046 (0.088)
England loss	0.030 (0.079)	0.066 (0.065)	0.053 (0.069)	0.054 (0.062)	0.013 (0.065)
After England	0.057 (0.048)	0.080* (0.042)	0.088** (0.040)	0.099** (0.039)	0.071* (0.042)
Alcohol:Tournament on	−0.086** (0.039)	−0.037 (0.046)	−0.118*** (0.047)	−0.092** (0.040)	−0.048 (0.042)
Alcohol:England win	0.884*** (0.163)	0.674*** (0.109)	0.609*** (0.100)	0.574*** (0.105)	0.511*** (0.107)
Alcohol:England draw	−0.046 (0.130)	−0.141 (0.179)	−0.048 (0.141)	0.055 (0.131)	−0.017 (0.151)
Alcohol:England loss	0.014 (0.134)	0.139 (0.107)	0.131 (0.116)	0.078 (0.103)	0.039 (0.109)
Alcohol:After England	−0.065 (0.086)	0.096 (0.073)	0.050 (0.071)	0.054 (0.067)	0.050 (0.071)
Number of days	2,708	2,651	2,652	2,651	2,652

^a * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

^b Estimates are 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

Table A5: The effect of England matches in the Six Nations rugby tournament on domestic abuse

	<i>Dependent variable:</i>
	Number of reported domestic abuse cases per day
Tournament on	0.005 (0.019)
England win	0.0001 (0.035)
England loss	0.056 (0.055)
After England	-0.010 (0.031)
Alcohol:Tournament on	-0.047 (0.035)
Alcohol:England win	0.045 (0.059)
Alcohol:England loss	-0.073 (0.091)
Alcohol:After England	-0.021 (0.055)
Number of days	3,017

^a * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

^b *Estimates are 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; 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 A6: Non domestic abuse incidents that are about power

	<i>Dependent variable:</i>	
	Number of cases per day	
	Sexual Offences	Other Abuse
	(1)	(2)
Tournament on	0.079 (0.068)	0.078* (0.042)
England win	-0.172 (0.217)	-0.073 (0.132)
England draw	-0.062 (0.253)	0.175 (0.148)
England loss	-0.220 (0.223)	0.153 (0.132)
After England	-0.035 (0.134)	0.095 (0.081)
Alcohol:Tournament on	-0.121 (0.157)	-0.069 (0.093)
Alcohol:England win	0.191 (0.462)	0.166 (0.274)
Alcohol:England draw	0.781 (0.503)	-0.252 (0.346)
Alcohol:England loss	0.011 (0.483)	-0.111 (0.285)
Alcohol:After England	0.114 (0.287)	-0.172 (0.182)
Number of days	3,017	3,017

^a * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

^b *Estimates are 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*

Table A7: Characteristics of domestic abuse cases reported on match days I

	<i>Dependent variable:</i>		
	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 (0.030)	0.021 (0.037)	0.007 (0.033)
England win	0.011 (0.089)	0.167 (0.110)	0.153 (0.101)
England draw	0.082 (0.121)	0.014 (0.138)	0.119 (0.117)
England loss	−0.099 (0.086)	0.337*** (0.099)	0.265*** (0.093)
After England	0.035 (0.056)	0.070 (0.068)	0.049 (0.062)
Alcohol:Tournament on	0.087 (0.060)	0.063 (0.080)	−0.058 (0.066)
Alcohol:England win	0.093 (0.156)	0.104 (0.196)	−0.064 (0.165)
Alcohol:England draw	−0.151 (0.233)	−0.016 (0.306)	−0.209 (0.237)
Alcohol:England loss	0.221 (0.171)	0.044 (0.198)	−0.413** (0.182)
Alcohol:After England	−0.036 (0.108)	0.042 (0.143)	−0.122 (0.118)
Number of cases	251,976	279,777	279,777

^a * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

^b *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 A8: Characteristics of domestic abuse cases reported on match days
II

	<i>Dependent variable:</i>		
	Days since last	Days until next	Hours until reported
	(1)	(2)	(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 loss	−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 loss	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)
Number of cases	95,091	95,091	272,793

^a * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

^b *Estimates are 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*

Table A9: Alcohol transition on England match days

	<i>Dependent variable:</i>
	Alcohol-involvement in case Yes=1, No=0
Tournament on	-0.134** (0.062)
England win	0.443*** (0.157)
England draw	0.368* (0.201)
England loss	-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)
Number of cases	97,292

^a * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

^b *Estimates are log odds from a logistic regression with year, month, day of week, Christmas, New Year's eve controls interacted by alcohol involvement of the previous case, where every observation is a reported domestic abuse case; standard errors clustered by victim-offender pairs are in parentheses*

References

1. Card, D. & Dahl, G. B. Family Violence and Football: The Effect of Unexpected Emotional Cues on Violent Behavior. *The Quarterly Journal of Economics* **126**, 103–143 (2011).
2. Kirby, S., Francis, B. & O’Flaherty, R. Can the FIFA World Cup Football (Soccer) Tournament Be Associated with an Increase in Domestic Abuse? *Journal of Research in Crime and Delinquency* **51**, 259–276 (2014).
3. Office for National Statistics. *Official Labour Market Statistics* 2017. <https://www.nomisweb.co.uk/reports/lmp/la/1967128614/report.aspx%7B%5C%7Dtabrespop> (2019).
4. Brimicombe, A. & Cafe, R. Beware, Win or Lose: Domestic Violence and the World Cup. *Significance* **9**, 32–35 (2012).
5. *The Not-So-Beautiful Game* 2018. <https://www.ncdv.org.uk/the-not-so-beautiful-game> (2019).
6. Williams, D. J. & Neville, F. G. in *Overcoming domestic violence: Creating a dialogue around vulnerable populations*. (ed Myra F. Taylor; Julie Ann Pooley; Robert S. Taylor) 157–241 (Nova Science Publishers, New York, 2014).
7. Parry, K. D., Jones, I. & Wann, D. L. An Examination of Sport Fandom in the United Kingdom: A Comparative Analysis of Fan Behaviors, Socialization Processes, and Team Identification. *Journal of Sport Behavior* **37**, 251–267 (2014).
8. BBC Sport. *World Cup 2018: Record-breaking online £ viewing figures for BBC* July 2018. <https://www.bbc.co.uk/sport/football/44850988> (2019).
9. Brooks-Hay, O. & Lombard, N. ‘Home game’: domestic abuse and football. *Journal of Gender-Based Violence* **2**, 93–108 (2018).
10. Swallow, J. *An exploratory study of women’s experiences regarding the interplay between domestic violence and abuse and sports events* PhD thesis (2017).

- 500 11. Vincent, J. & Harris, J. 'They think it's all Dover!' Popular newspaper
501 narratives and images about the English football team and (re)presentations
502 of national identity during Euro 2012. *Soccer and Society* **15**, 222–240
503 (2014).
- 504 12. Sabo, D., Gray, P. M. & Moore, L. A. in *Masculinities, Gender Rela-*
505 *tions, and Sport* (ed Jim McKay; Michael A. Messner; Don Sabo) 127–
506 146 (SAGE Publications, Inc, Thousand Oaks, 2000).
- 507 13. Peralta, R. L., Tuttle, L. A. & Steele, J. L. At the Intersection of In-
508 terpersonal Violence, Masculinity, and Alcohol Use: The Experiences of
509 Heterosexual Male Perpetrators of Intimate Partner Violence. *Violence*
510 *Against Women* **16**, 387–409 (2010).
- 511 14. Javaid, A. The role of alcohol in intimate partner violence: Causal be-
512 haviour or excusing behaviour? *British Journal of Community Justice*
513 **13**, 75–92 (2015).
- 514 15. Dixon, K. The football fan and the pub: An enduring relationship. *In-*
515 *ternational Review for the Sociology of Sport* **49**, 382–399 (2014).
- 516 16. Gornall, J. World Cup 2014: festival of football or alcohol? *BMJ* **348**,
517 g3772 (2014).
- 518 17. Office for National Statistics. *Domestic abuse in England and Wales:*
519 *year ending March 2018* tech. rep. (Office for National Statistics, 2018),
520 24.
- 521 18. Vincent, J., Kian, E. M., Pedersen, P. M., Kuntz, A. & Hill, J. S. Eng-
522 land expects: English newspapers' narratives about the English football
523 team in the 2006 World Cup. *International Review for the Sociology of*
524 *Sport* **45**, 199–223 (2010).
- 525 19. Van der Meij, L. *et al.* Testosterone and Cortisol Release among Spanish
526 Soccer Fans Watching the 2010 World Cup Final. *PLoS ONE* **7**, e34814
527 (2012).
- 528 20. Davies, G. *England's unexpected World Cup progression behind record-*
529 *high alcohol poisoning cases, NHS says* 2018. [https://www.telegraph.](https://www.telegraph.co.uk/news/2018/12/30/englands-unexpected-world-cup-progression-behind-record-high/)
530 [co . uk / news / 2018 / 12 / 30 / englands - unexpected - world - cup -](https://www.telegraph.co.uk/news/2018/12/30/englands-unexpected-world-cup-progression-behind-record-high/)
531 [progression-behind-record-high/](https://www.telegraph.co.uk/news/2018/12/30/englands-unexpected-world-cup-progression-behind-record-high/) (2019).
- 532 21. *Rugby Union 'Britain's Second Most Popular Sport'* Dec. 2003. [https:](https://www.ipsos.com/ipsos-mori/en-uk/rugby-union-britains-second-most-popular-sport)
533 [//www . ipsos . com / ipsos - mori / en - uk / rugby - union - britains -](https://www.ipsos.com/ipsos-mori/en-uk/rugby-union-britains-second-most-popular-sport)
534 [second-most-popular-sport](https://www.ipsos.com/ipsos-mori/en-uk/rugby-union-britains-second-most-popular-sport) (2019).

- ⁵³⁵ 22. Home Office. *Police funding for England and Wales 2015 to 2019* tech.
⁵³⁶ rep. (Home Office, 2018), 11–12.