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The typology of parricide and the role of mental illness: Data-driven approach

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Abstract

Parricide is a rare type of homicide in which mental illness is often an important factor. The aims of this study were (a) to describe the characteristics of parricide offenders with a focus on mental illness and clinical care and (b) to examine Heide's widely used typology of parricide through a data-driven approach. We analyzed all homicides in England and Wales between 1997 and 2014. Parricide offenders in our sample were most often male, unmarried, and unemployed, with a third of offenders diagnosed with schizophrenia; 28% had been in contact with mental health services before the offense. The latent class analysis resulted in three types of parricide offenders: middle-aged with affective disorder, previously abused, and seriously mentally Ill, which confirmed, to an extent, Heide's typology. Health and social care services should actively engage with carers of people with mental illness and support to those caring for older relatives and victims of abuse.

KEYWORDS

latent class analysis, mental health services, mental illness, parricide, typology

1 | INTRODUCTION

Parricide is defined as the killing of a parent by their child (Hillbrand, Alexandre, Young, & Spitz, 1999). Parricide accounts for 2–4% of all homicides worldwide (Holt, 2017; Sahin et al., 2016). Previous studies have identified the characteristics of victims and offenders, as well as the circumstances of the offense. Biological parents are more often victims compared to step or adoptive parents, with more fathers being victims than mothers (Heide & Petee, 2007). Parricide offenders are usually male (83–87%), between 23 and 32 years of age (Fegadel & Heide, 2018). The most common method used in homicide is a blunt or sharp instrument (Fegadel & Heide, 2018). Offenders are more likely to be White, unmarried, unemployed, and living with their parents at the time of the offense (Baxter, Duggan, Larkin, Cordess, & Page, 2001; Bourget, Gagné, & Labelle, 2007). Compared to other homicide offenders, parricide offenders are less likely to have a lengthy history of offending and delinquency (Baxter et al., 2001).

A distinction if often drawn between adolescent and adult offenders, with the former more likely to have been abused by the parent, and the latter more likely to have a serious mental illness, most commonly schizophrenia (Dantas, Santos, Dias, Dinis-Oliveira, & Magalhães, 2014; Hillbrand et al., 1999). However, this distinction has been challenged recently, with recognition of significant overlaps in the characteristics of adolescent and adult offenders. Researchers have called for a developmental and intersectional approach to the study of parricide, namely, to appraise how different societal, familial, and clinical factors are associated with this offense (Holt & Shon, 2018).

Typologies play an important role in many social sciences, providing directions for both theoretical and practical work (Collier, LaPorte, & Seawright, 2012). Many studies have used and examined Heide's

typology of parricide offenders (Heide & Boots, 2007; Hubbell, Heide, & Khachatryan, 2019; Moen, 2017; Myers & Vo, 2012). Heide (2017) proposed four distinct types of homicide offenders: severely abused offenders (usually by the victim), severely mentally ill offenders, dangerously antisocial offenders, and the enraged parricide offender. Heide (2017) also points out that evidence of mental illness can be found in all types of parricide offenders (such as depression in severely abused and psychopathy in dangerously antisocial offenders), but that it can only be considered a direct reason for homicide in the severely mentally ill offender type. Indeed, international research has shown schizophrenia and delusional disorders to be the most common mental health diagnoses in parricide offenders followed by adjustment disorder and personality disorder (antisocial and borderline; Adinkrah, 2017, 2018; De Borba-Telles et al., 2017; Lennings, 2003; Raymond, Léger, & Lachaux, 2015; Sahin et al., 2016). Even though often used, Heide's typology has not yet been, according to the authors' knowledge, examined using a data-driven bottom-up approach. This is probably due to the small samples of parricide offenders, as it is a relatively rare offense. This method would test whether the identified subgroups of offenders with common patterns of characteristics match the current existing typology.

A recent study by Holt (2017) presented the first national examination of parricide cases in England and Wales using data between 1977 and 2012. With a specific focus on the role that mental illness plays in parricide, the author concludes that one must be cautious about mental illness being an explanation for parricide (Holt, 2017). However, data analyzed in this study did not have a sufficient level of detail to explore the role of mental illness in depth; the proxy variable for mental illness was the notion of an "irrational act" with no analysis by diagnosis.

By utilizing the unique database held by the National Confidential Inquiry into Suicide and Safety in Mental Health (NCISH), this study aims: (a) to describe the characteristics of parricide offenders with a specific focus on mental illness and clinical care, (b) to examine Heide's typology using a data-driven approach.

2 | METHODS

2.1 | Research design

Data collection consisted of four stages. First, a consecutive case series of homicide convictions from January 1, 1997 to December 31, 2014 in England and Wales was obtained from the Home Office Statistics Unit of Home Office Science. The data included demographic characteristics of the victim and the offender, offense characteristics, and sentencing outcome. Second, data were provided by Greater Manchester Police on offenders' previous convictions, using the Police National Computer. Third, we obtained psychiatric court reports which have provided information on the circumstances leading to the homicide and the individual's mental state at the time of the offense. Fourth, we identified patients who were in contact with mental health service by writing to NHS Trusts in the offender's district of residence. If the offender had been in contact with mental health services within 12 months of the offense, psychiatrists were asked to complete a questionnaire with detailed information on the individual's care and treatment, clinical history, and details of the patient's last contact with mental health services before the homicide.

2.2 | Definitions

A parricide incident was recorded if the offender killed a biological step-parent or adoptive parent. There were no adoptive parent victims in our sample. We have included all parricide offenders convicted over an 18-year study period, both adolescents and adults. There were 10 cases where the offender took their own life after the homicide (homicide–suicide). These cases have not been included in the analysis as there were limited data available on the offenders.

2.3 | Statistical analysis

All analyses were undertaken using statistical software RStudio 3.4.3 (RStudio Team, 2016), namely poLCA package for latent class analysis (Linzer & Lewis, 2011). Descriptive analyses were undertaken on demographic, behavior, and clinical characteristics and are presented as proportions with 95% confidence intervals. If an item was not known for a case, the case was recorded as missing and removed from the analysis of that item; the denominator in all estimates is, therefore, the number of valid cases for each item. Exploratory latent class analysis and cross-class percentages comparisons with post hoc tests (likelihood-ratio χ^2 tests followed by pairwise Bonferroni corrected test for binary and Poisson regression for multinomial variables) were conducted. Missing data for latent class analysis were imputed through multiple imputations with fully conditional specification (van Buuren & Groothuis-Oudshoorn, 2011). Results with $p < .05$ were considered to be statistically significant.

2.4 | Latent class regression analysis

We have used latent class regression analysis as an exploratory approach to identify potential latent subgroups of parricide offenders. Latent class analysis is used for the analysis of categorical data (Linzer & Lewis, 2011). It assesses individual probabilities of a certain pattern of responses for every case, sorting the cases into mutually exclusive classes based on assessed probabilities (Mok et al., 2014). These classes reflect how the variables cluster among cases. Models with 1–10 classes were taken into consideration and compared using Bayesian information criterion (BIC), adjusted Bayesian information criterion (aBIC), consistent Akaike information criterion (cAIC), entropy, and likelihood ratio. For all these indicators, lower scores signify a better model fit.

2.5 | Ethical approval

Multicenter research ethical approval was obtained from the Northwest Research Ethics Committee on October 1, 1996. In the

interest of improving patient care, authorization was obtained under Section 251 of the NHS Act 2006 to enable access to confidential and identifiable information without informed consent. The study is registered under the Data Protection Act 1998.

3 | RESULTS

Nine thousand and nine people were convicted of homicide in England and Wales between 1997 and 2014. Three hundred and forty (4%) offenders killed a parent, an average of 18 incidents per year. There was a total of 359 victims. Twenty-one incidents involved more than one victim; 10 (3%) parricide offenders killed both parents. Of the 340 primary victims, 175 (51%) were fathers, 165 (49%) were mothers, 320 (94%) were biological parents, and 20 (6%) were stepparents.

3.1 | Characteristics of parricide offenders

The main characteristics of offenders are presented in Table 1. Offenders were mostly male, White, and unmarried with over two-third (168/240) living with their parents. Twenty-six parricides (8%) were committed by children/adolescents under the age of 18. Less than a quarter of parricide offenders had previously been in prison, a quarter had previous convictions for violence. More than half had been a victim of child abuse, but few had revenge for previous abuse as a motive.

Most parricide offenders (182, 85%) had an adverse life event in the month preceding the offense, which included problems with family members (125/210, 60%), workplace (65/183, 36%), finances (49/174, 28%), physical health (21/208, 10%), and accommodation problems (37, 18%).

3.2 | Prevalence of mental illness among parricide offenders

Psychiatric court reports were obtained on 270 (73%) parricide offenders. Two hundred and twenty-eight parricide offenders (67%) had been previously diagnosed with a mental disorder. Schizophrenia and other delusional disorders accounted for a third (112, 33%) of all parricide offenders' diagnoses. Of the parricide offenders with schizophrenia, 61 (54%) were patients who had been in contact with mental health services in the year before the offense. Other common diagnoses included affective disorder (30, 9%) and personality disorders (21, 6%). A primary diagnosis of substance dependence or misuse was diagnosed in 36 (11%) parricide offenders. Overall, 195/259 (75%) had previously misused alcohol or drugs.

In a quarter of cases, offenders had contact with mental health services in the year before the offense (94, 28%). More than a third of these patients had missed their last appointment with services (31, 35%) and a similar proportion has been nonadherent with medication (29, 34%). Three (3%) of the patients were in-patients at the time of homicide (either on agreed leave or off ward without staff agreement) and seven (8%) had been discharged from in-patient care within 3 months before the homicide.

TABLE 1 Demographic, behavioral, and offense characteristics of parricide offenders ($N = 340$)

	n (Total)	Valid %	(95% CI)
Sociodemographic characteristics			
Age: Median (range)	30 (14–69)		
Male	298 (340)	88	(83–91)
Black and minority ethnic group	55 (336)	16	(13–21)
Unemployed/long-term sick	157 (243)	65	(58–71)
Unmarried	223 (250)	89	(85–93)
Living alone	31 (240)	13	(9–18)
Living with parents	168 (240)	70	(64–76)
Homeless	10 (241)	4	(2–7)
Offender was a victim of child abuse	120 (213)	56	(77–91)
Victim had previously been threatened by offender	21 (180)	12	7–17
Behavioral characteristics			
History of alcohol misuse	142 (256)	55	(49–62)
History of drug misuse	157 (258)	61	(55–67)
Previous convictions for violence	88 (328)	27	(22–32)
Previously been in prison	40 (218)	18	(15–31)
Motivation for the homicide			
Mental illness	117 (198)	56	(49–63)
The offender was intoxicated at the time	91 (198)	48	(41–55)
The offender was provoked by the victim	63 (198)	32	(25–39)
Revenge for previous abuse towards them	23 (198)	11	(7–16)
Offense characteristics method of homicide			
Sharp instrument	162 (332)	49	(43–54)
Blunt instrument	56 (332)	17	(13–21)
Hitting and/or kicking	40 (332)	12	(9–16)
Strangulation/suffocation	29 (332)	9	(6–12)
Firearm	8 (332)	2	(1–5)
Attempted suicide after the offense	34 (218)	16	(11–21)
Court outcome and disposal			
Murder	114 (340)	34	(29–39)
Manslaughter	112 (340)	36	(31–41)
Manslaughter (diminished responsibility)	88 (340)	26	(21–31)
Unfit to plead/not guilty by reason of insanity	16 (340)	5	(3–8)
Disposed to prison	185 (340)	54	(49–60)
Disposed to hospital	128 (340)	38	(32–43)
Non-custodial sentence	27 (340)	8	(5–11)

Abbreviation: CI, confidence interval.

More than two-third of patients were diagnosed with schizophrenia and/or other delusional disorders (61, 69%), most of whom had comorbid alcohol or drug misuse (49, 80%).

3.3 | Latent class analysis

Results favor a three-class model solution (three types of parricide offenders) both in terms of numerical indicators of fit and in interpretability (*BIC* = 6,187.83, *aBIC* = 6,000.64, *cAIC* = 6,246.83, *likelihood ratio* = 1,628.18, and *entropy* = 0.869; Table 2). For the characteristics of models with five classes please refer to Table 2. Results of cross-class analysis for binary and multinomial variables and significant comparisons of probabilities are presented in Table 3.

3.4 | Class 1: Severely mentally ill (40% of the sample)

Parricide offenders in Class 1 had the highest probability to be in contact with mental health services in the year before the offense (48%) compared to any other class. Also, they were the most likely to be diagnosed with schizophrenia and other delusional disorders (97%) and to receive hospital order (83%). These offenders were most likely to have been unemployed compared to all other classes (77%). They were most likely to use a sharp instrument as method of homicide (71%).

3.5 | Class 2: Previously abused (42% of the sample)

Class 2 had the largest population share. Members of this class were most likely to receive prison disposal (91%). They were most likely to be abused as children (79%) and to kill their father or step-father (72%). Also, this class has had the highest number of offenders under the age of 25 (55%). Parricide offenders in this class were most likely to have a history of drug (21%) and alcohol (37%) dependence/misuse compared to other classes.

TABLE 2 Indicators of fit (log likelihood based) for models with five latent classes

	BIC	aBIC	cAIC	Likelihood ratio	Entropy
1 Class	6,495.45	6,435.17	6,514.45	2,172.45	–
2 Classes	6,238.45	6,114.72	6,277.45	1,797.13	0.862
3 Classes	6,187.83	6,000.64	6,246.83	1,628.18	0.869
4 Classes	6,234.50	5,983.86	6,313.50	1,556.53	0.832
5 Classes	6,306.45	5,992.35	6,405.45	1,510.15	0.838

Abbreviations: aBIC, adjusted Bayesian information criterion; BIC, Bayesian information criterion; cAIC, consistent Akaike information criterion.

3.6 | Class 3: Middle aged with affective disorder (18% of the sample)

Parricide offenders in this class were least likely to be male (73%), but most likely to be middle-aged (68%) and to use blunt instrument or strangulation or suffocation as their homicide method compared to the other two classes. They were most likely to have a diagnosis of affective disorder (69%). Finally, they were least likely to have previous offenses.

4 | DISCUSSION

This is the first large-scale study of parricide to include clinical data obtained from mental health services and psychiatric reports. In addition, to the authors' knowledge, this is the first study to use a data-driven approach to examine Heide's widely used typology of parricide offenders. Most offenders in our sample were male, White, unmarried, and unemployed, a finding that is consistent with previous research (Baxter et al., 2001; Bourget et al., 2007; Fegadel & Heide, 2018). Similarly to previous findings, most offenders used blunt or sharp instrument as a method of homicide (Holt, 2017). A high prevalence of schizophrenia among the offenders was also found (Raymond et al., 2015).

Latent class analysis of parricide offenders confirmed, to an extent, Heide's typology of parricide offenders. For example, Class 1 (severely mentally ill) corresponds to the severely mentally ill parricide offender in Heide's typology (Heide, 2012). Almost all parricide offenders in Class 1 were diagnosed with schizophrenia and other delusional disorders and almost half have been in contact with mental health services before the offense. Heide (2012) states that these offenders often experience long-lasting schizophrenia or schizoaffective disorder. She also states that the mental illness in this type of parricide offender has been known to family members and is the direct motivation for the killing of the parent (Heide, 2012, 2017). Heide (2012) also found that most offenders in this type are deemed not fit to stand trial and/or receive hospital disposal which is also consistent with our findings. In addition, parricide offenders in our severely mentally ill class were most likely to be unemployed compared to other classes, and two-third of the sample overall lived with their parents. This could imply that members of this class may have required support or have been dependent on their family for either financial reasons and/or care needs due to their mental illness. Previous studies have shown that the relationship between people with schizophrenia and their family members/carers at times can be "hostile-dependent" or described as a "conflict relationship" due to the patient's reliance on family members for support, economic assistance, and housing (Bourget et al., 2007).

A thorough assessment by a mental health professional is crucial in determining the typology of the parricide offender (Heide, 2012). In the case of Class 1, severely mentally ill, it is important to educate families and caregivers to be able to recognize early warning signs of deteriorating mental health, which could prevent a patient from reaching a crisis point. Consequently, it is important that family

TABLE 3 Class response percentages within variables

	C1	C2	C3	G	Significant post hoc comparisons
Class size	40%	42%	18%		
Male	94%	88%	73%	18.3**	C3 < C1 C3 < C2
Victim father	36%	72%	29%	45.4**	C2 > C1 C2 > C3
Unemployed	77%	53%	29%	48.9**	C1 > C3 C1 > C2 C2 > C1
Contact with MH services within a year before homicide	48%	10%	27%	36.5**	C1 > C2 C1 > C3 C3 > C2
Offender was abused as a child	45%	79%	43%	35.9**	C2 > C1 C2 > C3
Offender had previous offenses	49%	57%	35%	10.8**	C2 > C1 C2 > C3
Age group					
<25	23%	55%	11%	128.3**	<25
25–34	37%	25%	10%		C2 > C1
35–44	23%	14%	10%		C2 > C3
45–64	17%	6%	68%		45–64
>65	0%	<1%	0%		C3 > C1 C3 > C2
Method of homicide					
Sharp instrument	71%	58%	16%		Sharp
Blunt instrument	15%	16%	42%	97.1**	C1 > C2
Hitting and/or kicking	6%	21%	11%		C1 > C3
Strangulation/ suffocation	8%	4%	31%		Blunt C3 > C1 C3 > C2 Suffocation C3 > C1 C3 > C2
Verdict					
Prison	12%	91%	63%		Prison
Hospital order	83%	2%	24%	185.0**	C2 > C1
Non-custodial disposal	5%	7%	13%		C2 > C3 Hospital C1 > C2 C1 > C3 C3 > C2
Primary diagnosis					
Affective disorders	0%	9%	69%		Affective disorders
Schizophrenia and other delusional disorders	97%	7%	0%	410.8**	C3 > C1
Personality disorder	2%	26%	22%		C3 > C2
Alcohol misuse/ dependence	0%	37%	6%		Schizophrenia
Drug misuse/ dependence	1%	21%	3%		C1 > C2 C1 > C3 Alcohol C2 > C1 C2 > C3 Drug C2 > C1 C2 > C3

Note: C1—severely mentally ill, C2—abused adolescents, C3—middle-aged with affective disorder, and G—contingency χ^2 value.
Abbreviations: C1, Class 1; MH, mental health.
**$p < .01$.

members have adequate skills and ongoing support from professionals to enable them to provide appropriate levels of care and support to the patient. As part of the Care Programme Approach (Department of Health, 2008), carers' needs should form part of the initial assessment and be regularly reviewed. It is also important for there to be joint working and engagement with carers, with routine inquiry focusing on the relationship dynamics within the family. Lucksted, McFarlane, Downing, and Dixon (2012) recommended the so-called big three approach in helping families/caregivers of people with severe mental illness, namely directing the efforts towards (a) informing families about the nature of illness, (b) teaching skills to cope with and manage crisis, and (c) offering support from peer groups and mental health professionals.

Characteristics of offenders in Class 2 (previously abused) fit best with characteristics of offenders in Heide's (2012, 2017) severely abused parricide offender type. Heide reports that this type of parricide offender is most commonly found in adolescent offenders. In our sample overall, less than a 10th of offenders were adolescents. However, our findings for Class 2 previously abused show that offenders in this class were most likely to be young people, under 25 years of age compared to other classes. Offenders in this class were also more likely to have been abused as children and to kill a father or step-father compared to other classes. In her seminal book on parricide offenders, Heide (2012) claims that the mental illness most prevalent in this type of offender is posttraumatic stress disorder related to years of abuse by the parent or parents. This clinical finding was not observed in our sample; however, in Class 2, there was a higher probability of parricide offenders being diagnosed with

alcohol or drugs misuse/dependence which could correspond with offenders attempting to "numb their feelings" (Heide, 2012, p. 9). However, another possibility is that some of the characteristics of offenders in Class 2 also match Heide's typology of the enraged parricide offenders (Heide, 2017). Heide describes this type as being similar to the severely abused parricide offender, with the motivation for the actual act of parricide as the key difference between the two types. Where severely abused parricide offenders kill to end the ongoing abuse, enraged parricide offenders kill out of long-standing rage connected to previous abuse, triggered by an external event, sometimes facilitated by alcohol and drugs (Heide, 2017). Unfortunately, we were unable to examine these specific motivational drivers in our data.

In the case of Class 2, previously abused, similar to Heide's (2017) recommendation for severely abused and enraged parricide offenders, we would also emphasize the importance of processing trauma, developing healthy ways of coping, and addressing issues with substance abuse/dependence.

The remaining offender type in Heide's typology is the dangerously antisocial parricide offender, characterized by killing parents for self-centered reasons, (i.e., financial or other gain) and having previous criminal convictions and a history of criminal behavior. However, our remaining class, Class 3, does not fit this description. We found parricide offenders in Class 3 were mostly middle-aged men, with affective disorder. In this study, our data-driven analysis has captured a subtype of severely mentally ill parricide offender which Heide (2012) briefly mentioned. As over two-third of offenders in this Class 3 were aged 45–64, the victims were more likely to have been much older compared to the other groups. In Class 3, there is a reversal of caring responsibilities to those observed in Class 1. In this group, adult children are often required to take on the role of carers for their aging parents, which places mental and emotional strain on them (Heide, 2012, p. 14). This is reflected in a higher probability of offenders in this class with an affective disorder.

Meta-analysis has shown that caregivers of older parents fare worse than noncaregivers in terms of depression, stress, and subjective well-being (Pinquart & Sörensen, 2003). Psychotherapeutic interventions for carers and reduction of the amount of care they are providing for their aging parents are recommended interventions for reduction of stress-related and depressive symptoms in this population (Pinquart & Sörensen, 2003, 2011).

4.1 | Strengths and weaknesses

This study utilized the unique database held by the NCISH. The database includes clinical information obtained from both mental health services and psychiatric court reports. The strengths of this study lie in applying a sound statistical approach to the population data. However, the nature of this study (exploratory and uncontrolled) makes it impossible to draw any causal inferences. Consequently, caution is needed when interpreting the results. The limitations in using diagnosis from official documents as a proxy for measuring mental illness are described in detail elsewhere (Flynn, Gask, Appleby, & Shaw, 2016).

Even though parricides are rare and difficult to prevent, the characteristics of offenders in this study have been grouped into homogenous categories which can act as a benchmark against which other offenders can be compared. Typologies of this nature can help us to identify the differences in the characteristics of people who commit a similar type of homicide. Through this study, we have identified the need for both health and social care support for families and individuals who have caring responsibilities, both in looking after aging parents or adult children with mental illness. Alongside serious mental illness, treating unresolved childhood trauma, in all populations, but particularly those already in the criminal justice system is an important clinical priority.

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CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

AUTHOR CONTRIBUTIONS

All authors contributed to the study conception and design. Material preparation and analysis were performed by L. B. and S. F. The first draft of the manuscript was written by L. B. and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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