

## REVIEW ARTICLE

# Major sports events and domestic violence: A systematic review

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**Abstract**

Increased rates of domestic violence (DV) have been associated with events such as public holidays, seasonal variations, disasters and economic crises. Sport is seen as gendered, exemplifying hegemonic masculinity and associated violence, with the link between sporting culture and violence against women well recognised. This paper reports on a systematic review of empirical research literature exploring the link between major sporting events and incidence of DV. We searched MEDLINE, CINAHL, PsycINFO, SPORTDiscus and Proquest Central databases from inception to December 2020 for quantitative studies examining major sports events and reports of DV using a pre-post comparison design. Study quality was assessed using the Kmet quality assessment tool. The review identified 1445 records following duplicate removal. Once screened and assessed for eligibility, 12 studies met the inclusion criteria. Results are presented qualitatively due to the heterogeneity across studies. Most studies originated in North America and the United Kingdom, used police records as their data source for measuring incidences of DV and few looked beyond the day of the sports event for recorded incidences of DV. Studies reviewed suggested that there is an association between certain major sports events and increased reporting of DV. However, studies' findings conflicted with regards to whether increases were associated with contact sports, the rivalry between competing teams, whether the events were emotionally salient and whether alcohol was a contributing factor. In conclusion, there is limited research globally. Heterogeneity and conflicting findings mean that more research is needed to understand the associations and inform community prevention/interventions to address DV.

**KEYWORDS**

domestic abuse, intimate partner violence, sports events, systematic review, violence against women

## 1 | INTRODUCTION

Domestic violence (DV), or more specifically, intimate partner violence, is a global epidemic with almost one-third of women (27%) aged over 15 years reporting that they have been subjected

to violence by an intimate partner in their lifetime (Sardinha et al., 2022). Thirteen percent have experienced such violence in the last 12 months (Sardinha et al., 2022). For western Europe, North America and Australasia, the lifetime prevalence rates range from 21% to 25% (World Health Organization, 2021a).

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Domestic violence 'refers to behaviour by an intimate partner or ex-partner that causes physical, sexual or psychological harm, including physical aggression, sexual coercion, psychological abuse and controlling behaviours' (World Health Organization, 2021b). Globally, men are the most frequent perpetrators of this violence (World Health Organization, 2021a).

Domestic violence against women and children has significant effects on victims-survivors physical and mental health and well-being, which may be long lasting (Lum On et al., 2016). Health consequences for women include depression, anxiety and post-traumatic stress, poor sexual and reproductive health outcomes (such as abortion, pre-term birth, sexually transmitted infections) and chronic pain (Trevillion et al., 2012). Children experience detrimental changes in behaviour (aggression and/or mood disorders) and disrupted development (Anderson & van Ee, 2018; Vu et al., 2016). Along with health costs, there are serious social and economic consequences.

## 1.1 | Drivers of DV

While gender inequality is the core driver of DV, other reinforcing factors such as socio-economic inequality and the condoning of violence may contribute to the increased frequency/severity of abuse and harm caused (Our Watch et al., 2015). The increased rate of DV has been investigated across several contexts such as public holidays, seasonal variations, disasters and economic crises (Parkinson, 2019). A study in Australia examined several contexts and associated DV reports under the hypothesis that such contexts may provide opportunities for violent behaviour (Braaf & Gilbert, 2007). They found some indication of seasonal variation in DV reports, with summer associated with an increase in reporting, as well as some increase around certain public holidays. However, neither season nor public holiday impact was consistent across the various Australia States and Territories.

Additional risk factors for DV perpetration may be harmful masculinities or male behaviours that involve poor attitudes towards women, male peer relationships and the harmful use of alcohol (Our Watch, 2019; Wilson et al., 2014). These behaviours may be exacerbated in a certain male-dominated, aggression-condoning social and leisure settings, like sports. Sport has long been seen as a cultural setting that contributes to violence against women (Gagnon, 1996), with the occurrence of major sports events being linked to an increase in reported DV incidences (Card & Dahl, 2011; Trendl et al., 2021).

## 1.2 | Violence and sport

The link between sporting culture and violence against women has been recognised for several decades (Sabo et al., 2000; Sabo & Runfola, 1980). Violence and sport are intricately connected. Violence is sanctioned in sport, particularly in relation to team

### What is known about this topic

- Domestic violence has significant effects on victims-survivors health.
- Risk factors for domestic violence perpetration include harmful male behaviours such as poor attitudes towards women and use of alcohol.
- Such behaviours are exacerbated in male-dominated, aggression-condoning social settings, for example sport.

### What this paper adds

- Studies reviewed to show a correlation between sports events and incidences of domestic violence.
- Why a correlation exists and in what contexts is contested; it may relate to the culture of a particular sport in a particular country, compounded by team rivalries, alcohol and emotional salience of matches.
- Scarcity of studies, geographical bias and heterogeneity across methods means more research is required to underpin intervention development to prevent domestic violence.

contact sports (Kerr, 2005). Studies argue an inherent association between sport and violence, and an acceptance that sports promote hostility towards and dominant behaviour, through physical strength, over the opposition (Kerr, 2005; Messner, 1992). Sport has long been seen as gendered, exemplifying hegemonic masculinity and associated violence (Clark, 2017; Messner, 1992). Coaches see violence as an important aspect of the sport, even if non-contact, promoting aggression for performance (Clark, 2017). Aggressive language such as sledging or 'bagging out', a term for deriding the opposition used in Australia, can blur the boundaries in the sport of what is and is not acceptable thereby normalising derogatory behaviour outside of sport (Corboz et al., 2016).

The normalising of such violent and aggressive behaviour in sports has long been linked to rates of violence by male athletes, particularly sexual assault, across collegiate and professional sports (Koss & Gaines, 1993; Sønderlund et al., 2014). Sønderlund et al. argue that 'potentially negative athlete social identity as derived from sports team membership' (p. 6) supports other research that has shown sports endorse hegemonic masculinity, sexist attitudes and violence both on and off the field. Young male athletes are socialised early into sexual violence, with Cheever and Eisenberg (2020) finding that youth involved in sports are more likely than their non-sport peers to coerce a partner into sex. Sexual violence and DV perpetrated by high-profile male professional athletes have increasingly been seen in the media, with varied responses by sports organisations and fans regarding the veracity of the allegations, for example across the American National Football League (NFL; Doerer, 2018), Australian Rugby League (BBC, 2021) and the English Premier League (O'Riordan, 2021).

### 1.3 | Sports events and fan violence

Research has focused on the connection between sport and men's violence more broadly due to the moods associated with and displayed while watching sports (Gagnon, 1996). The notion that sports consumers display 'irrational passions' has been acknowledged as a unique part of sporting culture and the business of sport (Smith & Stewart, 2010, p. 4). Smith and Stewart (2010) argued that sports fans experience 'intensely emotional ... attachments' to teams, their 'blind optimism' persists and memories are 'highly charged', with some fans being 'passionate to the point of addiction' (p. 4).

It is perhaps such an emotive connection to sport, rather than excessive alcohol consumption, that most closely connects major sporting events with aggressive and/or criminal behaviour (Ostrowsky, 2014). Both Sivarajasingam et al. (2005) and Quigg et al. (2013) found a connection between international soccer match days and an increase in assault-related presentations at emergency departments, whereas Miller et al. (2013) in Australia found a similar increase following a local football team match (which was not associated with alcohol). There has been a significant amount of research making the positive connection between major sporting events and violent and/or criminal behaviour by fans following matches (Block, 2021; Kalist & Lee, 2016). Given these research findings over the last 20 years, it is unsurprising that connections have also been made between aggression when watching sports and violence against women (Gagnon, 1996).

Research has so far shown that connections between major sports and assaults or crime more broadly are not necessarily the same across all sports or locations: following the broadcast of tennis in Switzerland admission rates to hospitals decreased (Correia et al., 2018), and no increase in (sex) crimes was seen following the Formula 1 Grand Prix in the United States (Piquero et al., 2021). Furthermore, rates of increase in hospital admissions or crime have been shown to potentially differ between countries and between the level of significance of the match or surprising result (Hughes et al., 2018; Kalist & Lee, 2016).

While some research has been completed on the relationship between DV and sport, there is limited scholarship to support community prevention strategies and the development of interventions to address this violence. The aim of this review is to explore what link there may be between major sporting events and the occurrence of DV in order to support future prevention and response strategies. The question the review seeks to answer is 'What evidence is there of an association between major sporting events and changes in reported incidence of DV?'

## 2 | METHOD

We followed a systematic review methodology in order to systematically search for, appraise and synthesise research studies examining the association between major sports events and incidences

of DV (Grant & Booth, 2009). This would then also establish what is known, what is unknown and what recommendations there are for practice and future research (Grant & Booth, 2009). We followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to develop the study protocol and followed these guidelines in the reporting of our methods (Page et al., 2021). The review protocol was sent to PROSPERO for registration in December 2020.

### 2.1 | Search strategy

Various disciplines of scholarship may be interested in the issue of DV and major sports events. As such, we searched across targeted databases best suited to representing relevant disciplines. Database decisions were also informed by our experience conducting scoping reviews on related topics in the field of violence against women. We searched in MEDLINE and CINAHL for medical and allied health disciplines, PsycINFO for psychology and social science, SPORTDiscus for sport scholarship, and the broad Proquest Central database for extensive coverage of education and social science. The search was conducted using Boolean operators tailored to each database. The search included keywords, truncations and MESH/subject headings. The subject heading of 'sports' included all studies allocated with the sports heading and was 'exploded' to include any specific sport types (e.g. football) listed within sports. All database searches, except for SPORTDiscus which does not use subject headings, included the exploded subject heading sports. All database searches, except SPORTDiscus, also included the subject heading 'domestic violence'. Synonyms for domestic violence were also included based on the thesaurus tree of each database. The search was conducted from inception to December 2020. Search results were filtered by the English language. We also searched reference lists of papers in the full-text review stage. The search strategy for MEDLINE has been included in Table 1 as an example.

Numerical final search results were recorded and presented, using a PRISMA flow diagram (Page et al., 2021). EndNote X9 bibliographic management software was used to collate search results and to identify and exclude duplicates. The remaining search results were exported to the systematic review production tool Covidence for title/abstract and full-text paper selection (Veritas Health Innovation, 2021). Covidence also checked for any duplicates missed in both the Endnote identified and manually identified processes. Two authors independently screened results, informed by the eligibility criteria, at the title and abstract levels. Any conflicts in screening results between authors were resolved by a third author. The same process was followed for full-text screening. Exclusion reasons, based on eligibility criteria, were noted during full-text screening, collated and recorded in the PRISMA diagram (Figure 1).

## 2.2 | Inclusion and exclusion criteria

Our review looked for peer-reviewed studies that examine the incidence of DV in relation to the timing of major sports events. As such studies needed an official measure of DV incidence, such as administrative data from police, hospital and/or specialist DV support service sources. We looked for studies with incidence data that reported on DV between partners or spouses. In relation to DV, the incidence is defined as the number of incidents of family, domestic and sexual violence in the relevant population within a specified reference period (Australian Bureau of Statistics, 2013a). We acknowledge, however, that there are inherent limitations to estimating community incidence of DV from administrative data. This includes

victims/perpetrators engaging with support services, health services and/or the justice system in varied ways and at varied times or not at all (Australian Bureau of Statistics, 2013a, 2013b). Administrative data miss the proportion of DV incidents that are not reported to police or result in health or support service engagement. Additionally, accurate records will rely on police personnel, health/medical staff and support workers accurately identifying an incident of DV and defining such incidents in a standardised way, something that is currently inconsistent (Australian Bureau of Statistics, 2013a, 2013b). Therefore, we are interested in the change in single incidents of reported DV in the time directly after a major sports event/s, rather than overall estimates of community DV incidence.

To be included studies needed a major sporting event as an exposure variable. We characterised major sports events as professional team sports games and championships (e.g. football), major races such as horse racing (e.g. the Melbourne Cup) or motor racing (e.g. Formula 1 racing), or other major sports events such as boxing title fights. This includes events that are viewed by spectators in-person at the event or televised at a venue (e.g. a bar) or at home.

Finally, included studies needed to match a particular study design. Due to the focus on DV incidence as the outcome variable of interest, only studies using quantitative measures of DV in relation to major sports events were considered. Thus, we searched for studies that examined quantified administrative DV data pre- and post-major sports events or ongoing patterns in quantified administrative data across periods where major sports events occur. Included studies, therefore, needed to have longitudinal or pre-post comparison designs.

TABLE 1 Medline search strategy

1. televise\* OR event\* OR tournament\* OR spectator\* OR fan\* OR supporter\* OR match\* OR game\* OR TV OR championship\* OR series OR multimedia
2. sport\* OR football OR rugby OR soccer OR cricket OR hockey OR baseball OR basketball OR gridiron OR racing OR AFL OR tennis OR boxing OR motor sports
3. Sports MESH (explode; include all subheadings)
4. 2 OR 3
5. famil\* violence OR Intimate partner abuse OR Intimate partner violence OR domestic abuse OR domestic violence OR partner violence OR wife abuse OR spous\* abuse OR family conflict OR batter\* OR inter-parental conflict OR gender-based violence
6. domestic violence MESH (no explode; include all subheadings)
7. intimate partner violence MESH (no explode; include all subheadings)
8. gender-based violence MESH (no explode; include all subheadings)
9. spouse abuse MESH (no explode; include all subheadings)
10. 5 OR 6 OR 7 OR 8 OR 9
11. 1 AND 4 AND 10

Search fields: Title, Abstract, Keywords  
Filtered by: English language

## 2.3 | Quality assessment

The quality of included studies was assessed using the Kmet quality assessment tool (Kmet et al., 2004). This tool is pitched as being

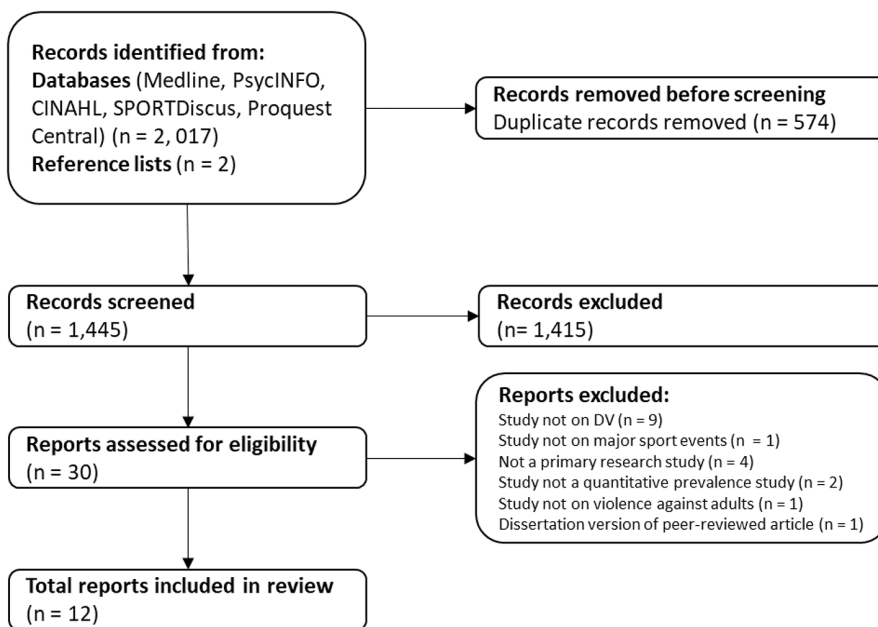


FIGURE 1 PRISMA diagram of study selection. PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses

TABLE 2 Characteristics, outcomes and quality of included studies

First author (year)	Country (location)	Sport (s) and competition level	# Years (year)	DV data	Sample size (# DV reports/incidences)	Time period for data
Aubato (2016)	USA, Philadelphia	NFL; national league	1 (2009)	Police records of arrests	322 DV reports across 20 game days	Game day only: 8 h from match start
Boutlier (2017)	Canada, Calgary	Football, Ice hockey, UFC; national league	4 (2011–2014)	Calls made to Calgary police or helpline	69,912	Daily/monthly calls
Card (2011)	USA, 6 single-team cities	NFL; national league	11 (1995–2006)	Police reports from the National Incident-Based Reporting System	Not reported	Game day only: 12h, 12p.m.–12a.m.
Dickson (2016)	Scotland, Strathclyde region (incl. Glasgow)	Soccer; national league	8 (2003–2011)	Police reports	Not reported	24h: from 12p.m. game day
Gantz (2006)	USA, 15 NFL cities	NFL; national league	6 (1996–2002)	Police records on DV dispatches	Not reported	Game day, and each of the 5 days post-game day

Comparison sport	Reported on	Quality	Significant results
Basketball, Ice Hockey, Baseball	Game day and type of sport (compared to NFL)	Moderate	<i>Football game days</i> : higher total DV arrests game day than comparison Sundays ( $p \leq 0.001$ ); no significant difference between game days and holidays. <i>Comparison sports</i> : higher DV arrests on football game days than all other sport game days ( $p < 0.01$ ); higher DV arrests on football game days compared to basketball/baseball game days ( $p < 0.01$ ); no statistical difference between football game days and hockey game days; hockey game days had higher mean score for DV arrests than Basketball/ Baseball game days
None	Play-off vs. regular game, game rivalry, major events	Moderate	A football game against a chief rival and a football championship game saw increases in DV calls ( $p \leq 0.01$ ; $p \leq 0.05$ ). No other significant results was found.
None	Unexpected loss/win, the timing of reports being made, important games (play-off), games against rivals and frustrating games (high number of 'sacks', turnovers and penalties)	Strong	Unexpected loss significant (10%) increase in DV reports, but not unexpected win nor loss in an expected close game. <i>Timing of Violence Reports</i> : increase in DV reports for games that have just finished with the result of unexpected loss, but not during a game or several hours post-game completion. <i>Rivalry</i> : Unexpected loss against a rival shows a greater effect on DV reporting compared to non-rival games (20% vs. 8%, $p = 0.01$ ). Marginal increase in DV reports following an upset win against a rival ( $t = 2.0$ ). <i>Emotionally salient games (play-off contention)</i> : increase in DV reports (13%) when the team is in play-off contention and the game results in an unexpected loss. The increase reduces to 5% when an expected close game results in a loss. No significance when the team is not in play-off contention. <i>Frustrating games (high number of sacks, turnovers or penalties)</i> : Unexpected losses following a frustrating game are associated with an increase in DV reports (15%) compared to unexpected losses following a non-frustrating game (7%). If the team is in play-off contention and is either (1) playing a rival or (2) the game was frustrating, unexpected loss results in a 17% increase in reports, compared to a 13% increase for all play-off contention games
None	Traditional rivals game, context (playing at home, televised), important games (contention to win the league), controversial games (high number of fouls or bookings)	Strong	An increase (36%) in DV reports when Celtic play Rangers (traditional rivals), but not when they play other teams unless the game is both important and televised ( $p < 0.05$ when Celtic play, and $p < 0.10$ when only Rangers play). Important matches (small lead/close to lead in table): increase in DV reports for both Celtic and Rangers (Celtic 9.1%, $p < 0.05$ , Rangers 8.5%, $p < 0.10$ ), more so if there are unexpectedly bad results (DV increase of 37%, $p < 0.01$ when Celtic are predicted to win and draw; DV increase of 24%, $p < 0.01$ when Rangers are predicted to win and draw and DV increase of 16%, $p < 0.05$ when Rangers expect a tight game and they lose). No significance related to controversial games or match outcomes except where the games are particularly salient and the title is still to play for
None	Timing of the DV report; importance/intensity of game: played at home, against a rival, play-off, outcomes, weeks left in the season, close to the top of league, game prediction; Superbowl	Moderate	Game day had an effect on DV dispatches ( $p = 0.32$ ). No effect on the days following game day. <i>Importance/intensity</i> : the more team expected to lose, the higher the dispatches the day of the game ( $p = 0.009$ ) and up to 3 days post-game. When games matter the most (a few weeks remain and the team is in contention), there are more DV dispatches. No significance is shown when there are many games remaining or the team is out of contention. <i>Super Bowl Games</i> : Significant relationship between Super Bowl and DV dispatches for game day ( $p = 0.007$ ) and both game day and the next day ( $p = 0.029$ ), but not the third day

(Continues)

TABLE 1 (Continued)

First author (year)	Country (location)	Sport (s) and competition level	# Years (year)	DV data	Sample size (# DV reports/incidences)	Time period for data
Holman (2010)	Canada, 12 cities	Ice Hockey; national league	Across 5 years	Police records of DV (spousal violence) complaints	Not reported	Game day only: days with a televised NHL play-off game
Kirby (2014)	England, Lancashire	Soccer; international (World Cup)	3 (2002, 2006 and 2010)	Police reports of DV	2002 = 17,586; 2006 = 19,548; 2010 = 26,653	Game day only
Sachs (2000)	USA, Los Angeles	NFL; national league	3 (1993–1995)	Computerised county sheriff records of dispatches to domestic disputes	26,051	Game day only
Trendl (2021)	England, West Midlands	Soccer; international (World and Euro Cup)	9 (2010–2019)	Police crime records for DV crimes and non-crimes	427,351	Game day: 3 h intervals—6 and 3 h before the match, during the match and 3, 5, 12 and 24 h post-match
White (1992)	USA, Northern Virginia	NFL; national league	2 (1988–1989)	Commonwealth of Virginia Trauma Registry emergency room admissions of trauma victims	2697	Game day and up to 2 days post-game day
Brimicombe (2012)	England, 33 of 39 police forces across England	Soccer; international (World Cup)	1 (2010)	Police reports of DV	Not reported	Game day only



Comparison sport	Reported on	Quality	Significant results
None	NHL city and non-NHL city, play-off days vs. non-play-off days, day of the week, home vs. away, game outcomes, alcohol use, repeat offender	Weak	<i>Play-off vs. non-play-off</i> : of the 12 cities, only two reported a significant change in the frequency of DV reports when comparing play-off games and non-play-off games. City A reported a significant increase in the frequency of DV reports on play-off versus non-play-off dates. City B reported the reverse, a significant increase in DV reports on non-play-off dates versus play-off dates. No other city reported a significant difference in DV reports between play-off and non-play-off dates. <i>Home vs. away and match outcomes</i> : there was either no significance found or insufficient data to analyse significance relating to home vs. away or match outcomes. <i>Alcohol</i> : data were only shown for City B and acknowledged to be of insufficient quality
None	England game day and the day after vs. non-England game days (all other days), game outcome	Strong	<i>Game days</i> : compared to non-game days, the relative risk (RR) of DV increases on game days where England wins/draws (RR = 1.256, $p < 0.001$ ) and more so on match days where England loses (RR = 1.382, $p < 0.01$ ). The day after game day also saw a marginally significant increase in RR (RR = 1.107, $p < 0.05$ ). <i>Day of the week</i> : A significant increase in RR was seen for Saturdays (RR = 1.435, $p < 0.001$ ) and Sundays (RR = 1.506, $p < 0.001$ ). <i>Year</i> : compared to the baseline year of 2002, both 2006 (RR = 1.104, $p < 0.05$ ) and 2010 (RR = 1.520, $p < 0.001$ ) showed significantly increased RR of DV
None	Game day vs. non-game day, NFL football season, play-offs, Super Bowl weeks	Moderate	While DV dispatches increased on average by 74% between Wednesday and Sunday in NFL weeks compared to 64% in non-NFL weeks, they did not reach statistical significance ( $p = 0.26$ ). No statistically significant results were found in this study
Rugby	Alcohol consumption, game outcomes	Strong	<i>Non-alcohol-related DV cases</i> : no evidence for an increase (or decrease) on days when the England football team plays, compared to non-match days. <i>Alcohol-related DV cases</i> : Significant 47% increase, 95% CI [26–71] (41%, 95% CI [18–69] increase in male-to-female reported DV), in the number of alcohol-related DV cases on days when England win and an 18% increase, 95% CI [7–30] (17%, 95% CI [5–31] increase in male-to-female reported DV) increase on days following an England match, in the number of alcohol-related cases reported after an England game, compared to non-match days. No increases in reported DV when England loses or draws. Increase in alcohol-related DV when England wins: in the 3 h period of the match, peaking in the 3 h period afterwards, declining to the original level in the 24 h post-game. <i>Rugby</i> : no significant increases in DV, alcohol-related or not, for any England rugby match vs. non-match days
None	Game day, game outcome, home vs. away, play-off vs. regular game	Strong	<i>Game day</i> : Trauma admissions are not significantly related to the occurrence of a game. <i>Type of game</i> : No association between trauma admissions and home vs. away nor regular vs. play-off games. <i>Game outcomes</i> : Significant increase in admissions for women on the day after Redskins win (e.g. odds of a woman being admitted for the reason of a gunshot wound, stabbing or assault are increased by 5.53 to 1 on the day after a win). There was a significant increase in male admissions on the day of Redskin losses
None	Game outcomes	Weak	<i>Game outcomes</i> : Significant increase in police reports on days England won compared to 2010 non-match days (27.7%, $p < 0.001$ ) and previous year's control day (35.4%, $p < 0.001$ ). Significant increase in police reports on days England lost compared to 2010 non-match days (31.5%, $p < 0.001$ ) and previous year's control day (33.9%, $p < 0.001$ ). No significant increase in police reports on days when England drew

(Continues)



TABLE 1 (Continued)

First author (year)	Country (location)	Sport (s) and competition level	# Years (year)	DV data	Sample size (# DV reports/incidences)	Time period for data
Williams (2013)	Scotland, Strathclyde region (incl. Glasgow)	Soccer; national league	3 (2008–2011)	Police reports of DV	111,474	24h from the game start

Note: Quality assessment: studies were classified out of 1.0, with strong articles categorised as >0.8, moderate (0.61–0.8) or weak (<0.6) based on Henry et al. (2016) amended version of Kmet et al.'s quality rating system. These categories were used as they most accurately reflected the authors' opinion on the quality of the studies.

Abbreviations: DV, domestic violence; IPV, intimate partner violence; NFL, National Football League; NHL, National Hockey League; RR, relative risk.

relevant to studies from a variety of fields and is one of the few tools that does not assume assessed studies will collect primary data from study participants. This is important as all studies in our review utilised secondary analysis of administrative data. The Kmet tool includes a set of assessment items for quantitative studies and a set for qualitative studies. But due to the quantitative nature of our research question, we only used the set of assessment items for quantitative studies. The tool has items that assess a studies' research question, design, sample/input data, sampling (if relevant), intervention design (if relevant), outcome/exposure measures, analysis and conclusions. Scores for relevant items are tallied and calculated as a proportion (expressed as a fraction of 1.0) of the total possible score. Although Kmet et al. (2004) did not include a score rating key, others have done so. Henry et al. (2016), using an amended version of the Kmet tool, designed a rating key. This key, which differentiates between strong (>0.8), moderate (0.6–0.8) and weak (<0.6) studies, was used in the current systematic review. For our process, two authors conducted independent study quality assessments. A third author conducted an independent assessment on any studies where the original two authors disagreed enough to rate the study in different strength ratings, the final rating being the one–two of the three authors agreed upon. If all three authors disagreed on the rating, a group discussion helped negotiate a final rating for the study in question.

## 2.4 | Results extraction

From included studies, we extracted study identifiers, country of origin, publication type, study design, sample and sampling information, the major sporting event exposure variable, the in-person or televised nature of the major sports event, the violence measure, mediating/moderating/explanatory variables, the analysis method, the accounting of any confounders and a description of the relevant study findings. If available, extracted study findings included the change or difference statistic and effect size, or association statistic where relevant, and statistical significance. Data were extracted by

one author and checked by a second author. Conflicts were resolved by a third author.

## 2.5 | Descriptive report on results

On data extraction, it was clear that there was significant heterogeneity (in design and outcomes) across the studies included in the review. We determined that a meta-analysis was not possible given the nature of the research question we were addressing. Instead, we chose to report on the results descriptively. We tabulated and summarised all findings with the measurement effects where available (such as percentages, *p* values or 95% confidence interval [CI]). Our analysis therefore highlights the factors relating to a major sporting event that has been associated with an increase in DV incidence and provides an overview of the evidence in this area.

## 3 | RESULTS

A total of 1445 records were found following our initial search and duplicate removal (Figure 1). Once screened and assessed for eligibility, 12 studies met the inclusion criteria for this review. These studies were mostly located in the United States of America (USA) focusing on the NFL (no. = 5), or the United Kingdom (UK) and focusing on soccer (England, no. = 3; Scotland, no. = 2). The remainder were Canadian studies (no. = 2) looking at Ice Hockey or a mix of sports that included Ice Hockey, American Football and Ultimate Fighting Championship (UFC). There is therefore a focus on team sports.

Dates of the publications ranging from 1992 to 2021, however, 75% (no. = 9) of the papers were dated 2010 and, later, reflecting a growing interest in this potential association. The quality of the included studies varied widely, with 42% (no. = 5) assessed as strong, 42% (no. = 5) assessed as moderate and 17% (no. = 2) assessed as weak.

We present a descriptive account of findings, looking first at the studies' methods and then at the results of the studies included in

Comparison sport	Reported on	Quality	Significant results
International team games	Celtic vs. Rangers, compared with non-game days and international game days	Moderate	The median number of reported DV incidents was significantly greater in relation to Celtic vs. Rangers games compared to control ( $p < 0.001$ ) and Scottish International games ( $p < 0.004$ ). There was no significant increase in DV reports on Scottish International game days compared to control

the review. Characteristics, outcomes and quality of the included studies can be seen in [Table 2](#).

### 3.1 | Study methods: context, data source and time

#### 3.1.1 | Context

The majority of studies included in the review examined national league matches (no. = 9) with the studies located in England specifically looking at the national team competing in World/European competitions (no. = 3).

Most studies focused on particular team's and/or geographical locations, with police data for that area being used as a measure of DV incidence. For example, where teams were based in a particular city, that city's police data were used. The assumption is being that those watching a televised sports event are more likely to be local to the teams in question. In the North American (the USA and Canada) studies using police data, the focus was often on one city [e.g., Philadelphia (Aduato, 2016), Los Angeles (Sachs & Chu, 2000) and Calgary (Boutilier et al., 2017) or multiple cities in which national leagues had teams located (Card & Dahl, 2011; Gantz et al., 2006; Holman et al., 2010)]. In comparison, studies based in England looking at national teams competing in international competitions focused on police data from a region (such as Lancashire or the West Midlands) (Kirby et al., 2014; Trendl et al., 2021) or across several regions (33 out of 39 police force regions in England) (Brimicombe & Cafe, 2012).

#### 3.1.2 | Data source

Almost all of the studies used police records as their data source for measuring incidences of DV (no. = 11). Only one early study used a hospital's emergency department admissions (White et al., 1992). One of the studies looked at a combination of police data and data from a specialised helpline for those in Calgary who were experiencing DV and/or sexual violence (Boutilier et al., 2017).

Police recording practices differ and as such the data used across the studies included incidences recorded as DV, abuse, or a domestic incident (but not considered a 'crime')—this may be either experiencing or witnessing such violence. Some specifically listed categories of DV incidents such as violation of abuse order, simple assault, aggravated assault, rape, felony DV assault, misdemeanour DV and DV non-criminal.

Some of the police records included detail on whether alcohol was present, whether it was a newly reported perpetrator or whether the perpetrator was a repeat offender (and if repeated, the time between incidences being reported) (Holman et al., 2010; Trendl et al., 2021), whether it was publicly perpetrated, resulted in injury or there was a delay between incidence and reporting. However, Holman et al. (2010) acknowledged that, for their study, police recording practices with regards to alcohol were inconsistent and as such could not produce any meaningful findings.

The hospital data looked across injuries to both men and women, including gunshot wounds, stabbings, assaults, falls, strikes with an object and lacerations (the last three being potentially used by patients to hide a DV incident) (White et al., 1992). The hospital data seem the least clear in terms of a correlation to a DV incident per se (as the identity of the perpetrator of assault is not recorded).

#### 3.1.3 | Time

One study looked at just one competition season's worth of data (Aduato, 2016). Three studies looking at international events either examined data across 1 year (Brimicombe & Cafe, 2012), 3 years (Kirby et al., 2014) or multiple years (Trendl et al., 2021). Other studies looked at data across multiple seasons/years, from 2 years (White et al., 1992) to 11 years (Card & Dahl, 2011).

Most of the data extracted for analysis related to the day on which the sports event occurred, many specifying the hourly range from the time the game started: from within 3h of the match starting (Trendl et al., 2021—study assessed three-hourly time periods up to 24h post-game starting), within 8 h of the game starting (Aduato, 2016) and within 12h (Card & Dahl, 2011) to within 24h of the match starting (Dickson et al., 2016; Williams et al., 2013). Other studies looked

at daily and monthly rates of DV, seeing where those rates increased in relation to a major sports event (Boutillier et al., 2017; Brimicombe & Cafe, 2012; Kirby et al., 2014; Sachs & Chu, 2000). Three studies looked at DV incidents beyond the game day: with the longest being up to 5 days post-game (Gantz et al., 2006).

## 3.2 | Study results

There were seven key themes collectively across the studies in relation to an association between major sports events and incidences of DV. We present each in turn below.

### 3.2.1 | A major sports event is associated with an increase in DV incidence

Collectively, almost all the studies (no. = 10) in this review found that days on which a major sporting match is played, under specific conditions or just generally, correlate with a significant increase in DV reports/records of incidences (including all studies assessed as strong in quality: Card & Dahl, 2011; Dickson et al., 2016; Kirby et al., 2014; Trendl et al., 2021; White et al., 1992). Two exceptions stand out. While finding an increase in DV dispatches from Wednesday to Sunday during NFL weeks in comparison to non-NFL weeks, this finding was not statistically significant (Sachs & Chu, 2000). While the study reported by Holman et al. (2010) was assessed as weak in quality, they found a significant correlation for only two out of 12 cities analysed, with one of those being an inverse relationship. However, given the acknowledgement by the authors that there was often insufficient data to analyse, little strength can be placed on this finding.

There were two studies providing conditional results. Williams et al. (2013) found that there was a significant increase in DV on rival game days between league teams Celtic and Rangers, but not on days when the Scottish International team played. Trendl et al. (2021) only found a significant increase where alcohol was also reported.

### 3.2.2 | Contact sports and associated violence

One of the studies located in the USA supported the argument that contact sports are associated with DV, with NFL and Ice Hockey shown to be associated with an increase in DV incidences (Aduabato, 2016). White et al. (1992) also suggested that 'an inherently violent' (p. 160) sport, NFL, would be associated with assaults on women. This does not align with the evidence from the UK. Soccer is not considered a violent sport, being non-contact, and yet studies on soccer in the UK still show an association between a major sports event and increased reported DV incidences (Brimicombe & Cafe, 2012; Dickson et al., 2016; Kirby et al., 2014; Trendl et al., 2021; Williams et al., 2013). Furthermore, one strong

study in the UK compared soccer with rugby union, a fundamentally contact sport (Trendl et al., 2021), with soccer but not rugby showing a connection to increased reported DV incidences. Also, Boutillier et al. (2017) found that the emotional salience of a game was more important than whether the sport was a contact sport or not (with no statistically significant finding for UFC events and calls to policy/helpline).

### 3.2.3 | Rivals

The factor of key rivalries between competing teams was found by several of the included studies, all assessed as either moderate or strong, to be connected to increased DV (Boutillier et al., 2017; Card & Dahl, 2011; Dickson et al., 2016; Williams et al., 2013). Card and Dahl (2011) found that games against rivals that resulted in an unexpected loss had the greatest statistically significant association with an increase in DV reports (20%), compared to non-rival unexpected loss (8%), even if the game resulted in an unexpected win. Studies following traditional Scottish rival soccer matches, Celtic versus Rangers, showed increases in DV reporting (Dickson et al., 2016 reported a 36% increase; Williams et al., 2013 reported an increase with a significance of  $p < 0.001$  compared to control and  $p < 0.004$  compared to international games).

### 3.2.4 | Important and emotionally salient

Several studies, all assessed as moderate or strong, examined the impact of a match being deemed 'important' or 'emotionally salient' (play-offs, close to winning the league, losing) and found an association with an increase in DV reports (Boutillier et al., 2017; Card & Dahl, 2011; Dickson et al., 2016; Gantz et al., 2006). However, there was inconsistency between these studies. Card and Dahl (2011) found it was an unexpected loss that was significantly associated with an increase (10%) in DV reports, more so if the game was deemed important (play-off contention) (13%). Dickson et al. (2016) found that there was a significant increase in DV reports in relation to important matches played by Celtic and Rangers, particularly if wins were expected and there was a draw (37% and 24% respectively) and, in the case of Rangers, when the game was expected to be tight, and they lost (16%). Also, DV reporting increased where Celtic and Rangers were playing other teams in matches deemed both important *and* televised. As such, as Dickson et al. (2016) argue, in important games, it is disappointment in unexpected bad outcomes that is associated with increased reports of DV.

Meanwhile, Gantz et al. (2006) found the more the team was expected to lose, the higher the number of police DV dispatches on game day ( $p = 0.009$ ) and up to 3 days post-game. When games matter the most (when a few weeks remain and the team is in contention), there are significantly more police DV dispatches (Gantz et al., 2006). Furthermore, Gantz et al. (2006) found a significant association in relation to Super Bowl games, a similar finding to Sachs

and Chu (2000), with the latter also found play-off is weeks being associated with an increase in DV.

While Kirby et al. (2014) found that the relative risk of DV would significantly increase when England won or drew a game (relative risk [RR] = 1.256,  $p < 0.001$ ) during the soccer World Cup, this increase was greater when they lost (RR = 1.382,  $p < 0.01$ ) and particularly if it meant exiting the World Cup. Trendl et al. (2021) contradict this finding. They found that alcohol-related DV cases significantly increased only when England won, not when they lost or drew. Trendl et al. (2021) also report a re-analysis of Kirby et al. (2014) data, however, separating wins and draws, where Kirby et al. did not. In this re-analysis, Trendl et al. (2021) estimated that there was a 45%, 95% CI [28–64], increase on days England won, and a 39%, 95% CI [18–64], increase on days they lost. There was no effect as a result of a draw. This is supported by Brimicombe and Cafe (2012) who also found no effect following a draw. This raises the importance of categorising results, separating wins, losses and draws when analysing the data. White et al. (1992) showed a similar finding to Trendl et al. (2021) in that the only significant increase in admissions for women was on the day after Redskins win (the odds of a woman being admitted for the reason of a gunshot wound, stabbing or assault increased by 5.53 to 1 on the day after a win). White et al. (1992) also found no correlation between female admissions to hospitals during/after play-off matches.

### 3.2.5 | Frustrating or controversial games

Card and Dahl (2011) also found that unexpected losses following a frustrating game (high occurrence of 'sacks', penalty yards and turnovers) were more statistically significantly associated with an increase in DV reports (15%) compared to unexpected losses following a non-frustrating game (7%). However, Dickson et al. (2016) disagreed. They found that where the games were considered controversial (high number of fouls or bookings by the referee), there was no significant effect on DV reporting.

Ultimately, Card and Dahl (2011) found that types of games had a compounding impact on DV reports, with games where the team is in play-off contention and is either (1) playing a traditional rival or (2) the game was frustrating, an unexpected loss results in a 17% increase in reports, compared to a 13% increase for all play-off contention games. Similarly, Dickson et al. (2016) found that where games were particularly salient, match outcomes had a significant effect on DV reporting. As Card and Dahl (2011) argue, unexpected losses compound with situations where the games matter the most to fans.

### 3.2.6 | Timing of the sports event and reporting of DV

As expected, matches played at the weekend are associated with higher rates of DV (Kirby et al., 2014; Sachs & Chu, 2000). Kirby et al.

found that the relative risk of DV increased on Saturdays by 43.5% ( $p < 0.001$ ) and Sundays by 50.6% ( $p < 0.001$ ).

However, there appears some contention with regards to the time period when the association is most likely to occur. Card and Dahl (2011) found that the connection between an upset loss and a spike in DV reports was immediately after a game had finished and not during or several hours post-game completion. Although Gantz et al. (2006) found that while only game day was associated with DV increased generally, when taking the importance of intensity of the game into account, the police DV dispatches were higher up to 3 days post-game day. In the case of the Super Bowl, the association with increased DV dispatches was only for game day and the next day (Gantz et al., 2006).

In comparison, Kirby et al. (2014) found a significant increase in RR of DV on the day after the England game was played (RR = 1.107,  $p < 0.05$ ), as did Trendl et al. (2021) but only with alcohol-related DV cases. However, Trendl et al. (2021) argue that, based on their findings, the increases in DV were focused during and shortly after a game. Kirby et al. (2014) argue that 2 days of increased RR may be due to games being held in the late afternoon or evening, meaning that DV would potentially occur after they had completed during the early hours of the following morning. Similarly, White et al. (1992) found only the day after a team won was there a significant increase in women being admitted to a hospital for a gunshot wound, stabbing or assault.

### 3.2.7 | Alcohol as a contributing factor

There was not enough data to affirm consensus either way with regards to increased alcohol intake and sports event being connected with an increase in DV. Holman et al. (2010) argued that alcohol could not be considered to be associated with an increase in DV following a sports event. However, given this study was assessed as weak and the authors also acknowledged that the data were limited due to a lack of consistency in police reporting DV complaints, this finding lacks strength (Holman et al., 2010). Trendl et al. (2021) only found an association between game day and DV reports when alcohol was also recorded. They also found that alcohol-related DV was significantly higher with there being 41% more cases of male to female alcohol-related DV on England's national soccer team win days, and 17% more cases on the days that followed England games, as compared to non-tournament days. The strength of Trendl et al.'s study gives rise to the importance of analysing associations between sports events, alcohol and DV incidences.

## 4 | DISCUSSION

While an attempt has been made to synthesise these results, we found significant heterogeneity between the included studies. It is currently impossible to compare across studies given differences in data

sources, recording practices, sport types and locations, time periods across which data are analysed and variable quality of the studies.

The research on the connection between major sporting events and DV has some way to come, but it is clear that there are some similarities to the work that has been done around associations between major sports events, criminal behaviour and emergency department assault-related presentations (Block, 2021; Kalist & Lee, 2016). Despite such heterogeneity across our included studies, the results of this review suggest that it is not just a major sporting event that is associated with an increase in DV, but rather it may be the culture of a particular sport in a particular country, compounded by the potential significant rivalry between teams and how important, or emotionally salient, the game is.

It is clear that very limited research has been done globally, with the focus predominantly on North America and the United Kingdom and only across football (including American football and soccer formats) and ice hockey. There has been some assumption that contact sport promotes aggression and violence, influencing the behaviour of fans beyond the match itself (Aubato, 2016; Kerr, 2005; White et al., 1992). However, the variety across the studies included in this review suggests that it is not limited to contact-only sports which support studies regarding tennis and Formula 1 (Correia et al., 2018; Piquero et al., 2021). If that is the case, more research is required to determine other factors connecting a major sports event and increased incidence of DV, such as whether it is the culture of the sport and the socio-demographics of those watching. Irrational passions as they pertain to significant rivals might better explain the association between emotionally salient games such as those between Celtic versus Rangers in Scotland (Dickson et al., 2016; Williams et al., 2013).

The data used to measure DV incidences are predominantly reports made to/by the police, most of which are focused on city locations. There are significant issues with relying on police data, including inconsistent recording practices within and across police forces, under-reporting to police and the ability of police officers insufficiently trained to identify DV (Kebbell, 2019; Voce & Boxall, 2018). Geographical and cultural differences between countries and the structure of police services may also impede the ability to compare studies in the future. In the UK, regional data are used (rather than cities as is often the case in the USA), for example, in both Scottish studies, the Strathclyde region is used (which includes the city of Glasgow, chosen to examine the impact of the two biggest rival soccer teams in Scotland: Celtic and Rangers). The context of major sports events in different countries is key, whether countries can connect such sports events with their police data. In the USA and Canada, the focus is on large cities, whereas in the UK, the population is spread beyond cities so regions are more appropriate and how the police force, and therefore its data, is focused. This would differ depending on the country being analysed and how the delivery of major sports is set up in relation to police data.

Weekends (as typical match days) have higher rates of DV (Kirby et al., 2014; Sachs & Chu, 2000) which is similar to studies looking at increases during public holidays/weekends (Braaf & Gilbert, 2007). However, studies included in this review rarely looked beyond the

TABLE 3 Practice, policy and research implications

- More research is required that examines the association between major sports events and the incidence of DV, including:
  - Studies beyond North America and the UK
  - Studies examining a broader range of sports and competition levels
  - Association of alcohol
  - Impact of rivalry
  - Impact of emotional salience
- Improved data recording, consistency, and outcomes measures across studies to enable meta-analysis
- Qualitative studies to explore the experiences of victims and perpetrators
- Intervention development and testing that targets prevention and response to DV during and following a major sporting event
- Development of policy that takes into consideration the impact of a major sports event with regards to resource planning and event schedule.

match day, which may be explained by the reliance on police data. Given DV is under-reported to police, other avenues for determining DV incidences are required in future studies such as hospital admissions and calls to helplines that may better identify delays between a game, time of DV incident and actual reporting or seeking of help.

The impact of alcohol is not clear, given only two studies included DV reports linked with alcohol use and only one of these was assessed as strong in terms of quality. Alcohol is a risk factor for DV (Wilson et al., 2014) and has been connected to sports and violence (Sønderlund et al., 2014). But whether it is the driving force for DV post major sports event, one of the several factors (rivalries, emotional salient games and the irrational passion of fans) or not connected at all requires further investigation.

## 5 | LIMITATIONS

Due to the heterogeneity of the studies conducted thus far on the association between major sporting events and DV incidence, we were only able to undertake a descriptive synthesis of the results. Meta-analysis can only take place once there are sufficient studies and researchers begin to use the same data collection methods and outcome measures.

We may have missed relevant studies examining the connection between sports events and DV incidences due to limited inclusion of those studies reporting in English. As such this review cannot address issues of diversity between countries' cultures. Nor do the studies included in the review enable examination of the diversity of those attending sports events nor those reporting DV to the police or presenting at the hospital.

## 6 | CONCLUSION

While there appears to be a strong correlation between major sporting events and DV, why such a correlation exists and in what



contexts is still unknown and more research is needed to understand the relationship and how best to intervene to prevent this violence. Equally, we cannot make assumptions based on the data from North America and the UK to inform other contexts.

The implications for practice, policy and research are broad in scope (Table 3). Given the scarcity of studies beyond North America and the UK and the limited type of sports investigated, more studies are required across more sports and more countries. Furthermore, more studies looking at international and national competitions are required, particularly as to whether factors such as rivalry between competing teams, emotional salience and alcohol consumption are fundamental factors in the correlation between the sports event and DV.

Data sources beyond police records are required, and consistency in the use of data sources is needed between studies if meta-analysis is to be feasible. Additional sources of data may include hospital admissions, calls to helplines and population surveys, particularly where delays in reports of DV incidences can be identified. Further, qualitative reports of victims-survivors and perpetrators are needed to better understand the circumstances and experiences of both victims and perpetrators in relation to DV following a major sports event (Brooks-Hay & Lombard, 2018).

Intervention development that can target these events has so far been hampered by a lack of scholarship. Additional research into this area can support possible strategies such as the development of policies and interventions that are tailored to particular countries, and how a country's culture then influences the behaviour in respect of a particular sport. Recommendations for prevention activities include policy development that guides when major sporting events are scheduled (e.g. avoiding public holidays), appropriate timing and development of social marketing campaigns to coincide with particular sporting events (such as important upcoming games between major rivals) and joint resource planning across police, health and specialist services.

While there appears to be an association between major sports events and the increased incidence of DV, there is great scope for further research and associated policy and intervention development as a result.

#### AUTHOR CONTRIBUTIONS

All authors made substantial contributions to the conception and design of this study as well as the acquisition, analysis and interpretation of the data. All authors were involved in drafting the manuscript and revising it critically for important intellectual content. All authors gave final approval of the version to be published.

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#### CONFLICT OF INTEREST

We have no known conflict of interest to declare.

#### DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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#### REFERENCES

- Aduabato, B. (2016). The promise of violence: Televised, professional football games and domestic violence. *Journal of Sport & Social Issues*, 40(1), 22–37. <https://doi.org/10.1177/0193723515594209>
- Anderson, K., & vanEe, E. (2018). Mothers and children exposed to intimate partner violence: A review of treatment interventions. *International Journal of Environmental Research and Public Health*, 15(9), 1955.
- Australian Bureau of Statistics. (2013a). 4529.0 - Defining the data challenge for family, domestic and sexual violence, 2013. Australian Bureau of Statistics. <https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4529.0~2013~Main%20Features~Home%20page~1>
- Australian Bureau of Statistics. (2013b). 4529.0.00.002 - Bridging the data gaps for family, domestic and sexual violence, 2013. Australian Bureau of Statistics. <https://www.abs.gov.au/ausstats/abs@.nsf/mf/4529.0.00.002?OpenDocument>
- BBC. (2021, May 7). Jarryd Hayne: Ex-rugby league player jailed for 2018 sex assault. *BBC News*. <https://www.bbc.com/news/world-australia-57007736>
- Block, K. (2021). Professional sports and crime: Do professional hockey games increase city-level crime rates? *Crime & Delinquency*, 67(12), 2069–2087. <https://doi.org/10.1177/0011287211010491>
- Boutillier, S., Jadidzadeh, A., Esina, E., Wells, L., & Kneebone, R. (2017). The connection between professional sporting events, holidays and domestic violence in Calgary, Alberta. *The School of Public Policy Publications, SPP Research Papers*, 10, 1–27. <https://doi.org/10.11575/sppp.v10i0.42627>
- Braaf, R., & Gilbert, R. (2007). *Domestic violence incident peaks: Seasonal factors, calendar events and sporting matches*. Stakeholder Paper. Australian Domestic and Family Violence Clearinghouse.
- Brimicombe, A., & Cafe, R. (2012). Beware, win or lose: Domestic violence and the World Cup. *Significance*, 9(5), 32–35. <https://doi.org/10.1111/j.1740-9713.2012.00606.x>
- Brooks-Hay, O., & Lombard, N. (2018). 'Home game': Domestic abuse and football. *Journal of Gender-Based Violence*, 2(1), 93–108. <https://doi.org/10.1332/239868018X15155986580769>
- Card, D., & Dahl, G. B. (2011). Family violence and football: The effect of unexpected emotional cues on violent behavior. *The Quarterly Journal of Economics*, 126(1), 103–143. <https://doi.org/10.1093/qje/qjr001>
- Cheever, J., & Eisenberg, M. E. (2020). Team sports and sexual violence: Examining perpetration by and victimization of adolescent males and females. *Journal of Interpersonal Violence*, 37, NP400–NP422. <https://doi.org/10.1177/0886260520915549>
- Clark, D. (2017). Boys will be boys: Assessing attitudes of athletic officials on sexism and violence against women. *The International Journal of Sport and Society*, 8(1), 31–50. <https://doi.org/10.18848/2152-7857/CGP/v08i01/31-50>
- Corboz, J., Flood, M., & Dyson, S. (2016). Challenges of bystander intervention in male-dominated professional sport: Lessons from the Australian Football League. *Violence Against Women*, 22(3), 324–343. <https://doi.org/10.1177/1077801215602343>

- Correia, J. C., Brailard, O., Combescure, C., Gerstel, E., & Spechbach, H. (2018). Admission rates in emergency departments in Geneva during tennis broadcasting: A retrospective study. *BMC Emergency Medicine*, 18, Art 56. <https://doi.org/10.1186/s12873-018-0209-y>
- Dickson, A., Jennings, C., & Koop, G. (2016). Domestic violence and football in Glasgow: Are reference points relevant? *Oxford Bulletin of Economics and Statistics*, 78(1), 1–21. <https://doi.org/10.1111/obes.12105>
- Doerer, K. (2018, December 7). The NFL's problem with violence against women: A story of profit and apathy. *The Guardian*. <https://www.theguardian.com/sport/2018/dec/07/the-nfls-problem-with-violence-against-women-a-story-of-profit-and-apaty>
- Gagnon, N. (1996). Sport culture and violence against women: Between pleasure and barbarism. *World Leisure & Recreation*, 38(4), 28–30. <https://doi.org/10.1080/10261133.1996.9674040>
- Gantz, W., Wang, Z., & Bradley, S. D. (2006). Televised NFL Games, the family, and domestic violence. In J. Bryant & A. A. Raney (Eds.), *Handbook of sports and media* (pp. 396–414). L. Erlbaum Associates.
- Grant, M. J., & Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies. *Health Information and Libraries Journal*, 26(2), 91–108. <https://doi.org/10.1111/j.1471-1842.2009.00848.x>
- Henry, A. L., Kyle, S. D., Bhandari, S., Chisholm, A., Griffiths, C. E. M., & Bundy, C. (2016). Measurement, classification and evaluation of sleep disturbance in psoriasis: A systematic review. *PLoS One*, 11(6), e0157843. <https://doi.org/10.1371/journal.pone.0157843>
- Holman, M., Paraschak, V., Weir, P., & Moriarty, R. (2010). Representations of sport violence and spousal abuse. In L. K. Fuller (Ed.), *Sexual sports rhetoric: Historical and media contexts of violence* (pp. 31–44). Peter Lang Publishing.
- Hughes, H. E., Colon-Gonzalez, F. J., Fouillet, A., Elliot, A. J., Caserio-Schonemann, C., Hughes, T. C., Gallagher, N., Morbey, R. A., Smith, G. E., Thomas, D. R., & Lake, I. R. (2018). The influence of a major sporting event upon emergency department attendances; A retrospective cross-national European study. *PLoS One*, 13(6), e0198665. <https://doi.org/10.1371/journal.pone.0198665>
- Kalist, D. E., & Lee, D. Y. (2016). The National Football League: Does crime increase on game day? *Journal of Sports Economics*, 17(8), 863–882. <https://doi.org/10.1177/1527002514554953>
- Kebbell, M. (2019). Risk assessment for intimate partner violence: How can the police assess risk? *Psychology Crime and Law*, 25(8), 829–846. <https://doi.org/10.1080/1068316X.2019.1597087>
- Kerr, J. H. (2005). *Rethinking aggression and violence in sport*. Routledge.
- Kirby, S., Francis, B., & Flaherty, R. (2014). Can the FIFA World Cup football (soccer) tournament be associated with an increase in domestic abuse? *Journal of Research in Crime and Delinquency*, 51(3), 259–276. <https://doi.org/10.1177/0022427813494843>
- Kmet, L., Lee, R., & Cook, L. (2004). *Standard quality assessment criteria for evaluating primary research papers from a variety of fields*. Alberta Heritage Foundation for Medical Research.
- Koss, M. P., & Gaines, J. A. (1993). The prediction of sexual aggression by alcohol use, athletic participation, and fraternity affiliation. *Journal of Interpersonal Violence*, 8(1), 94–108. <https://doi.org/10.1177/088626093008001007>
- Lum On, M., Ayre, J., Webster, K., Gourley, M., & Moon, L. (2016). *Examination of the burden of disease of intimate partner violence against women in 2011: Final report* (ANROWS Horizons, 06/2016). Australia's National Research Organisation for Women's Safety (ANROWS).
- Messner, M. A. (1992). *Power at play: Sports and the problem of masculinity*. Beacon Press.
- Miller, P., McDonald, L., McKenzie, S., O'Brien, K., & Staiger, P. (2013). When the cats are away: The impact of sporting events on assault- and alcohol-related emergency department attendances. *Drug and Alcohol Review*, 32(1), 31–38. <https://doi.org/10.1111/j.1465-3362.2012.00481.x>
- O'Riordan, J. (2021, September 16). Sport's attitude to domestic violence is beyond depressing. *The Irish Times*. <https://www.irishtimes.com/sport/soccer/joanne-o-riordan-sport-s-attitude-to-domestic-violence-is-beyond-depressing-1.4674080>
- Ostrowsky, M. K. (2014). The social psychology of alcohol use and violent behavior among sports spectators. *Aggression and Violent Behavior*, 19(4), 303–310. <https://doi.org/10.1016/j.avb.2014.05.001>
- Our Watch. (2019). Men in focus: Unpacking masculinities and engaging men in the prevention of violence against women. *Our Watch*. <https://media-cdn.ourwatch.org.au/wp-content/uploads/sites/2/2019/11/06231949/Men-in-focus-Evidence-review.pdf>
- Our Watch, Australia's National Research Organisation for Women's Safety, & VicHealth. (2015). Change the story: A shared framework for the primary prevention of violence against women and their children in Australia. *Our Watch*. <https://www.ourwatch.org.au/change-the-story/>
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., ... Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, 372, n71. <https://doi.org/10.1136/bmj.n71>
- Parkinson, D. (2019). Investigating the increase in domestic violence post disaster: An Australian case study. *Journal of Interpersonal Violence*, 34(11), 2333–2362. <https://doi.org/10.1177/0886260517696876>
- Piquero, A. R., Piquero, N. L., & Riddell, J. R. (2021). Do (sex) crimes increase during the United States Formula 1 Grand Prix? *Journal of Experimental Criminology*, 17(1), 87–108. <https://doi.org/10.1007/s11292-019-09398-7>
- Quigg, Z., Hughes, K., & Bellis, M. A. (2013). Effects of the 2010 World Cup football tournament on emergency department assault attendances in England. *European Journal of Public Health*, 23(3), 383–385. <https://doi.org/10.1093/eurpub/cks098>
- Sabo, D., Gray, P. M., & Moore, L. A. (2000). Domestic violence and televised athletic events. "It's a man thing". In J. McKaY, M. Messner, & D. Sabo (Eds.), *Masculinities, gender relations and sport* (pp. 127–146). Sage Publications.
- Sabo, D., & Runfola, R. (1980). *Jock: Sports and male identity*. Prentice-Hall.
- Sachs, C. J., & Chu, L. D. (2000). The association between professional football games and domestic violence in Los Angeles County. *Journal of Interpersonal Violence*, 15(11), 1192–1201. <https://doi.org/10.1177/088626000015011006>
- Sardinha, L., Maheu-Giroux, M., Stöckl, H., Meyer, S. R., & García-Moreno, C. (2022). Global, regional, and national prevalence estimates of physical or sexual, or both, intimate partner violence against women in 2018. *Lancet*, 399(10327), 803–813. [https://doi.org/10.1016/S0140-6736\(21\)02664-7](https://doi.org/10.1016/S0140-6736(21)02664-7)
- Sivarajasingam, V., Moore, S., & Shepherd, J. P. (2005). Winning, losing, and violence. *Injury Prevention*, 11(2), 69–70. <https://doi.org/10.1136/ip.2004.008102>
- Smith, A. C. T., & Stewart, B. (2010). The special features of sport: A critical revisit. *Sport Management Review*, 13(1), 1–13. <https://doi.org/10.1016/j.smr.2009.07.002>
- Sønderlund, A. L., O'Brien, K., Kremer, P., Rowland, B., De Groot, F., Staiger, P., Zinkiewicz, L., & Miller, P. G. (2014). The association between sports participation, alcohol use and aggression and violence: A systematic review. *Journal of Science and Medicine in Sport*, 17(1), 2–7. <https://doi.org/10.1016/j.jsams.2013.03.011>
- Trendl, A., Stewart, N., & Mullett, T. L. (2021). The role of alcohol in the link between national football (soccer) tournaments and domestic abuse - Evidence from England. *Social Science & Medicine*, 268, 113457. <https://doi.org/10.1016/j.socscimed.2020.113457>
- Trevillion, K., Oram, S., Feder, G., & Howard, L. M. (2012). Experiences of domestic violence and mental disorders: A systematic review and



- meta-analysis. *PLoS One*, 7(12), e51740. <https://doi.org/10.1371/journal.pone.0051740>
- Veritas Health Innovation. (2021). *Covidence systematic review software*. [www.covidence.org](http://www.covidence.org)
- Voce, I., & Boxall, H. (2018). *Who reports domestic violence to police? a review of the evidence*. Australian Institute of Criminology.
- Vu, N. L., Jouriles, E. N., McDonald, R., & Rosenfield, D. (2016). Children's exposure to intimate partner violence: A meta-analysis of longitudinal associations with child adjustment problems. *Clinical Psychology Review*, 46, 25–33. <https://doi.org/10.1016/j.cpr.2016.04.003>
- White, G. F., Katz, J., & Scarborough, K. E. (1992). The impact of professional football games upon violent assaults on women. *Violence and Victims*, 7(2), 157–171. <https://doi.org/10.1891/0886-6708.7.2.157>
- Williams, D. J., Neville, F. G., House, K., & Donnelly, P. D. (2013). Association between Old Firm football matches and reported domestic (violence) incidents in Strathclyde, Scotland. *SAGE Open*, 3(3), 1–7. <https://doi.org/10.1177/2158244013504207>
- Wilson, I., Graham, K., & Taft, A. (2014). Alcohol interventions, alcohol policy and intimate partner violence: A systematic review. *BMC Public Health*, 14(1), 881. <https://doi.org/10.1186/1471-2458-14-881>
- World Health Organization. (2021a). *Violence against women prevalence estimates, 2018: Global, regional and national prevalence estimates for intimate partner violence against women and global and regional prevalence estimates for non-partner sexual violence against women*. World Health Organization. <https://www.who.int/publications/item/9789240022256>
- World Health Organization. (2021b). *Violence against women*. World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/violence-against-women>

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