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**Author(s):** Allan Brimicombe and Rebecca Cafe

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## Beware, Win or Lose: domestic violence and football tournaments

Allan Brimicombe and Rebecca Cafe

In the run up to just about any mega sporting event these days (e.g. Football World and European Cups, Rugby World Cup, Super Bowl Sunday) there are warnings and public conversations about a likely rise in domestic violence (DV) during these events. London 2012 is no exception – Figure 1 is a beer mat used in the London Borough of Newham (one of the London 2012 ‘Host Boroughs’) as part of its campaign in the run-up to and during the Games period. Many of these conversations, in the UK at least, quote a Home Office report <sup>1</sup> which purports to have found a link during the 2006 FIFA World Cup between sporting events, alcohol consumption and DV. The report states that “major sporting events do not cause DV, as perpetrators are responsible for their actions, but the levels of alcohol consumption linked to the highly charged emotional nature of those events seems to increase the prevalence of such incidents” (p36). Campaigners would argue that DV is a serious every day event not caused by sport or alcohol and that public consciousness of this scourge should not just be tied to particular sporting fixtures or tournaments. Spikes in DV can be much larger, for example, over Christmas and New Year. Nevertheless, the perennial nature of the debate around DV and football prompted the second author of this paper, a BBC journalist, to put the 2006 Home Office conclusions to the test for the 2010 FIFA World Cup (though the story was not run by the BBC until the 2012 UEFA Cup<sup>2</sup>). For reasons discussed below, police recorded figures of DV are more problematic than, say, burglary or theft of a vehicle, and finding a suitable control against which to test the significance of any change is particularly problematic. This paper gives a more in-depth presentation of the thinking behind the analysis.

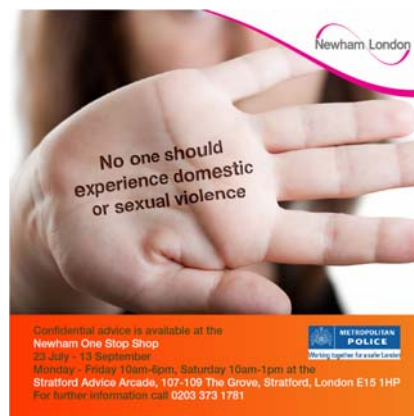


Figure 1: Beer mat design used in an information campaign about DV during the London 2012 Games (courtesy of Safer Newham Partnerships, London Borough of Newham).

DV is defined as “*any incident of threatening behaviour, violence or abuse [psychological, physical, sexual, financial or emotional] between adults who are or have been intimate partners or family members, regardless of gender or sexuality*” under the Domestic Violence Crime and Victims Act, 2004. ‘Adults’ are defined as any person aged 18 and ‘family members’ include mother, father, son, daughter, brother, sister and grandparents, whether directly related, in-laws or step-family. DV extends to female genital mutilation, forced marriage and so-called ‘honour crimes’. Other general terms in use for DV are domestic abuse, inter-partner violence (IPV, particularly in the US) and intimate violence.

Since from its definition DV can be a wide range of different behaviours, there is no specific statutory offence of domestic violence. Nevertheless, many forms of domestic violence are crimes and where reported to the police will be recorded under a number of categories such as assault,

criminal damage, rape or murder depending on the outcome of the incident and Home Office rules for recording crime. Furthermore, because DV is not a statutory offence, it is not reported by Police Forces to the Home Office under the Notifiable Offences List (NOL)<sup>3</sup> and does not appear separately as a category of police recorded crime in the published crime statistics for England and Wales. In this respect DV is 'below the radar' of national statistics. However, Police Forces do ensure that where cases of DV are recoded as a notifiable crime, a flag or some other database entry is made to signal it as having been DV. Database designs for recorded crime vary across Police Forces. Furthermore, notifiable crime is only about 20% of all incidents recorded by the police<sup>4</sup>, and where the circumstance of a call-out for DV is not deemed to constitute an offence; it may be recorded as a domestic incident (heated arguments, abuse). The Audit Commission<sup>5</sup> found that in excess of 90% of recorded DV cases were being correctly classified and that only one Force was considered to have poor performance in correctly recording DV. Though not always straightforward, statistics on DV whether offences and/or incidents can be retrieved from police databases.

The Crime Survey of England & Wales (CSEW, formally the British Crime Survey) has included since 2004/05 a self-completion module on domestic abuse and intimate violence which, in the absence of any published police recorded statistics, is the only reliable measure available of national prevalence and trend. The 2010/11 survey<sup>6</sup> showed that 7% of women and 5% of men had experienced domestic abuse over the previous twelve months, equivalent to 1.2 million female victims and 0.8 million male victims (a 60-40 split). Overall, 30% of women and 17% of men had experienced domestic abuse since the age of 16. The 2010/11 figures are the lowest since 2004/05 and no statistically significant change since 2008/09. This would suggest an overall decline in DV that has flattened out. Nevertheless, the Home Office estimates<sup>1</sup> that DV accounts for 15% of all violent crime and for 35% of murders. Mirlees-Black (1999) summarised the key risk factors of victims of DV<sup>7</sup>. For women, risks of physical assault were highest for those aged 16 to 24, separated from their spouse, Council tenants and in poor health and/or with financial difficulties. For men, the risks were highest for those aged 16 to 24, cohabiters, unemployed and/or in financial difficulties. Victims were found to have far higher levels of alcohol consumption than non-victims, but may be either a cause or a consequence of victimisation.

The overall proposition to be tested then is whether or not football tournaments are associated with an increase in the risk of DV. It is not that football tournaments *cause* DV but rather that excitements, disappointments and adrenalin flow resulting from watching a national team play may exacerbate existing tensions within a relationship that results in lost tempers and violence or abuse. Such behaviours may be made worse or more likely when alcohol has been consumed.

The Home Office study of the 2006 World Cup<sup>1</sup> used data for 46 Basic Command Units (BCU) from 17 Police Forces in England and Wales (there are a total of 219 BCU across 43 Forces). The study compared both incident and offences data for DV on the six match days when England played. The control was a two month period from 3<sup>rd</sup> February to 31<sup>st</sup> March 2006 during which an enforcement campaign against DV was being carried out. Not only may the control be inappropriate in terms of seasonal effects but that the campaign might have biased the recording of DV in participating BCU. The BCU were also mostly urban areas. The findings were that whilst per match increase in *incidents* ranged from +4.6% to +31.4%, the per match change in *offences* ranged from -11.3% to +28.9%. Importantly the study did not differentiate between the outcome of each match – win, lose or draw for England – which in this study was found to be an important factor.

Whereas the Home Office can obtain data from Police Forces on DV through internal channels, ordinary citizens must request such data through the provisions of the Freedom of Information Act 2000. Consequently a Freedom of Information (Fol) request for DV data was made by the BBC.

The first FoI was phrased: “please can you tell me how many reports of domestic violence you received between the dates of 11 June 2010 and 11 July 2010” (the period of the FIFA 2010 World Cup). A separate FoI request had to be made to each of the 52 Police Forces in the United Kingdom. This was repeated for the FIFA 2006 World Cup dates. After the data had been received and integrated by the BBC, the lead author was asked to assist in the analysis. He identified that a stronger control against which to test the World Cup figures was required and further FoI requests were made for equivalent dates (covering the same days of the week) in 2005 and 2009, that is, the year preceding each World Cup. Thus a total of 208 FoI requests had to be made in order to carry out this study – a time consuming effort should others be contemplating FoI requests of a similar nature.

To understand some of the issues around finding a suitable control in statistical testing of DV data, some historic data are graphed in Figures 2 and 3. Figure 2(a) shows the daily count of DV offences for London for the financial year 2000/01 against the daily average of 131 offences. There is a strong short-term periodicity which is a weekly cycle. The largest spike is New Year with a build-up over Christmas. So much for the season of goodwill. Figure 2(b) shows a 14-day moving average of 16 months of data to illustrate other patterns, not all of which are easily explained. Of note is a peak in June 2000 which corresponds with the period of the 2000 UEFA Cup and is not repeated in June 2001 which is close to the average for the period. Figure 3(a) gives the percentage of DV that is reported on each weekday. DV is higher at the weekend and lower during mid-week. This is reinforced in Figure 3(b) which shows percentage change on the previous day with a sharp increase on Friday, with peak increase on Saturday. Reporting of DV may not correspond to the day on which it happened and it may well be that the relatively high Monday figures have residual reporting from the week-end. Any control for DV must reflect the same day of the week and should preferably be for the same time of year.

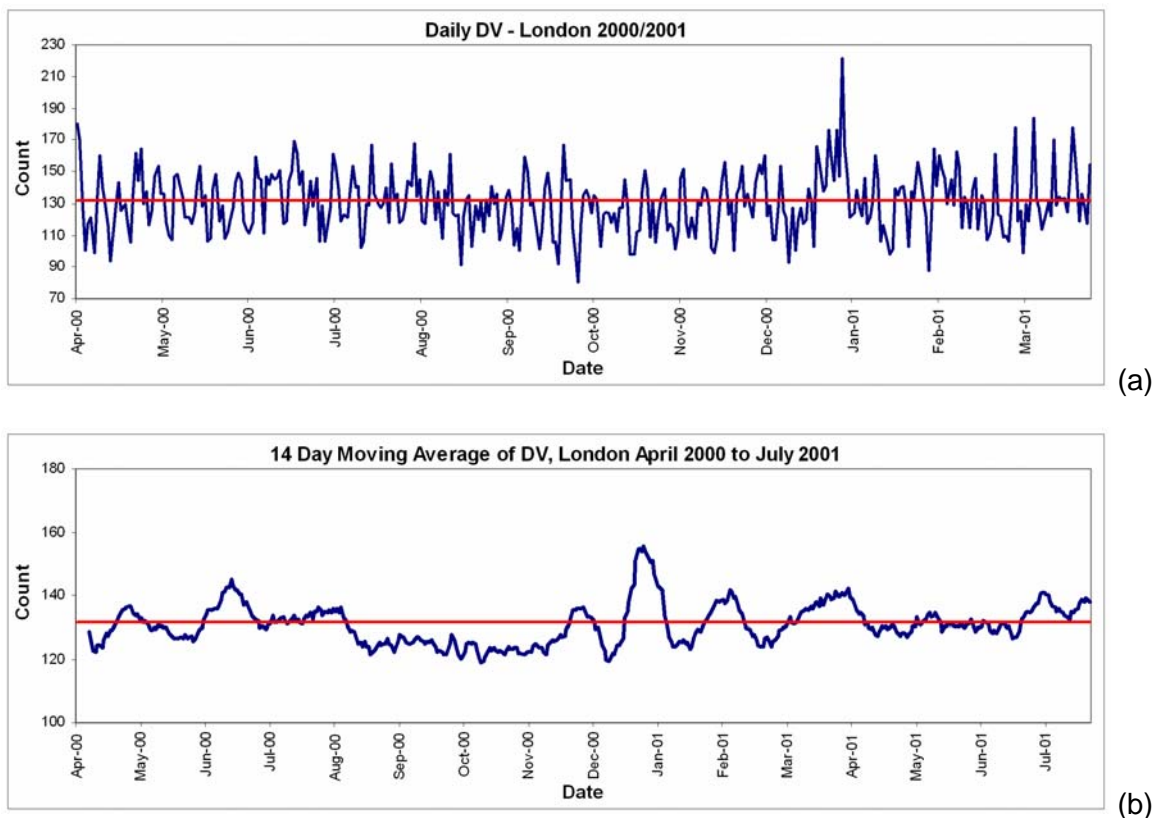


Figure 2: DV data for London; (a) daily count of domestic violence against the daily average for 2000/01; (b) 14-day moving average for 16 months from April 2000.

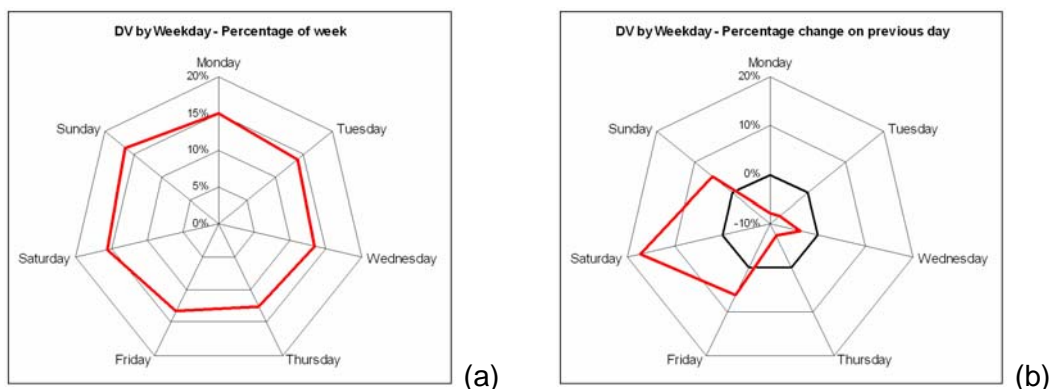


Figure 3: Domestic violence by weekday for London 2000/01; (a) each day as a percentage of all DV; (b) as percentage change on previous day.

Given the data for this study was based on 208 separate FoI requests, it will come as no surprise that there were data consistency problems. There were no returns at all from Lincolnshire, some Forces had changed their databases since 2006 and could not return the earlier data, and for some the totals for each period seemed such a contrast (sometimes by an order of magnitude) as to be considered dubious. Returns for the City of London (which has a very small residential population) were in single digits and would produce small number problems in the analysis and could result in the identification of individuals if included. As the story was being run by the BBC<sup>2</sup>, Cheshire challenged the data they had provided and had to be excluded from the final analysis. Also, Nottinghamshire provided revised, more consistent data after the story was run and which have been included in this paper. In the end, a re-run of the 2006 World Cup analysis would be insufficiently robust due to missing and inconsistent data. Instead the analysis presented here focuses on the effect on DV rates of England matches in the 2010 World Cup using data from 33 out of 39 Police Forces in England, covering 77% of England's population. The dates of matches played by England and the results are given in Table 1. The count of reported DV by Police Force is given in Table 2.

Table 1: England fixtures during 2010 FIFA World Cup.

Match date	<b>Saturday</b> 12 <sup>th</sup> June 2010	<b>Friday</b> 18 <sup>th</sup> June 2010	<b>Wednesday</b> 23 <sup>rd</sup> June 2010	<b>Sunday</b> 27 <sup>th</sup> June 2010
Fixture	England vs USA	England vs Algeria	England vs Slovenia	England vs Germany
Result	<b>Draw</b> (1:1)	<b>Draw</b> (0:0)	<b>Win</b> (1:0)	<b>Lose</b> (1:2)

Table 2: DV data by Police Force area for England fixtures: counts and rates per thousand population aged 16 and over.

Match day	<b>Saturday</b>		<b>Friday</b>		<b>Wednesday</b>		<b>Sunday</b>	
Result	<b>Draw</b>		<b>Draw</b>		<b>Win</b>		<b>Lose</b>	
Police Force	Count	Rate	Count	Rate	Count	Rate	Count	Rate
Avon and Somerset	52	0.039	33	0.024	48	0.036	76	0.056
Bedfordshire	25	0.052	25	0.052	26	0.054	49	0.101
Cambridgeshire	41	0.064	51	0.080	43	0.067	66	0.103
Cleveland	49	0.108	37	0.082	53	0.117	66	0.146
Cumbria	21	0.051	24	0.058	21	0.051	40	0.097
Devon and Cornwall	73	0.052	67	0.048	91	0.065	110	0.078
Dorset	29	0.049	21	0.035	32	0.054	38	0.064

Essex	24	0.017	13	0.009	35	0.025	27	0.019
Greater Manchester	283	0.135	198	0.094	217	0.103	356	0.169
Hampshire	119	0.077	83	0.054	111	0.072	134	0.086
Hertfordshire	39	0.044	23	0.026	41	0.047	47	0.053
Humberside	64	0.084	47	0.062	67	0.088	82	0.107
Kent	82	0.060	42	0.031	79	0.058	102	0.075
Lancashire	85	0.072	69	0.059	119	0.101	160	0.136
Leicestershire	18	0.022	15	0.018	24	0.030	25	0.031
Merseyside	106	0.096	88	0.080	122	0.110	152	0.137
Metropolitan	375	0.060	331	0.053	365	0.058	453	0.072
Norfolk	19	0.026	20	0.028	32	0.044	31	0.043
North Yorkshire	39	0.059	33	0.050	45	0.068	70	0.105
Northamptonshire	50	0.090	28	0.050	40	0.072	69	0.124
Northumbria	115	0.098	75	0.064	91	0.077	186	0.158
Nottinghamshire	120	0.133	76	0.085	113	0.126	181	0.201
South Yorkshire	105	0.097	73	0.067	117	0.108	135	0.125
Staffordshire	43	0.049	44	0.050	65	0.074	93	0.106
Suffolk	31	0.052	18	0.030	27	0.046	36	0.061
Surrey	43	0.048	36	0.040	50	0.055	54	0.060
Sussex	63	0.049	59	0.045	62	0.048	82	0.063
Thames Valley	91	0.051	87	0.048	114	0.063	138	0.077
Warwickshire	33	0.075	23	0.052	32	0.072	47	0.106
West Mercia	17	0.017	19	0.019	13	0.013	26	0.027
West Midlands	145	0.069	120	0.057	137	0.065	184	0.087
West Yorkshire	120	0.066	92	0.051	105	0.058	127	0.070
Wiltshire	20	0.038	10	0.019	20	0.038	27	0.051
<b>Total</b>	<b>2539</b>	<b>0.065</b>	<b>1980</b>	<b>0.051</b>	<b>2557</b>	<b>0.065</b>	<b>3469</b>	<b>0.088</b>

Whilst there is a clear contrast in the national total between the Wednesday draw and the Sunday lose, there seems little to separate the Saturday draw and the Wednesday win. Nevertheless, as shown in Figure 2, Wednesdays tend to have less DV ordinarily than Saturdays, so for the Wednesday total to slightly exceed the Saturday total appears elevated. Account also needs to be taken of the base population size which varies across Police Force areas with Metropolitan (London) for example having fifteen times the population of Cumbria and other things being equal could expect fifteen times more DV. All counts (including those of the control) were therefore transformed to rates per thousand population using Office of National Statistics (ONS) mid-year estimates for residents aged 16 and over. Whilst the definition of DV is 18 and over, the nearest age banding in the mid-year estimates is 16 and over. Using rates, the figures for Cumbria and Metropolitan are not so dissimilar.

The results of the analysis were intended to inform the general public (through the BBC) and therefore had to be relatively simple (whilst being adequately robust) for a lay reader to understand and if necessary for interested third parties to be able to scrutinise. The original thinking about the control against which to test the data in Table 2, was to use the equivalent days in 2009. The 2010 UEFA World Cup started with its opening ceremony on Friday 11<sup>th</sup> June and ran for 31 days to the final on Sunday 11<sup>th</sup> July. The equivalent period in 2009 is from Friday 12<sup>th</sup> June to Sunday 12<sup>th</sup> July. This ensures that each day of the week appears the same number of times in each period. Thus the 2009 control for England's Saturday match was taken as the average rate per thousand population aged 16 or over (based on ONS 2009 mid-year estimates) for the five Saturdays over the equivalent tournament period in 2009 (n=30 Police Forces). However, the visual comparison of June 2000 and June 2001 in Figure 2 would suggest a broader effect than just the individual match days. In other words, because DV may not be reported to the police on the day it occurs or the DV

may not occur on the match day but say the day before or after, then there will be a more diffuse heightened incidence of DV over the tournament period. Some might argue that the rate of DV had risen in general from 2009 to 2010 and that a 2009 control would then be seen as unduly low and an unfair comparison. So a more stringent control was devised to test the effect of the match days within the 2010 period. Thus the 2010 control for England's Saturday match was taken as the average rate per thousand population aged 16 or over (based on ONS 2010 mid-year estimates) for the four other Saturdays when England did not play in the 2010 tournament period (n=33 Police Forces). The difference between match days and control was expressed as the proportional change in the rate from control to match day, making it possible to test the significance using a one-sample T test with a test value of zero (no change).

Table 3 summarises the results of the significance testing, with the proportional changes in the rates expressed as percentages. All data were tested for normality and only the proportional change in the rate for the Friday match against the 2009 control was found to be non-normal. This was consequently tested using a related sample Wilcoxon signed rank test using the match day rate and the 2009 control rate. The proportional change in the rate between the 2009 and 2010 control shows a 10% to 16% overall increase in the rate of DV and is a significant difference at the 95% confidence interval except for the Sunday when the null hypothesis of no significant could not be rejected. One might conclude that this reflects an increasing trend in the rate of DV from 2009 to 2010, but according the crime survey<sup>6</sup> DV in 2010/11 was at its lowest since 2004/05. More likely it reflects a general increase in DV between 2009 without the presence of a football tournament and 2010 with the presence of a football tournament. The significance testing using either the 2009 control or the 2010 control came up with the same result, namely that on days when England drew there was no significant increase in the rate of reported DV and that when England either won or lost there was a significant increase in the rate of reported DV.

Table 3: Results of significance testing on proportional rates of change between the 2009 and 2010 control, England match days using the 2009 control, and using the 2010 control.

Match day	Saturday	Friday	Wednesday	Sunday
Result	Draw	Draw	Win	Lose
Difference between 2009 and 2010 control				
Proportional change in rate	15.9% t=2.16 df 29 p=0.039	13.5% t=2.14 df=29 p=0.041	14.6% t=2.36 df 29 p=0.025	10.1% t=0.88 df=29 p=0.38
Difference between match days and 2009 control				
Proportional change in rate	5.2% t=1.49 df 29 p=0.153	5.1% <sup>a</sup> n=30 Z=-1.31 p=0.192	35.4% t=5.87 df 29 p<0.001	33.9% t=6.16 df 29 p<0.001
Difference between match days and 2010 control				
Proportional change in rate	-1.91% t=-0.26 df 32 p=0.797	0.1% t=0.57 df 32 p=0.595	27.7% t=7.07 df 32 p<0.001	31.5% t=6.39 df 32 p<0.001

<sup>a</sup> Wilcoxon signed rank test

The results would seem pretty irrefutable, even surprising that the result of the match is important and that win or lose there will be a significant increase in the rate of reported DV. The headline percentages using both 2009 and 2010 control are such a contrast that we would be able to rest our case that heightened rates of DV are associated with national football tournaments. Of course the BBC piece<sup>2</sup> resulted in a flurry of emails that both congratulated and challenged the findings, no doubt the debate will rumble on. Of course we realise that we have no evidence at an individual level that all or any of the reported DV cases in 2010 resulted from or could be associated with watching England's fixtures. These are aggregate Police Force level figures. Nevertheless, if it wasn't the football, then what was it? We can think of no other event occurring on the

Wednesday's England win and the Sunday of England's exit from the tournament that would explain these significant increases in the rate of reported DV.

## References

1. Police and Crime Standards Directorate (2006) *Lessons Learned from the Domestic Violence Enforcement Campaigns 2006*. Home Office, London.
2. Cafe, R. (2012) *Euro 2012: Tournament football and domestic violence*.  
<http://www.bbc.co.uk/news/uk-england-18379093>
3. Home Office (2010) *User Guide to Home Office Crime Statistics*. Home Office, London.
4. National Policing Improvement Agency (2009) *The National Standard for Incident Recording: Definitions and Guidance*.
5. Audit Commission (2007) *Police Data Quality 2006/07*. Audit Commission, London.
6. Smith, K.; Osborne, S.; Lau, I. & Britten, A. (2012) *Homicides, Firearm Offences and Intimate Violence 2010/11: Supplementary Volume 2 to Crime in England and Wales 2010/11*. Home Office, London
7. Mirlees-Black, C. (1999) *Domestic Violence: findings from a new British Crime Survey self-completion questionnaire*. Home Office, London.

*Should any reader feel affected by the content of this paper, the UK National Domestic Violence Helpline is 0808 200 0247. Anyone in immediate danger should always phone the emergency services.*

Allan Brimicombe is Professor of Geo-Information at the University of East London, UK. He is Chair of the Crime & Justice Statistics Network.

Rebecca Cafe is a Broadcast Journalist with the BBC News website.