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# Risk factors for intimate partner homicide in England and Wales

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**Abstract**

Intimate partner homicides are often situated within the context of domestic abuse, and although less prevalent than domestic abuse, there have been several multi-agency approaches to understanding the risk for these fatal crimes. Domestic Homicide Reviews (DHRs) were introduced in 2011 to provide information to help with assessing such risk. This paper aims to analyse DHRs in England and Wales to investigate/ determine risk factors for domestic homicide following intimate partner abuse. All publicly available DHRs published between July 2011 and November 2020 where the victim and perpetrator were or had been intimate partners ($N = 263$) were retrieved from Community Safety Partnership websites in England and Wales. A quantitative design was used to extract data from DHRs, and descriptive and inferential statistics were generated by SPSS 26. Findings identified risk factors relating to domestic abuse, including stalking, separation, and the victim being in a new relationship. Sociodemographic risk factors included higher levels of deprivation, lower income and higher barriers to housing and services. This highlights the role of both individual and sociodemographic factors in domestic homicides, and particularly the need for greater socioeconomic security for victims of domestic abuse. In conclusion, though much of the data is in line with previous research, our analysis highlights the pivotal role of regional poverty, with comfortable socioeconomic conditions offering protection against intimate partner homicides. This research suggests important directions for future research and makes a valuable contribution to a more in-depth understanding of the relationship between domestic abuse and intimate partner homicide.

**KEYWORDS**
deprivation, domestic abuse, domestic homicide, intimate partner homicide, risk factors, sociodemographic factors, stalking

## 1    |    INTRODUCTION

Domestic homicide occurs when a victim is killed by a current partner, ex-partner, relative or an inhabitant of their home at the time (Home Office, 2018), whilst intimate partner homicide (IPH) refers, more specifically, to the killing of a person by their current or former intimate partner (Kivisto, 2015; Swatt & He, 2006; Szalewski et al., 2019; Weizmann-Henelius et al., 2012). Domestic homicides are situated within the context of domestic abuse (Benbow et al., 2019), following a process of victimisation (Todd et al., 2020), with domestic

homicide conceptualised as the most severe outcome of domestic abuse (Garcia et al., 2007). Whilst domestic abuse was historically regarded as a private issue to be dealt with behind closed doors, it is now recognised as a serious crime with complex implications (Matias et al., 2020). Although considerably less prevalent than domestic abuse, the far-reaching and tragic effects of domestic homicide have resulted in it being recognised as a significant public health concern (Loinaz et al., 2017; Rai et al., 2020; Salari & Sillito, 2015). Thus far, multi-agency approaches to reviewing and extracting learning from domestic homicides have proven promising in offering ways to identify risk and other contextual factors for these fatal crimes, as well as examining interactions between those involved and a range of agencies and professionals (Chantler et al., 2019).

The introduction of Domestic Homicide Reviews (DHRs) in England and Wales in 2011 followed significant pressures on public services to reduce the number of deaths and provide further information to aid in assessing risk (Monckton-Smith, 2020). DHRs are carried out under Section 9 of the Domestic Violence, Crime and Victims Act (2004) and form a crucial part of the Government's strategy to end violence against women and girls (Home Office, 2016a). The main purpose of DHRs is to identify lessons to be learned from past tragedies, improve service responses to domestic abuse and prevent future homicides from taking place (Benbow et al., 2019; Chantler et al., 2019; Monckton-Smith, 2020). The process of carrying out a DHR involves obtaining written reports from agencies who were in contact with the perpetrator and/or the victim to identify the nature of contact, any assessments made in relation to domestic abuse, the support offered or referrals to other agencies (Chantler et al., 2019). This forms a chronology of events, providing evidence of patterns of risk and the ways in which it can escalate (Monckton-Smith, 2020). Another key aspect of conducting DHRs is consulting with family and friends of the perpetrator and victim, who may be privy to information not shared with professionals.

The Home Office conducted two swift analyses of DHRs in 2013 and 2016, producing recommendations about the need for increased training for healthcare professionals, improved risk assessment, improved responses to those with complex needs and better record keeping (Home Office, 2013, 2016b). The need for improved risk assessment was also noted by Neville and Sanders-McDonagh (2014) and Sharps-Jeffrey and Kelly (2016) in their analyses of DHRs in England, with Neville and Sanders-McDonagh (2014) also highlighting the importance of information sharing as a preventative measure for domestic homicide. Chantler et al. (2019) analysed 141 DHRs in England and Wales using a mixed methods approach. Their findings highlighted the importance of perpetrator mental health, as 49% of perpetrators in their analyses were found to have had a mental health diagnosis. This raises questions about opportunities for intervention within mental health settings for perpetrators specifically. Benbow et al. (2019) analysed DHRs whereby the victim and/or perpetrator were above the age of 60, finding that major mental illness of the perpetrator, drug and/or alcohol abuse, financial issues and a history of domestic abuse were all key themes. It is important to recognise that domestic homicide occurs across the life course, with the mean victim age in Chantler et al. (2019) being 45 years.

**What is known**

- Domestic homicide reviews are available to help in assessing risk
- Perpetrator mental health is a key factor in domestic homicides
- Stalking features in the majority of domestic homicide cases

**What this adds**

- Draws upon the largest sample of DHRs used in research to date
- Deepens our understanding of the relationship between domestic abuse and intimate partner homicide
- Informs future research and support services

Previous research has demonstrated that perpetrators of IPH are more likely to be of older age (Loinaz et al., 2017; Caman et al., 2017) have less persistent criminal histories, be less socially disadvantaged (Loinaz et al., 2017; Caman et al., 2017) and show higher levels of suicidal ideation (Caman et al., 2017; Cunha & Gonçalves, 2019) than perpetrators of other types of homicide. DHR research has also indicated that stalking behaviours, often involving the use of technology and cyberstalking, are present in the majority of domestic homicide cases. Monckton-Smith et al. (2017) used media reports and DHRs to identify risk and found that stalking behaviours were present in 94% of cases analysed. Todd et al. (2020) argued that technology and social media play a facilitating role in many domestic homicide cases and that the digital footprints of victims and perpetrators are often overlooked in police investigations and the overall DHR process.

More general research into domestic abuse and IPH, primarily outside of the UK, has found links between perpetrators and depression (Cheng & Jaffe, 2019), previous violence within intimate relationships (Campbell et al., 2007), the use of threats of death (Cunha & Gonçalves, 2019), having direct access to a gun (Campbell et al., 2003; Spencer & Stith, 2020). Research has also found that victims of IPH have often recently left their abusive partner at their time of death (Brady & Hayes, 2018; Campbell et al., 2003). Stalking has been identified by a number of researchers as a risk factor for IPH (Campbell et al., 2007; Matias et al., 2020; Rai et al., 2020; Spitzberg & Cupach, 2007), with both stalking and IPH having common predictors such as gender (Tjaden & Thoennes, 2000), domestic abuse (Brady & Hayes, 2018), and relationship status (Logan et al., 2008). Despite this, there is a paucity of research that investigates risk factors for IPH precipitated by stalking (Rai et al., 2020), particularly in the UK.

Whilst this body of research has added significantly to our understanding of domestic homicides, there are a number of challenges within this area of research. For example, much of the research studying DHRs has relied on descriptive analysis only (e.g. Chantler et al., 2019), whilst research comparing IPH perpetrators with perpetrators of other types of homicide often consists of relatively small sample sizes (e.g.

Cunha & Gonçalves, 2019). Further, research has often neglected that DHRs often contain vital information on the nature of the relationship between the victim and perpetrator, and the abuse within and following the relationship, and can help us to identify risk factors in this area. By investigating these risk factors using a full UK population of DHRs (the largest sample of DHRs used in research so far), this research aims to address these limitations, deepen our understanding of IPH, and inform future prevention strategies and support services for domestic abuse victims, survivors and perpetrators. Specifically, this research aims to identify risk factors for IPH, considering the forms of abuse experienced, demographic, and socioeconomic factors.

## 2 | METHODS

### 2.1 | Sample

All available DHRs from the 322 Community Safety Partnership websites in England and Wales were retrieved in November 2020. DHRs were screened for those involving past or present intimate partners as the victim and perpetrator, resulting in 263 DHRs published between July 2011 and November 2020. Characteristics of the victims and perpetrators of the homicides can be found in Table 1.

### 2.2 | Procedure

A data extraction tool was developed based on existing knowledge and research in the area, and refined with use. Data was extracted relating to victim and perpetrator characteristics, mental health, suicidality, relationship characteristics and history, types of abuse and harassment experienced, and characteristics of the homicide itself such as identified trigger events and the perpetrator's response to the homicide. Events leading up to the homicide, defined as in the previous 2 months, were also recorded. About 40% of the DHRs were extracted by two researchers independently, and any differences were discussed and resolved. In addition, data were also collated from publicly available government reports on population density and English Indices of Deprivation data (Ministry of Housing, Communities, & Local Government, 2019) for each of the local authority areas and regions of the UK. Data for local authorities was extracted, including the indices of multiple deprivation (IMD) rank and decile, the rank for each deprivation domain (Income, Employment, Education skills and training, Health & Disability, Crime, Living Environment, and Barriers to Housing & Services), and the percentage of neighbourhoods in each local authority which were classed as in the most deprived 10% nationally. Data was then coded and entered into SPSS 26 for analysis.

### 2.3 | Statistical methods

Descriptive statistics were carried out to identify frequencies and means across the variables. The presence of a variable was coded

TABLE 1 Victim and perpetrator sociodemographic characteristics

| Demographic | Perpetrator N (%) | Victim N (%) |
|---|---|---|
| Gender | | |
| Male | 231 (88) | 38 (14%) |
| Female | 32 (12) | 225 (86%) |
| Age | | |
| Range | 16–87 | 16–84 |
| Mean | 45 | 41 |
| Not reported | 81 | 48 |
| Ethnicity | | |
| White British | 84 (32%) | 91 (35%) |
| Eastern European | 14 (5%) | 16 (6%) |
| Asian/British Asian | 20 (7%) | 25 (10%) |
| Other | 31 (13%) | 21 (8%) |
| Not reported | 114 (43%) | 110 (41%) |
| Relationship status | | |
| Married | | 91 (35%) |
| Cohabiting | | 87 (33%) |
| Separated/Divorced | | 45 (18%) |
| Victim wanted Separation at time of homicide | | 60 (22%) |
| Dating | | 32 (12%) |
| Not reported | | 8 (3%) |
| Employment status | | |
| Employed | 66 (25%) | 102 (39%) |
| Unemployed | 68 (26%) | 45 (17%) |
| Retired | 18 (7%) | 21 (12%) |
| Student | 0 | 3 (1%) |
| Not reported | 111 (42%) | 92 (35%) |
| Substance misuse | | |
| Alcohol misuse | 76 (29%) | 57 (22%) |
| Drug misuse | 39 (15%) | 18 (7%) |
| None | 223 (85%) | 188 (71%) |
| Mental health | | |
| Depression & Anxiety | 27 (10%) | 26 (10%) |
| Suicidality | 18 (7%) | 20 (8%) |
| Psychotic Disorder | 8 (3%) | 0 |
| Paranoia | 5 (2%) | 0 |
| Dementia | 3 (1%) | 3 (1%) |
| PTSD | 4 (2%) | 1 (0.4%) |
| Mental Health Issue Not specified | 21 (8%) | 7 (3%) |
| None | 174 (66%) | 206 (78%) |

as 1, and the absence of it in the DHR coded as 0. The perpetrator and victim gender variables were coded as 1 for male and 2 for female. A binary logistic regression was conducted to identify predictors of domestic homicides precipitated by stalking and harassment.

Correlational tests were conducted to examine all the variables' bivariate relationships. Variables were selected for inclusion in the final multivariate analysis if they had a significance level of 0.05 or less at the bivariate level.

Using a series of regressions, we tested whether domestic abuse and IPH could be predicted based on region characteristics (deprivation rates, employment etc.). However, given that different UK regions have different areas and different populations, comparing absolute numbers of domestic abuse and IPH could be misleading. To remedy this, we transformed the frequencies of domestic abuse and IPH *per region* variables into domestic abuse and IPH *per population density* based on the UK Government statistics mentioned above.

Not all variables were reported for each homicide case, therefore the findings must be interpreted with a degree of caution.

## 3 | FINDINGS

### 3.1 | Victim and perpetrator demographics

The majority of perpetrators of IPH were male (88%, n = 231), with the majority of victims being female (86%, n = 225). The average age for IPH for both victims and perpetrators was in middle age (41 and 45 respectively). It was interesting to note that whilst only 18% (n = 45) were separated or divorced, separation was imminent in an additional 22% (n = 60) of cases. Substance misuse and mental health issues were both common features within DHRs, with 44% (n = 115) of perpetrators having substance misuse problems, 34% (n = 86) having mental health issues and 17% (n = 44) having these concurrently. In comparison, 29% (n = 75) of victims had substance misuse problems and 22% (n = 57) had mental health issues, with 10% (n = 27) having both. Full sociodemographics for victims and perpetrators can be found in Table 1. However, not all variables were reported in all cases, and this is recorded for reference in Table 1.

### 3.2 | Perpetrator characteristics

28% (n = 73) had a known history of domestic abuse in previous relationships, and 23% (n = 59) had a history of other violent offences. About 40% (n = 106) had some contact with the criminal justice system before the homicide occurred. 3% (n = 7) were victims of domestic abuse from the deceased.

### 3.3 | Victim characteristics

The majority of victims had no known history of being in previous abusive relationships (n = 228, 87%). 9% (n = 24) were pregnant at the time of the homicide or had been pregnant in the previous 18 months. 27% (n = 70) had left the relationship, or tried to leave, in the past. At the time of the homicide, victims had been in the

**TABLE 2** Forms of intimate partner abuse experienced by victims of intimate partner homicide

| Type of abuse | N | % |
|---|---|---|
| Coercive control | 135 | 51 |
| Psychological abuse | 131 | 50 |
| Physical abuse | 135 | 51 |
| Strangulation | 30 | 11 |
| Injuries | 91 | 35 |
| Sexual coercion and rape | 19 | 7 |
| Financial abuse | 37 | 14 |
| Threats | 75 | 29 |
| Threats relating to children | 28 | 11 |
| Attempts to isolate victim | 46 | 18 |
| Use or threats of weapons | 42 | 16 |
| Damaged property/possessions | 47 | 18 |
| Use of digital media | 42 | 16 |
| Threats of suicide/self harm | 33 | 13 |

relationship for a mean of 12 years (range 2 weeks–60 years). 35% (n = 93) had children under 18 years old, with an additional 27% (n = 70) having adult children. In 42 cases (16%) children were present at the homicide, and in 5% of cases (n = 14), those children were harmed or killed when the homicide occurred.

### 3.4 | Forms of intimate partner abuse

Table 2 shows the forms of abuse experienced in the relationship prior to IPH. The most commonly experienced forms of abuse were coercive control (n = 135, 51%), physical abuse (n = 135, 51%) and psychological abuse (n = 131, 50%).

### 3.5 | Previous 2 months before homicide

40% (n = 105) of victims had separated from their partner or were about to, with 24% (n = 64) experiencing stalking and harassment from the perpetrator. 11% (n = 30) of victims had begun a new intimate relationship. 25% of victims (n = 65) feared for their safety and 13% (n = 34) were actively help seeking at the time of the homicide.

About 11% (n = 30) of perpetrators had contact with the criminal justice system, with 7% (n = 19) having recorded violations of court orders, 14% of perpetrators had harmed or threatened to harm others, and 12% (n = 32) had threatened suicide or were demonstrating suicidal thoughts.

In 76% of cases (n = 200), services were involved with the victim and/or perpetrator at the time of the homicide. Most common were primary care services and the police.

In 46% of cases (n = 91), at least one of the services was aware of domestic abuse in the relationship. In 28% of cases (n = 73), family or friends of the victim were aware of the abuse. In 51 of the cases,

a risk assessment was carried out for the victim, with the majority being classed as medium risk (*n* = 20, 39%), 13 (25%) as high risk, and 11 (22%) as standard. The classification of risk was not reported for 7 cases (14%). 24 of these cases (47%) were referred to Multi-Agency Risk Assessment Conferences (MARAC).

## 3.6 | Homicide event

Where the victim and perpetrator had separated, the time between separation to homicide ranged between immediately–8 years. The mean time between separation and homicide was 2 months.

For the majority of homicides (*n* = 163, 62%) a trigger event could not be identified by the DHR. Where a trigger event was identified, separation was the most common trigger, followed by the victim being in a new relationship.

In the majority of cases, a weapon was used by the perpetrator (*n* = 166, 85%). The most common method of homicide was stabbing (*n* = 120, 46%), strangulation (*n* = 29, 11%), or blunt trauma (*n* = 18, 7%). 55 methods of homicide were unknown (21%).

Perpetrators had a diverse range of responses to the homicide. The majority called the police or an ambulance (*n* = 45, 17%), died by suicide (*n* = 30, 11%) or remained at the scene (*n* = 27, 10%). Only 8% (*n* = 21) attempted to hide the crime.

## 3.7 | Inferential statistics

### 3.7.1 | Stalking

Stalking has been identified as a risk factor for IPH (e.g. Matias et al., 2020); however, there is a dearth of research that investigates risk factors for IPH precipitated by stalking specifically (Rai et al., 2020). As reported above, 24% of our sample experienced stalking and harassment prior to the homicide. Therefore, we wanted to determine if there were any unique predictors of those IPHs in our sample which were precipitated by stalking by conducting a binary logistic regression. The full model containing all the variables was significant, $\chi^2$(6, *n* = 169) = 101.41, *p* < 0.0001, with the model correctly classifying 86% of cases. Four of the variables made a unique statistically significant contribution to the model (coercive control, separation, the victim being in a new relationship, and help seeking by the victim in the months prior to the homicide). Separation or pending separation made the largest contribution to explaining homicide following stalking, followed by the victim engaging in help-seeking behaviours in the months prior to the homicide.

### 3.7.2 | Societal influences

Using a series of regressions, we tested whether domestic abuse and IPH could be predicted based on regional characteristics such as deprivation rates and employment.

We wanted to look at IPH and domestic abuse from a wider societal level, so we looked at IPH and domestic abuse alongside the density of each in the population. Table 3 shows the correlation matrix for these outcomes against potential societal level predictors including the index of multiple deprivation ranks for each local authority, and the associated deprivation ranks related to employment, income, education, health and disability, crime, living environment and barriers to housing.

We then used a series of regression models to predict IPH, IPH/Density, Domestic abuse, and Domestic abuse/Density, using the correlation matrix to assess the assumption of linearity (i.e., predictors in each model were selected based on which variables correlated with the key outcome variables).

*Intimate partner homicide raw scores*
This analysis investigated predictors of the number of IPH cases in each region of England and Wales. A model including Domestic Abuse/Density, LSOA Proportion in the First Decile, Local Authority Rank, Employment Rank, Health Disability Rank, Living Environment Rank, Crime Rank, and Domestic Homicide's/Density was used to predict absolute IPH in each region (see Table 4). The overall model explained 40% of the variance in DHs (*F*[9, 102] = 9.27, *p* < 0.001). However, perhaps unhelpfully, the only significant predictors in the model were IPHs/Density and Domestic abuse/Density. Therefore, we removed these variables from the model and reran it, rendering the overall model non-significant (*p* = 0.21).

*Intimate partner homicide per population density*
We then investigated predictors of the rate of IPH per population density for each region. A model including Domestic Abuse/Density, Local Authority Rank, Employment Rank, Living Environment Rank, Crime Rank, Income Rank, and Barriers to Housing and Services was used to predict IPH/Density in each region. The overall model explained 30% of the variance in IPH/Density (*F*[6, 105] = 8.95, *p* < 0.001). Of these variables, as seen in Table 5, only Employment Rank and Living Environment Rank did not predict IPH/Density.

*Domestic abuse raw scores*
This analysis investigated predictors of the number of domestic abuse cases in each region. A model including IPH/Density, Population Density, IMD Rank, Living Environment Rank, and Barriers to Housing and Services Rank was used to predict absolute rates of domestic abuse in each region. The overall model explained 38% of the variance in domestic abuse (*F*[5, 106] = 14.70, *p* < 0.001). Of these variables, as seen in Table 6, only IMD Rank and Barriers to Housing and Services independently predicted DA.

*Domestic abuse per population density*
This analysis investigated predictors of the rate of domestic abuse per population density for each region. A model including IPH/Density, Population Density, Local Authority Rank, LSOA

**TABLE 3** Correlation matrix for IPH and domestic abuse against societal level predictors

Correlation matrix

| | DHs | DH/D | DA | DA/D | Pop | PopD | LAr | IMDr | LSOA1d | EMPr | EDr | HDr | Cr | LEr | BHSr | INr |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DHs | — | | | | | | | | | | | | | | | |
| DH/D | 0.251** | — | | | | | | | | | | | | | | |
| DA | 0.016 | -0.268** | — | | | | | | | | | | | | | |
| DA/D | -0.198* | 0.871*** | -0.124 | — | | | | | | | | | | | | |
| Pop | 0.348*** | -0.210* | 0.065 | -0.392*** | — | | | | | | | | | | | |
| PopD | 0.172 | -0.896*** | 0.261** | -0.985*** | 0.385*** | — | | | | | | | | | | |
| LAr | -0.278** | 0.402*** | -0.032 | 0.531*** | -0.346*** | -0.524*** | — | | | | | | | | | |
| IMDr | 0.106 | -0.161 | 0.431*** | -0.160 | 0.006 | 0.204* | -0.116 | — | | | | | | | | |
| LSOA1d | -0.338*** | 0.164 | 0.125 | 0.310*** | -0.322*** | -0.278** | 0.804*** | -0.012 | — | | | | | | | |
| EMPr | -0.243** | 0.276** | 0.101 | 0.385*** | -0.256** | -0.360*** | 0.933*** | -0.034 | 0.873*** | — | | | | | | |
| EDr | -0.186 | 0.034 | 0.067 | 0.087 | -0.106 | -0.082 | 0.762*** | -0.028 | 0.763*** | 0.831*** | — | | | | | |
| HDr | -0.276** | 0.172 | 0.144 | 0.297** | -0.245** | -0.267** | 0.869*** | -0.001 | 0.900*** | 0.938*** | 0.828*** | — | | | | |
| Cr | -0.276** | 0.520*** | -0.185 | 0.632*** | -0.401*** | -0.638*** | 0.842*** | -0.096 | 0.686*** | 0.722*** | 0.565*** | 0.696*** | — | | | |
| LEr | -0.187* | 0.502*** | -0.290** | 0.568*** | -0.430*** | -0.616*** | 0.619*** | -0.175 | 0.348*** | 0.440*** | 0.224* | 0.352*** | 0.557*** | — | | |
| BHSr | -0.010 | 0.428*** | -0.501*** | 0.384*** | -0.208* | -0.459*** | 0.140 | -0.425*** | -0.201* | -0.085 | -0.101 | -0.197 | 0.187* | 0.473*** | — | |
| INr | -0.246** | 0.470*** | -0.041 | 0.587*** | -0.350*** | -0.581*** | 0.983*** | -0.127 | 0.772*** | 0.929*** | 0.724*** | 0.834*** | 0.828*** | 0.599*** | 0.166 | — |

Abbreviations: DHs, Domestic Homicide Raw Scores; DH/D, Domestic Homicide Raw Scores; DA, Domestic Abuse Raw Scores; DA/D, Domestic Abuse per Population Density; Pop, Population of the Region; PopD, Population Density; LAr, Local Authority Rank; IMDr, Index of Multiple Deprivation Rank; LSOA1d, LSOA proportion of the population in the first decile; EMPr, Employment Rank; EDr, Education Rank; HDr, Health and Disability Rank; Cr, Crime Rank; LEr, Living Environment Rank; BHSr, Barriers to Housing and Services Rank; INr, Income Rank.

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

**TABLE 4** Model coefficients—Intimate partner homicides

| Predictor | Estimate | SE | t | p | Stand. estimate |
|-----------|----------|-----|---|---|-----------------|
| Intercept | 2.48093 | 0.23800 | 10.4243 | <0.001 | |
| Domestic Abuse/Density | −0.00731 | 0.00113 | −6.4580 | <0.001 | −0.9350 |
| LSOA_proportion first decile | −0.00602 | 0.00388 | −1.5544 | 0.123 | −0.7139 |
| Local Authority rank | −0.01668 | 0.01041 | −1.6021 | 0.112 | −2.0241 |
| Employment rank | 0.01089 | 0.00862 | 1.2630 | 0.209 | 1.3076 |
| HealthDisability rank | −2.05e−4 | 0.00508 | −0.0404 | 0.968 | −0.0246 |
| LivingEnvironment rank | 9.96e−4 | 0.00189 | 0.5262 | 0.600 | 0.1199 |
| Crime rank | 0.00290 | 0.00360 | 0.8046 | 0.423 | 0.3513 |
| Income rank | 0.00677 | 0.01043 | 0.6494 | 0.518 | 0.8244 |
| IPH/Density | 291.18630 | 35.70055 | 8.1564 | <0.001 | 1.0257 |

**TABLE 5** Model coefficients—IPH/Density

| Predictor | Estimate | SE | t | p | Stand. estimate |
|-----------|----------|-----|---|---|-----------------|
| Intercept | 0.00287 | 8.31e−4 | 3.45 | <0.001 | |
| LocalAuthority_rank | −8.14e−5 | 3.54e−5 | −2.30 | 0.024 | −2.804 |
| Employment_rank | −2.98e−5 | 2.07e−5 | −1.44 | 0.153 | −1.015 |
| LivingEnvironment_rank | 1.03e−5 | 7.42e−6 | 1.39 | 0.167 | 0.353 |
| Income_rank | 9.30e−5 | 3.32e−5 | 2.80 | 0.006 | 3.211 |
| Crime_rank | 3.17e−5 | 1.12e−5 | 2.84 | 0.005 | 1.091 |
| BarrierstoHousingandServices_rank | −1.20e−5 | 5.40e−6 | −2.22 | 0.029 | −0.411 |

**TABLE 6** Model coefficients—Domestic abuse total

| Predictor | Estimate | SE | t | p | Stand. estimate |
|-----------|----------|-----|---|---|-----------------|
| Intercept | 78,674.055 | 6291.221 | 12.505 | <0.001 | |
| Population_density | −0.456 | 0.496 | −0.919 | 0.360 | −0.0783 |
| DHs/Density | −328,842.070 | 249,737.150 | −1.317 | 0.191 | −0.1139 |
| IMD_rank | 0.722 | 0.275 | 2.630 | 0.010 | 0.2551 |
| LivingEnvironment_rank | 12.011 | 14.125 | 0.850 | 0.397 | 0.1421 |
| BarrierstoHousingandServices_rank | −45.910 | 14.867 | −3.088 | 0.003 | −0.5464 |

Proportion in the First Decile, Income Rank, Employment Rank, Health Disability Rank, Living Environment Rank, Crime Rank, and Barriers to Housing and Services was used to predict Domestic abuse/Density in each region. The overall model explained 73% of the variance in IPH/Density ($F[10, 101] = 31.00$, $p < 0.001$). Of these variables, as seen in Table 7, only Income Rank, Crime Rank, and IPH/Density were independent predictors of Domestic abuse/Density.

Given that IPH/Density rates are more difficult to obtain than the outcome itself, we removed this predictor from the model. The resultant model explained 51% of the variance in Domestic abuse/Density ($F[9, 102] = 14.00$, $p < 0.001$), revealing several significant predictors including Population Density, Local Authority Rank,

Income Rank, Crime Rank, and Barriers to Housing & Services Rank (Table 8).

## 4 | DISCUSSION

The analysis of DHRs provides a unique opportunity to examine risk factors associated with IPH following domestic abuse in England and Wales, as well as offering the potential to share this learning on a much wider scale in the hope of informing policy and practice.

Our findings are in line with previous research on domestic abuse in terms of its gendered nature (e.g., Bostock et al., 2009; Brandl, 2000; Moss & Singh, 2015; Taub, 2020), as most victims

**TABLE 7** Model coefficients—Domestic abuse/density

| Predictor | Estimate | SE | t | p | Stand. estimate |
|---|---|---|---|---|---|
| Intercept | 87.92355 | 29.55161 | 2.975 | 0.004 | |
| DHs/Density | 20,806.96445 | 2287.60479 | 9.096 | <0.001 | 0.5729 |
| Population_density | −0.00950 | 0.00585 | −1.623 | 0.108 | −0.1296 |
| LocalAuthority_rank | −1.56437 | 0.89587 | −1.746 | 0.084 | −1.4837 |
| LSOA_proportion_firstdecile | 0.20471 | 0.36579 | 0.560 | 0.577 | 0.1896 |
| Income_rank | 1.96114 | 0.92553 | 2.119 | 0.037 | 1.8654 |
| Employment_rank | −0.69346 | 0.80018 | −0.867 | 0.388 | −0.6508 |
| HealthDisability_rank | 0.10632 | 0.44389 | 0.240 | 0.811 | 0.0998 |
| LivingEnvironment_rank | −0.30686 | 0.17734 | −1.730 | 0.087 | −0.2887 |
| Crime_rank | 0.68408 | 0.30353 | 2.254 | 0.026 | 0.6487 |
| BarrierstoHousingandServices_rank | −0.16537 | 0.13234 | −1.250 | 0.214 | −0.1565 |

**TABLE 8** Model coefficients—Domestic abuse/density

| Predictor | Estimate | SE | t | p | Stand. estimate |
|---|---|---|---|---|---|
| Intercept | 196.8325 | 36.25991 | 5.4284 | <0.001 | |
| Population_density | −0.0229 | 0.00760 | −3.0109 | 0.003 | −0.3123 |
| LocalAuthority_rank | −3.2448 | 1.17652 | −2.7580 | 0.007 | −3.0775 |
| LSOA_proportion_firstdecile | 0.7445 | 0.48443 | 1.5368 | 0.127 | 0.6896 |
| Income_rank | 3.4801 | 1.22178 | 2.8484 | 0.005 | 3.3103 |
| Employment_rank | −1.0123 | 1.07290 | −0.9435 | 0.348 | −0.9500 |
| HealthDisability_rank | −0.0531 | 0.59528 | −0.0891 | 0.929 | −0.0498 |
| LivingEnvironment_rank | −0.2302 | 0.23775 | −0.9682 | 0.335 | −0.2166 |
| Crime_rank | 1.1442 | 0.40168 | 2.8484 | 0.005 | 1.0851 |
| BarrierstoHousingandServices_rank | −0.4022 | 0.17414 | −2.3098 | 0.023 | −0.3806 |

were female with no reported history of domestic abuse in their previous relationships. In line with previous findings from the UK and internationally (Caman et al., 2017; Chantler et al., 2019; Loinaz et al., 2017), we found that the average age for IPH for both victims and perpetrators was in middle age, supporting that domestic abuse occurs across the life course. Victims were found to have experienced coercive control, physical abuse and psychological abuse at the hands of their abusers, with almost half of all perpetrators having been in contact with the criminal justice system in some capacity prior to the IPH. A single event triggering the homicide was not identified in most cases; however, that does not mean one did not occur.

The largest predictors of homicide were found to be stalking, separation and the victim's entry into a new relationship. In terms of IPH per population density, lower Local Authority Rank, lower Income Rank, higher Crime Rank and higher Barriers to Housing and Services were found to be significant predictors of IPH. This is particularly interesting as some European research suggests that perpetrators of IPH tend to be less socially disadvantaged (e.g. Caman et al., 2017). This may reflect some significant differences in the socioeconomic profile of IPH cases in the UK compared to other countries, and this is an important point for future research to consider. With regards to

domestic abuse more generally, this was predicted by a higher Index of Multiple Deprivation (IMD) Rank and higher Barriers to Housing and Services. Domestic abuse per population density was predicted by higher Income Rank and lower Income Rank.

Overall, this research sheds new light on sociodemographic factors predicting domestic abuse and IPH in England and Wales. Although most political and (right-wing) media rhetoric emphasises the role of individual factors and personal responsibility, our analysis of the publicly available data highlights the pivotal role of regional poverty. Whilst critical criminology has associated crime with socioeconomic deprivation for a long time (e.g., DeKeseredy & Dragiewicz, 2007; Mooney, 2007), our contribution is the first to examine the different socioeconomic factors in terms of predicting IPH. In so doing, we add inferential insights to this area of research.

The implications stemming from our analysis highlights that the personal histories of victims and perpetrators appear to play only a peripheral role in IPH. Instead, the emergent picture reveals that comfortable socioeconomic conditions seem to offer the best protection against IPH, metaphorically suggesting that it is the lack of money rather than money itself that is the root of 'evil'. Thus, we also echo the previous calls for greater

socioeconomic security for domestic abuse victims (Tarr, 2006). This information could exist as a powerful learning tool and could inform training on the prevention of IPH for a wide range of services and practitioners.

Naturally, our study is not without its limitations, which should be kept in mind before attempts to inform policymakers are made. DHRs, for example, are not produced for research purposes, meaning that some information featured was reported in a vague manner so as to preserve confidentiality. Relatedly, the apparent absence of a key trigger event does not rule out the possibility that one could have been present and played a key role in the subsequent IPH. Although stalking and interpersonal violence are major risk factors for IPH, they are often underreported, leading to inaccurate estimates (Baum et al., 2009), echoing Todd et al.'s (2020) view that digital footprints of victims and perpetrators are often overlooked in police investigations and the overall DHR process, as stalking can often take place online. In addition to this, friends and family of victims and perpetrators may not wish to be involved in DHRs, which leads to further methodological limitations, as we know that loved ones are often privy to key information not shared with professionals. We found that DHR reports differed greatly in terms of their level of detail and precision, making it painstakingly difficult to extract relevant data for analyses. This inconsistency makes it far more difficult to predict occurrences of domestic abuse and IPH using statistical modelling. It is also worth noting that there have been additional DHRs during the study period which were not yet published by November 2020 or were withheld due to the sensitivity of the case (Bridger et al., 2017).

Apart from considering personality and individual differences, future research might consider variables that are more closely associated with more individual (rather than local) circumstances. Such research might attempt to map out the more complex relations between the variables, including the latent ones, in more nuanced structural equation modelling. Taking into account victims' sexual orientation (Seelau et al., 2003), culture (Tripp & Affi, 2004), race and ethnicity (Lipsky et al., 2006) could be just some of the other factors to consider. More precise recording of key characteristics within DHRs would also greatly enhance research and the development of risk assessment models. The shared collective experience and memory of the restrictive Covid-19 pandemic lockdowns and their catalysing impact on intimate partner abuse (Bloomberg, 2021) is likely to keep this avenue of research valid and important in the future.

In conclusion, the current paper presents the first study examining the detail in DHRs with both descriptive and inferential statistics so as to explore risk factors for IPH. We have explored the nature of the domestic abuse experienced prior to these homicides and the sociodemographic factors that increase risk. This paper contributes towards a more in-depth understanding of the relationship between domestic abuse and IPH and highlights key directions for future research.

## AUTHOR CONTRIBUTIONS

Substantial contributions to the conception or design of the work (JC); acquisition of the data (JC, SM, RR and VB); data extraction (JC, SM, RR and VB); statistical analyses (JC, SM and MP); interpretation of the data (all authors); drafting the work (JC, LS, SM, and MP); revising it critically for important intellectual content (all authors); final approval of the version to be published (all authors); agreement to be accountable for all aspects of the work (all authors). The corresponding author attests that all listed authors meet authorship criteria and that no others meeting the criteria have been omitted. JC acts as guarantor.

## DATA AVAILABILITY STATEMENT

Data are available from the corresponding author.

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