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**‘Frequency and Harm: An Exploratory Analysis of Missing Children’**

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## **Research Contract**

### **Title**

Frequency and Harm: An Exploratory Analysis of Missing Children

### **Research Question**

To what extent is prior and future trauma concentrated in a cohort of missing children in the North East Basic Command Unit (BCU), and what proportion of the cohort's Cambridge Crime Harm Index (CCHI) totals pertain to both victimisation and offending?

### **Sub Questions**

- How many individuals were reported missing, including on how many occasions, in the year 2014 in the London boroughs of Newham and Waltham Forest?
- At the point of the first missing episode in 2014, what are the risk factors associated with children under the care of a local authority?
- At the point of the first missing episode in 2014, what are the risk factors associated with children with a criminal record?
- At the point of the first missing episode in 2014, what are the risk factors associated with previous exposure to domestic abuse (DA) or child exploitation?
- Of all the children victimised before their 2014 index missing report, how many had suffered criminal victimisation, with CCHI score totals?
- How many of the children, after their initial 2014 report and up to 1,825 days thereafter, suffered criminal victimisation, with a CCHI score total?

- How many of the children, after their initial 2014 report and up to 1,825 days thereafter, were accused of committing a criminal offence, with a CCHI score total?

## **Data**

The study is a non-experimental descriptive analysis of 1,019 children reported missing to police in 2014 in the London boroughs of Newham and Waltham Forest. Police records relating to offending, safeguarding and victimisation linked to the missing children were also collated, covering from birth through a 1,825-day follow-up period. Collated data was overlaid with the CCHI to match crimes to the relevant harm scores. This enabled the creation of dichotomous independent variables against which to test in three distinct areas: pre-victimisation, post-victimisation and post-offending.

## **Research Design**

The study, based on an exploratory design, aims to gain insight into whether missing incident frequency or pre-victimisation correlates with future harm and identify which variables are significantly associated with harm suffered.

## **Methods**

The total number of children exhibiting each of the different variables was collated for each of the outcomes measured within the study. Chi-square tests were employed to evaluate any differences between actual and expected distributions, and effect size tests were analysed to assess the significance of any differences observed. Odds ratios were generated to apply a standard method for cross-variable comparison to determine which variables were more strongly linked to adverse outcomes. The calculation of false positive rates aided in the

interpretation of the data by indicating the extent to which results could lead to inaccurate forecasting.

## **Findings**

The results reveal several key themes. First, there is a strong concentration of missing events. Second, a clear relationship exists between pre-victimisation and incident frequency. Third, there is a significant relationship between incident frequency and future harm. Finally, critical gender differences exist in victimisation and offending. It was discovered that 78 children accounted for 1,601 missing incidents in 2014 – almost half of the total 3,325 incidents. Approximately one-quarter of all children reported missing had suffered some level of pre-victimisation. Vulnerability factors, such as exposure to child exploitation, DA, and being under the care of the local authority, are prevalent throughout. Demographic factors, such as age and ethnicity, have lower odds ratios than risk factors related to victimisation and criminality. In terms of gender differences, it was found that females are not only frequently victimised but suffer the greatest levels of harm both pre-missing and post-missing, with females aged 15–17 the most prevalent in both categories. Children aged 12–16 suffered the highest harm levels, with a significant drop noted in incidents relating to 17-year-olds. When considering offending behaviour post-missing, males are unequivocally the most prevalent in all categories, with those aged 15–17 causing the most harm. While some risk factors did have large odds ratios, the false positive rates suggested that missing incidents cannot be predicted accurately using variables in isolation.

## **Policy Implications**

There is an overwhelming amount of ill-defined data associated with each individual child and children in general, almost too much to digest and act upon. The extreme prevalence

of missing experiences offers a clear opportunity for routine, systemic intervention at a deliverable level, with a measurable impact on a critical group. This approach allows for a targeted focus within an area of significant complexity.

The identification of risk factors indicative of harm will help law enforcement and their partners prioritise children who require intervention strategies to reduce future harm, mitigate the level of incident frequency and address pre-existing trauma. Frequency of missing incidents is a significant indicator of both future harm and offending; however, the failure to use a crime harm index to score previous harm and correlate it with risk factors leads to extremely vulnerable children being overlooked and opportunities to safeguard being missed.

The study highlights the power of using variables to correlate frequency with future harm outcomes. For any future strategies to be effective, policymakers must be clear on the aims and objectives. As the research was focused on missing children in North East London, additional research is needed in other contexts to deepen our understanding of the relationship between frequency and harm. The development of any forecasting model will require false positive and false negative rates to find a middle ground that is acceptable to chief officers and allows for limited police resources to be directed to the areas that need it most.

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## **Chapter 1: Introduction**

Law enforcement's missing persons system is built around the mission of locating missing children now and in the future. However, it is less effective at understanding and preventing future harm. Children are amongst the most vulnerable individuals in our society, and some children who go missing suffer severe harm and trauma (Shalev-Greene & Alys, 2016). As Nelson Mandela (2002) said, 'History will judge us by the difference we make in the everyday lives of children.' Yet, over the last decade, the United Kingdom has witnessed a year-on-year increase in missing children, with the Metropolitan Police Service (MPS) consistently recording the largest volume of missing children. Protecting children from harm is not just a key policing priority but also a cornerstone of any modern civilisation. A report by His Majesty's Inspectorate of Constabulary and Fire and Rescue Services (HMICFRS, 2023) concluded that the MPS failed to identify and assess risk appropriately and respond adequately to reports of missing children. Following this report, the Mayor's Office for Policing and Crime (2023) directed the MPS to implement a strategic plan to keep children and young people safe, which will radically transform how policing in the capital responds to vulnerability and harm. To support the MPS in fulfilling this commitment, this evidence-based research has sought to identify whether the frequency and characteristics of missing events indicate future harm and therefore may represent a trigger for intervention.

The main focus of this research is to understand if the number of missing children episodes correlates with (not predicts) future harm and therefore should be a trigger for intervention. All children who go missing are potentially at risk of harm, with a significant number being particularly vulnerable due to their characteristics and circumstances. MPS systems are currently configured in a way that makes it difficult to determine why children go missing. As a result, these systems are unable to illustrate the various harms and risks children face (Police and Crime Committee, 2023). The reasons children go missing are often complex

and varied. Therefore, attempts to identify and protect those most in danger must be revolutionary and far-reaching. Thousands of children are reported missing to the police each year, the majority of which are found soon after being reported or return of their own volition. In 2022, the MPS recorded 9,370 missing children, with 90% of incidents resolved within 48 hours (MPS, 2023). However, it is important to acknowledge that the length of time a child is missing is irrelevant, as they can quickly fall prey to abusers, exposing them to various types of severe harm, including emotional abuse, criminal activity and sexual exploitation (HMIC, 2016). According to Shalev-Greene and Alys (2016), children who experience significant upheaval and uncertainty in their lives, such as domestic incidents, involvement with social care and poverty, are more likely to go missing. Conversely, it should be noted that not all children who go missing are at risk of harm and not every child who is at risk of exploitation is reported missing. Nevertheless, while there is no direct cause and effect relationship between the two factors, they are often intertwined. Many children who go missing have suffered abuse or neglect, experiencing significant trauma in their lives.

Responding to reports of missing children places high demands on police time and resources. While law enforcement has significant challenges in managing this demand, the repercussions of failing to investigate can be dire, leaving some children at continued risk of serious harm. These perceived failures can attract the attention of politicians and the public, undermining trust and confidence in the police and reducing the legitimacy of law enforcement (Tankabe, 2022). Ensuring that the police can achieve positive interventions requires specialised expertise and the ability to identify children at the greatest risk, all while collaborating with children's social care. Like many other forces, the MPS has embraced a multi-agency approach to missing children. Front-line officers have been trained to spot signs of exploitation when conducting return-to-home interviews, while officers attached to missing

person units have combined their expertise with that of social workers and healthcare professionals to work with children who frequently go missing.

The risk grading of missing children is a subjective process that involves an officer assessing the likelihood of harm to the child or the public. HMICFRS (2023) found that many officers responsible for risk grading showed a limited understanding of the connection between children who frequently go missing and the criminal and sexual exploitation they experience. Despite the information available to officers, the human process of assessing risk is prone to cognitive biases, which can influence decisions and affect outcomes (Kahneman, 2011). Risk grading for missing children is far from accurate. Furthermore, with the number of missing children increasing significantly, the priority is often to swiftly recover the child, after which the police move quickly to the next case without considering the harm the child has suffered or is likely to suffer. This approach risks overlooking the children who need the most protection, potentially leaving them vulnerable to future harm.

Previous research has examined the characteristics of children who have been reported missing and the harm they have experienced. However, a dearth of studies examining the probability of a child suffering harm before a missing incident underscores the significance of this research. Such studies could offer law enforcement and partners the opportunity to intervene and prevent harm from happening. To determine the factors connected to harmful outcomes, this study examines 1,019 missing children and their harm histories to establish an evidence-based framework for identifying children at the highest risk. The impact of adverse childhood experiences (ACEs) on a child's future health and well-being should not be underestimated. Central to evidence-based policing (EBP) is the concept of using the best available data to inform and guide policing decisions by focusing resources on victims, offenders and specific locations (Sherman, 2013). Furthermore, ACE-related evidence lends credence to the idea that harm encompasses more than just direct victimisation (Hughes et al.,

2017) and that it should not be exclusively measured by counting crimes (Sherman et al., 2016). Missing children are highly vulnerable to becoming either victims or offenders, as they are often coerced by gangs and organised crime groups to deal drugs, conceal weapons or take alcohol and drugs. They may also be sent into rival territories to commit serious assaults or steal high-value property (Barnardo's, 2023).

Some other constabularies and international law enforcement agencies use a ranking system based on the frequency of missing incidents to determine which children receive enhanced engagement (Catney, 2018; Huey, et al., 2020). However, some studies have found that only 4% of missing individuals suffered harm during the time they were reported missing, calling into question the value of rank grading (NCA, 2017; Talbot, 2018; Tarling & Burrows, 2004). In addition, rank grading based on frequency alone does not take into consideration previous occasions of harm or offending and is based solely on the assumption that more missing episodes equals more harm. The method of rank ordering based on frequency to identify those at greater risk of harm fails to consider that a child's vulnerability does not instantly decrease upon their return from a missing episode and ignores the long-term risks of harm.

Under the title 'Frequency and Harm: An Exploratory Analysis of Missing Children', this research seeks to build on previous studies exploring children who go missing to identify who suffers the greatest harm or causes the most harm and whether pre-existing police data can predict these events. In answering the key question, the research identifies risk factors associated with children reported missing in the London boroughs of Newham and Waltham Forest in 2014. Victim and offender-related research has demonstrated that a 'power few' can suffer or cause the greatest harm. Therefore, an evidence-based risk assessment tool could enable law enforcement to target the missing children who are either suffering or causing the most harm (Dudfield et al., 2017; Sherman, 2007). This research will therefore focus on

children reported missing either once or on multiple occasions and look forward 1,825 days from the initial missing report to establish how many became victims or offenders. The research will also examine the period from the child's birth to the first missing episode in 2014 to determine if they were victimised before the first missing incident, and will track the children for 1,825 days after the missing episodes to identify how many were exposed to domestic incidents or child exploitation subsequent to going missing. Victimisation and offending are defined as any criminal offence, assessed and quantified using the CCHI to determine the cumulative severity of the harm experienced.

Utilising this method offers additional benefits, as it draws risk indicators not only from the frequency of missing incidences but also from the risks associated with ACEs, enabling empirical testing for the first time. Variables such as being under the care of the local authority, being previously victimised, being convicted of a criminal offence or being exposed to domestic incidents can be measured using MPS data from safeguarding and crime recording systems. These records were used to identify 40 unique variables from n=3,325 incidents involving n=1,019 children. This not only facilitated the comparison of each child over a span of 1,825 days following their first missing episode in 2014 but also enabled the retrospective examination of their records back to birth to look for evidence of victimisation and trauma. The data were recorded in an Excel spreadsheet, allowing for the results to be calculated and presented using chi-square tests and odds ratios.

This research is presented in five sections. Chapter 2 provides a literature review delving into the phenomenon of missing children. It explores why the issue is significantly more complex than portrayed, highlighting the roles of economic and social constraints that not only allow the issue to persist in society but also enable it to escalate in plain sight. It also examines the overlaps between offenders and victims, the signs and symptoms of child trauma, and the experience of harm. The review also exposes gaps in the research, highlighting flaws

in the current approach to forecasting harm to missing children, which has served as the basis for this work, before offering actuarial methods based on a wider dataset as an alternative. Chapter 3, the methodology and data section, provides an explanation of the steps taken during this research, including the analytical techniques applied to answer the questions, then reports the findings of the research. Chapter 4 discusses the results, comparing them with existing research. It also reviews the limitations of this study and considers practical and policy implications that could improve our ability to protect children at risk of going missing. In the words of John F. Kennedy (1963), ‘Children are the world’s most valuable resource and its best hope for the future.’

## **Chapter 2: Literature Review**

The literature review has enabled the identification of subject matter experts in the field of missing children and is thus a key resource for consultation in this research. Consistent themes focusing on the prima facie questions have been identified throughout. This chapter will examine the literature in five key areas. These critical areas have been chosen to assist in understanding the complexities of the missing children phenomenon and to develop, enlighten and shape the research.

The review commences with an attempt to understand the scale of missing children and the ability of law enforcement to react to and recognise the risk. Second, it examines the socioeconomic characteristics of missing children and what emotional or physical factors cause them to go missing. Third, it explores the correlation between child criminal behaviour and victimisation. Fourth, it provides an overview of research relating to ACEs and child trauma treatment and how these areas have gained recent momentum within law enforcement. Finally, it considers the methods employed to predict and measure harm to children. The use of harm indexes and ‘big data’ to identify harm to both adult victims and offenders has been the subject of numerous studies; however, this does not appear to be the case for missing children.

This review will integrate critical analysis to identify the methodological limitations of existing research. Subsequently, it will delineate how this study seeks to target the identified gaps, advancing the understanding of missing children as indicators of vulnerability to victimisation or becoming involved in serious criminal behaviour.

### **The Scale of the Missing Children Problem**

The subject of missing children is well-documented, and the number of missing person reports has been steadily growing (Payne, 1995). Investigations into missing children can vary depending on the country, time frame and how ‘missing’ is defined. The term ‘missing children’



typically encompasses various categories, including children who have run away, been abducted or gone missing for other reasons. These categories can include both short-term disappearances and long-term cases. As a result, it is difficult to compare data between countries. Overall, millions of children worldwide are reported missing every year (ICMEC, 2023).

One of the earliest related studies, by Ayers and Bird (1932), examined 250,000 New York Police Department missing person reports over 15 years and found significant increases in the number of people being reported missing. They described an increasing trend of people being reported missing due to misconceptions on the part of the missing person and added that children seldom came to harm. Although the study is over 90 years old and relates to a different policing and social era, it offers the opportunity to compare and contrast recent literature with earlier observations.

The ongoing increase in reported missing cases is supported by a study in Australia, which identified that missing person investigations exceeded reports relating to robberies, sexual assaults and homicides combined. The study also reported that missing person cases have a profound economic and social impact on families, friends and the community (Henderson et al., 2000). In England and Wales, a report of a missing person is made every two minutes, with incidents involving children outnumbering those of adults (NCA, 2014). An estimated 3 million investigative hours are devoted to finding those people. At £400 million, missing person investigations are more resource-intensive than incidents of theft, assault and criminal damage combined (Shalev Greene & Pakes, 2013). High-profile missing children's cases can cost millions. One such example is Operation Grange, the investigation into the disappearance of Madeleine McCann, which has reportedly cost £13.1 million to date (Bulbul, 2023). Another, the search for Shannon Matthews, cost an estimated £3.2 million (Glendinning, 2008).

Missing children incidents present several significant difficulties, with the foremost being the overwhelming number of cases that law enforcement struggles to manage. In England and Wales, approximately 200,000 children are reported missing annually, with repeat disappearances accounting for 65% of cases (NCA, 2022). Similar patterns can be seen in Australia (Bricknell & Renshaw, 2016) and Canada (Government of Canada, 2022). Another major issue is the attitude of the police towards children who repeatedly go missing. A study of nine UK police forces described police treating missing children as a mere administrative task (Newiss, 1999).

Chowdry and Fitzsimons (2016) identified correlations between children going missing and their involvement in crime, estimating that subsequent interventions with trauma-led support to improve outcomes for those children cost £17 billion annually. This came to light after an all-party parliamentary group was commissioned following record numbers of children being reported missing from care in England. Those children were found to have been exploited and suffered trauma at the hands of criminal networks. This occurred after children had been subject to out-of-area placements, in which they were moved to new areas often hundreds of miles from their homes. Between 2015 and 2018, the number of children in care reported missing more than doubled, from 990 to 1,990. This compares with the 31% increase in children reported missing from care homes based within their local authority (The Children's Society, 2019).

Interestingly, a report on the scale of missing children by HMICFRS (2016) found datasets provided by UK law enforcement agencies were not reliable and did not provide a full understanding of the extent and nature of missing children. The data confirmed large numbers of children reported as missing; however, there were discrepancies between reports by the NCA, which recorded very few children showing signs of suffering harm, and The Children's Society, which indicated that 25% of children had suffered some kind of trauma while missing.

The demands, time and associated law enforcement costs were recognised as extremely high, but failure to act would put children at significant risk and undermine public trust and confidence. HMICFRS has called for a better understanding of the scale, with an emphasis on improving outcomes for missing children by identifying the appropriate support to meet the needs of children at the greatest risk of harm.

Although these studies provide significant insights into the scale of the missing children issue and the topic is regularly featured in political and mainstream conversations, academic research in this field remains in its infancy. Calls for further research have been emphasised (Hayden & Shalev Greene, 2018). The literature has uncovered several limitations, including estimations, short study periods, inadequate sample sizes, surveys with low response rates and issues with validity. This literature review will examine and discuss these shortcomings. Understanding the scale of the problem highlights the potential for effective intervention.

### **Characteristics of Missing Children**

A substantial portion of the literature concerning missing children examines the physical or emotional factors that motivated them to disappear. It considers social factors such as family background, living arrangements and substance abuse at the time of the missing episode with the notion that discovering the trigger will enable future incidents to be prevented. Recent studies have started to examine the physical attributes of children reported missing, such as age, gender and ethnicity. This is vital to furthering our understanding of missing children, paving the way for collaboration between law enforcement and partners to formulate a suitable response that identifies children at the greatest risk of harm and determines the most appropriate treatment to prevent long-term trauma. The following literature analyses police and partner data concerning missing children, providing an ideal backdrop to uncover the characteristics of missing children.

Biehal et al. (2003) examined (n=1,611) missing person reports over 12 months and identified that individuals aged 13–17 were reported missing at a higher rate than any other age group. The research found that children of Black and Asian heritage tended to go missing at a younger age compared to their white peers. A small survey sample return was unable to provide a sufficient rationale as to why this was the case. When examining the gender split for missing children, the balance was 72/28 in favour of females. These findings were echoed in other studies (Henderson & Henderson, 1998; Talbot, 2018). Vo (2015) discovered that 56% of those reported missing (n=5,984) in the Thames Valley Police jurisdiction were under 18 and concluded that the majority of them tended to be reported repeatedly. This resulted in the same individuals reappearing in the data, distorting the demographic results.

The next study examined missing children reports (n=1,885) from a rural constabulary over 24 months and discovered that 42% of children had gone missing on more than one occasion and that a small proportion of those who repeatedly went missing (15%) accounted for over half of all missing children episodes. Regression analysis further identified the age of the child, a history of family conflict and residing in care as common attributes of those repeatedly reported missing (Babuta & Sidebottom, 2018).

Research inspired by repeat victimisation and links to underlying vulnerabilities reviewed missing children incidents (n=3,355) from a metropolitan force over 12 months. The study compared children reported missing once, between two and nine occasions and those reported 10 times or more. It uncovered that 75% (n=2,516) of missing incidents involved children who had previously been reported as missing. A small cohort of 4% (n=59) accounted for almost one-third (28%) of all missing children incidents (n=952). In contrast to those reported once, those missing 10 or more times tended to be teenagers, residing in care and engaging in substance abuse (Sidebottom et al., 2019). However, the research referenced only one year's worth of data and indicated that future studies would benefit from a more

longitudinal dataset. An analysis of 12 months of data from police, health and social care (n=523) identified five factors that were predictive of being reported missing twice or more: residing in care, having a history of neglect and abuse, previous arrests, being a victim of child exploitation, and substance abuse (Hutchings et al., 2019). However, limitations related to internal validity were identified with this study due to issues with the reliability of data entry and missing data, which prevented the exploration of other variables.

A study that covered a five-year period in a metropolitan force area between 2014 and 2019 examined children reported missing (n=1,434) and the total number of episodes (n=4,922). It found that 39% of children were reported missing more than once, and those children accounted for 82% of all missing incidents. Logistic regression uncovered that children who were residing in care and from a white demographic were more likely to be reported missing on multiple occasions. It also identified that 57% of children reported missing more than once were reported missing for a second time within two months of the initial episode (Bezczky & Wilkins, 2022).

In 2022–2023, the MPS recorded n=9,370 missing children reports with 90% of instances resolved within 48 hours. Those aged 17 years accounted for the most missing episodes, followed by 16 and 15-year-olds, respectively. Out of all the reports, 68.3% involved children aged 15–17. In contrast, only 2.4% of reported missing episodes involved children under age 11. Although the split between boys and girls was relatively even, boys were more likely to be graded as high risk even though girls were at a greater risk of being victims of serious crime. Children who are reported missing multiple times are often victims of sexual exploitation and suffer severe levels of long-term trauma (MPS, 2023). However, it should be emphasised that younger children are increasingly being impacted, and in London, the average age of children reported missing is decreasing (MOPAC, 2023). While it is crucial to identify

which children go missing, it is also imperative to understand what happens to them while they are missing. Understanding the population is the basis for assessing predictive potential.

### **Child Criminal Behaviour and Victimisation**

A significant proportion of missing persons literature has examined what happens to children while missing. This may be partly because children by nature are more inherently vulnerable and susceptible to exploitation (Ferguson et al., 2023; Hirschel & Lab, 1988). According to Payne (1995), children who go missing run the risk of becoming involved in crime, experiencing social problems and being exploited. This is supported by studies examining the experiences and dangers faced by children while missing. Interviews with children upon their return have found that many had turned to petty crime or been sexually exploited in exchange for cash to survive (Biehal et al., 2003; Sidebottom et al., 2019; Stein et al., 1994). Routine activity theory involves an offender, a suitable victim and the absence of a capable guardian. All three elements must come together for crime to be realised (Felson & Cohen, 1979). Missing children can deliberately or unwittingly remove themselves from the presence of a capable guardian. Some children who go missing are not rational in their decision-making nor aware of the danger they are in, thus increasing their risk of being victimised or becoming offenders themselves (Wolff et al., 2015).

There is a convincing body of research demonstrating a strong connection between victimisation and offending behaviour (Talbot, 2018; Van Gelder, 2015). Shalev Greene (2011) used a chi-square test to investigate the correlation between missing person variables, such as residing in care and number of arrests, but the results were not statistically significant. Vo (2015) reached a different result, with children residing in care substantially more likely to be associated with high harm and tending to be the perpetrators rather than the victims. These findings are underpinned by a six-year study across 10 UK children's care homes, which

examined residents' criminal activities and found that these types of establishments breed criminal behaviour and could be described as criminogenic (Hayden & Gough, 2010).

Several systematic reviews have focused on the victim–offender overlap and discussed how situational and individual variables influence the relationships between victimisation and offending (Berg & Schreck, 2022; Jennings, 2016; Schreck et al., 2015). Research in the US involving 1,000 children identified three distinct types of child victim-offender characteristics: residing in care, neglect and bullying. Furthermore, children are more inclined to commit crimes or fall victim to crime when they possess specific personality traits and are exposed to harmful situations (Moore, 2013). In contrast, Cuevas et al. (2007) provided evidence of children who were predominantly victimised but did not become offenders as well as children who were principally offenders and had not been significantly victimised.

To reduce offending and subsequent harm, Sherman (2007) emphasised the importance of targeting resources towards the power few. This involves recognising those who fall into the victim-offender category and implementing preventative measures for evaluation. Evidence strongly suggests that missing children have a heightened risk of being involved in crime, although it is difficult to establish if this is due to coercion, exploitation or self-interest. According to The Children's Society (2021), one-third of missing children are recognised as being at significant risk of harm. Results from a survey established that one in 14 children who disappeared engaged in crimes such as begging, drug dealing and theft to survive (UK Gov, 2002). Shalev Greene (2011) established that repeat missing children were more likely to have a criminal history independent of the missing incident(s). A 12-month review of 51 children who had been reported missing more than twice revealed that 82% had at least one prior arrest, not necessarily while they were missing. Furthermore, 50% of those children had been arrested six or more times. These findings reflect missing children's experiences and reveal their emotional injury either as victims or perpetrators. It emphasises the necessity to focus resources

on providing customised trauma support for children who are linked to high levels of repeat missing incidents and identified as at risk of greater harm.

There is a gap in the research regarding the long-term physical and emotional impact on missing children. The purpose of this study is to address the gaps in knowledge by identifying the key characteristics of the power few missing children. Building on prior research, the study goes beyond viewing the current missing incident as the sole indicator of harm, exploring 1,825 days past the point when the missing report was filed in 2014. The study will utilise existing police data, concentrating on variables and characteristics that have not been previously examined but may serve as indicators of future harm. To enhance the external validity of the study, the research will adopt the same understanding of harm as Catney (2018) and Bitters (2021). It has been shown that missing children can be susceptible to high levels of harm through victimisation and offending and, as a result, may suffer from ACEs. Recent literature has acknowledged the impact of traumatic childhood events and drawn connections with poor health outcomes and an increase in dangerous behaviours. The complex causal relationships between offending, victimisation and going missing will have a strong bearing on predictive potential. The impact of these life-changing events will now be discussed.

### **Adverse Childhood Experiences**

ACEs are described as extremely traumatic and highly stressful events that occur during childhood or adolescence. These events can be a singular or prolonged threat to a child's safety. They may also include breaches of trust, security and bodily integrity (Young Minds, 2018). Bellis et al. (2015) surveyed 3,000 individuals and discovered that 47% had experienced at least one ACE, with 9% having suffered four or more. A further finding suggested a cyclical effect where those with higher ACE counts were more likely to expose their own children to ACEs. These events can have long-lasting repercussions and place children at higher risk of



harm. However, interventions can make a difference (Felitti et al., 1998; Munson & Odom, 1996).

Felitti et al., (1998) conducted some of the earliest research regarding ACEs and identified several categories, including physical, sexual and psychological abuse. The study looked closely at the ‘toxic trio’ – DA, substance abuse and mental health (Strang, 2022) – and revealed a strong relationship between the extent of abuse suffered during childhood and subsequent risk factors associated with leading causes of fatalities in later years. Since then, a substantial body of research has reinforced these findings and supported the creation of a scoring matrix to measure acute childhood stress and predict outcomes in adulthood (Bellis et al., 2015; Javier et al., 2019; Lloyd, 2018).

Links between missing children and residing in care have been well established within this literature review. Research by the National Institute for Health and Care Excellence (2021) found that neglect and abuse were the most common reasons for entering care. In England and Wales, there are currently more than 80,000 children residing in care, with approximately 45% diagnosed with a mental health disorder, compared to 10% for children overall. In such circumstances, ACE measurement is a useful gauge for identifying the impact of such a stressful environment and its connection to future health issues (Bellis et al., 2015). Houtepen et al. (2020) provided significant evidence for the negative impact of ACEs on children’s education outcomes. The study identified that children with four or more ACEs were extremely likely to skip school and suffer permanent exclusion. This was supported by McDowell (2017), who stated that children and adolescents who experience multiple ACEs are far less likely to complete homework or be interested in succeeding at school.

An increasing body of researchers are calling for the expansion of ACE measurements and advocating for its effectiveness in identifying harm (Cronholm et al., 2015; Frinkelhor et al., 2013; Hughes et al., 2017). Assmusen et al. (2020) cited additional risk factors, such as

peer pressure, social media content and modern-day exploitation, as having a greater impact on children's mental health than some conventional ACEs. Law enforcement has been accused of failing to examine prior incidents or utilise information from partner agencies to better comprehend a child's situation. Investigations frequently focus on the current circumstances rather than a more comprehensive understanding of the vulnerabilities or root causes involved (HMIC, 2015). However, a recent study examining a cohort of prolific robbery offenders in London identified that 63% had been previously reported missing, with 57% having suffered emotional and psychological neglect at the time of their arrest and 91% known to social care (Hilder et al., 2021).

Several UK police forces have trialled an ACE predictive modelling system to improve recording, intervention and support for children. The outcomes revealed that many of the children identified were already known to police and social care. The trial highlighted complexities in law enforcement's understanding of how to recognise harm and made three key recommendations: firstly, defining the role of UK policing in the delivery of interventions; secondly, emphasising the significance of multi-agency collaboration and data sharing; and thirdly, recognising that modelling police-only data may not provide significant opportunities (Chandan et al., 2020).

Many studies have drawn links between ACEs and serious criminal offending (Craig et al., 2017; Malvaso et al., 2018; Wolff et al., 2015). One strategic suggestion to deter future criminality is for law enforcement to engage with children and adolescent mental health services to implement and test cognitive behavioural treatment. Such treatments should be considered a shared approach to reduce high-harm offending, particularly among those identified as the power few (Hilder et al., 2021). A child trauma treatment pilot in Canada employed both cognitive behavioural therapy (CBT) and training for parents and carers.

Results showed improvements in behaviour, increased social contact and decreased carer depression (Copping et al., 2001).

Many children who go missing repeatedly suffer high levels of ACE, and the subsequent impact on their future cannot be underestimated (Bellis et al., 2015). Few of the reviewed studies provided recommendations for how law enforcement should engage with partners to focus on long-term trauma support for children. Most of the reviewed studies related to policing were focused on immediate risks rather than identifying future harm to children. This study hopes to fill the gap by formulating an appropriate response to both recognise and predict the children most vulnerable to harm while missing. Work on ACE offers a glimpse of predictive modelling without the focus on missing incidents. The next section examines how future harm could be predicted.

### **Prediction of Future Harm**

Characteristics, predictive factors and variables have been discussed throughout this literature review. These units are segments of information that form part of the missing person's background and are readily available to investigators. Like solvability factors, each attribute can be examined to identify its connection to an outcome and predict the likelihood of harm occurring during a missing event. Predictions utilising big data are increasingly being used to solve and mitigate crime incidents (Kumar & Nagpal, 2019). Utilising solvability factors to assist high-volume crime investigations has revealed distinct characteristics between detected and undetected cases (Coupe et al., 2019). Consequently, it may be possible to identify the differential characteristics between those who suffer significant harm while missing and those who do not. A study by Doyle and Barnes (2020) argued that the current process for assessing the risk of harm to missing children is not accurate, but predicting harm is a possibility.

Missing children fall into two categories, medium and high risk, based on their age-related vulnerabilities, yet most officers still make risk assessments based on professional judgement (Hayden & Goodship, 2013; Phoenix & Francis, 2022). Numerous studies have shown that when it comes to predicting future risk, statistical forecasting is more accurate than clinical opinion (Ægisdóttir et al., 2006; Babuta & Sidebottom, 2018; Kahneman, 2011; Kahneman & Klein, 2009). The MPS previously adopted a predictive approach to calculating missing children risk but abandoned it due to its low validity and high level of false negatives (Hedges, 2017). It should be noted that the approach was flawed from the start, as there was no pre-mortem and it was based on opinions rather than analytical evidence (Kahneman, 2011). Nonetheless, risk assessments of missing children and exposure to future risk continue to be based on clinical judgements rather than statistical forecasting techniques (College of Policing, 2016; NPCC, 2023).

When a child returns from a missing episode, a face-to-face interview is conducted to understand why they went missing and what happened. The accuracy of this data relies heavily on the police officer's engagement and the child's honesty in disclosing information (Sidebottom et al., 2019). We can conclude that children who repeatedly go missing are at a higher risk of being involved in crime and suffering trauma as a result (Rees, 2011). If this discovery is representative, the risk indicators should be incorporated into a framework to detect children at the greatest risk of harm.

This review has already highlighted conflicts in the data obtained upon a child's return, which suggests law enforcement is not capturing the full extent of the harm they experience. Two of the key principles of EBP involve directing limited policing resources to areas suffering the most harm and acknowledging that decision-making in policing is strongly influenced by both basic and applied research (Braga, 2016; Neyroud & Weisburd, 2014; Sherman, 2013). In short, EBP seeks to use the best available evidence to inform policing decisions (Weisburd et

al., 2023). If we apply these principles to missing children, a method is needed to quantify the harm caused while missing, either as a victim or an offender, and enable the comparison of outcomes.

Sellin and Wolfgang (1964) were pioneers who argued that crime rates should not be counted in isolation but combined with a measurement of the seriousness of each offence. One such system could be the Crime Severity Score (CSS), which is designed to reflect the relative harm of offending rather than how many crimes are committed (ONS, 2021). Ashby (2018) highlighted that using the CSS may be problematic, as it struggles to differentiate between similar offences. The notion that not all crimes are created equal led to the design of the CCHI (Sherman et al., 2016). The CCHI uses England and Wales's sentencing guidelines to calculate each crime's harm score. The harm score is derived from the recommended prison sentence that an offender with no previous convictions or aggravating factors would receive. Simply put, the CCHI is based on how many prison days the guidelines suggest as a starting point. For offences that do not receive a prison sentence, the harm score is calculated by how long it would take to complete the community service or how long it would take someone making the minimum wage to pay the fine (Sherman et al., 2016).

The weighting of crimes based on the level of harm against volume can be justified on three grounds. Firstly, it passes the democracy test as sentencing guidelines are delegated to judges through the UK Parliament. Secondly, it passes the reliability test as illustrated by Bland and Ariel (2015) without introducing bias to the characteristics or demographics of each unit. Thirdly, it passes the cost test. Financial challenges remain within UK policing, and the CCHI requires no new funding, using data that has already been collected (Sherman et al., 2016). Crime harm indices are now used across the world, including in Denmark (Anderson & Muller-Johnson, 2018), Sweden (Kärrholm et al., 2020) and Western Australia (House & Neyroud, 2018). Implementing the CCHI to target the power few missing children aligns with the MPS

strategy 'A New Met for London' by making evidence-based decisions using data and insights (MPS, 2023). The power few has been previously referenced in relation to both the number of occasions a child is reported missing and the locations from which they go missing. This process can also identify the greatest amount of harm in a small percentage of missing children (Sherman, 2007). There are other aspects to the power few in the context of missing children: those who are harmed and those who cause harm to others. Focusing on the predictors of harm will help develop future risk assessments (Sidebottom et al., 2019). Endeavouring to predict future harm by targeting resources using the CCHI and identifying the power few children may provide a way to reduce the current demand on policing and, more importantly, prevent children from suffering long-term trauma.

## **Conclusion**

This literature review explored some of the relevant research on the subject of missing children to provide background and context for this study. Although there is research predicting who might go missing and the harm that might be caused, there are no studies that seek to use the missing experience as a predictor of future harm, thereby identifying missing children as candidates for intervention. This thesis intends to fill that gap.

Many studies have sought to understand why children go missing, yet there is limited evidence-based research examining the predictive factors that are available to investigators at the time a child is reported missing. There is little doubt that the scale of missing children places considerable strain on police and partner resources in responding to reports and that children also represent the largest proportion of repeated missing cases. It has been established that the likelihood of a child going missing on multiple occasions is associated with age, being in care and a history of family conflict. Children in residential or foster care are over-represented in missing person investigations and tend to suffer the greatest harm.

There is evidence of a link between offending and victimisation while missing. Children who go missing are more likely to commit a crime, though it is often unclear whether this is the result of exploitation or coercion by others. Due to a lack of guardianship, these children are also extremely susceptible to becoming victims. The impact of ACE and its risk assessment matrix by partners has been discussed. Although there is growing interest in the identification and use of ACE measures within policing, this has not yet been widely evaluated. Predicting future harm to children using CCHI may be an effective way to identify the power few children suffering the greatest harm. However, it is acknowledged that children who experience similar incidents may suffer different levels of trauma.

This literature review has exposed a risk area for policing and highlighted gaps in the research. There are calls for policing to use historical data to predict future harm among children reported missing and identify what factors could prevent missing incidents. The review has also identified previous research by academics and therefore will adopt a similar evaluation to this research. The next section will explain the data used for this research and the methodology adopted.

### **Chapter 3: Data and Methodology**

This research employs a non-experimental descriptive analysis of pre-existing data involving missing children and crime. Having recognised that children who go missing on multiple occasions should be seen as an indicator of vulnerability (Shalev-Greene, 2011) and simultaneously identifying a lack of research into the harm either suffered or caused after being reported missing, this study was designed to examine whether several factors readily available within MPS data systems – such as frequency of missing, previous victimisation and offending since birth – played a role in the harm the child experienced or caused in the five years following the missing incident. ONS (2013) data revealed that the London boroughs of Newham and Waltham Forest had over a quarter of a million child residents.

Many risk factors relating to missing children have been identified in the literature; however, there has been no evidence-based study indicating whether the frequency and characteristics of missing events are indicators of future harm and therefore might represent triggers for intervention. This research firstly focuses on the year 2014 because it allows for a five-year follow-up as later data was affected by COVID-19 (ONS, 2021) and secondly, seeks to ascertain whether there is any correlation between risk factors and frequency. Adopting the CCHI to weight crime counts allows the examination of whether there is any substantial variance between victimisation and offending between individuals reported missing in 2014.

The research questions posed in this study will be laid out, and the term ‘harm’ will be addressed to explain the outcome measurements. The data selection process will then follow, describing the data obtained. Subsequently, there is an examination of the variables identified from the dataset and the process employed to extract them and match them to individuals. An evaluation of the quality of MPS data then ensues, followed by a discussion on the limitations and methodological difficulties uncovered during the research. The chapter will close with an explanation of the analytical process.



## Research Settings

This research seeks to improve our understanding of whether a child's circumstances and history are associated with harm and identify which risk factors are most strongly associated with harmful outcomes. It will ask the following questions:

‘To what extent is prior and future trauma concentrated in a cohort of missing children in the North East BCU, and what proportion of cohort CCHI totals pertain to both victimisation and offending?’

To answer the key question, several sub-questions will be addressed in turn:

1. How many individuals were reported missing, including on how many occasions, in the calendar year 2014 in the London boroughs of Newham and Waltham Forest?
2. At the point of the first missing episode in 2014, what are the risk factors associated with children under the care of a local authority?
3. At the point of the first missing episode in 2014, what are the risk factors associated with children who have a criminal record?
4. At the point of the first missing episode in 2014, what are the risk factors associated with previous exposure to DA or child sexual exploitation?
5. Of all the children victimised before their 2014 index missing report, how many had suffered criminal victimisation, with CCHI score totals?
6. How many of the children, after their initial 2014 report and up to 1,825 days thereafter suffered criminal victimisation, with a CCHI score total?
7. How many of the children, after their initial 2014 report and up to 1,825 days thereafter, were accused of committing a criminal offence with a CCHI score total?

To enable the exploration of these research questions, outcome measurements will be defined before other variables are gathered and examined.

## **Harm Defined**

The term 'harm' is used throughout this study and refers to missing children who have been the victim of crime (suffered harm) or have gone on to commit crime (caused harm). To allow the calculation of the level of harm experienced or perpetrated, the CCHI was utilised, as it attaches a harm value to each recorded offence based on sentencing guidelines. The CCHI values are calculated by taking the number of days in prison suggested in England and Wales and the starting point sentence for that offence (Sherman, 2016). The total harm score for each missing child is calculated by combining the offences they experienced as a victim before the first missing episode and those in which they were involved as both a victim and offender in the 1,825 days following the first missing incident. Using this cumulative system allows for a distinction between low and high levels of harm. This study also examines whether there is any substantial variance between the frequency of missing incidents and harm received and caused.

The experiencing or causing of harm (and in some cases the absence of it) forms the basis of the outcome measurement within this research. The other dependent variables serve the purpose of precisely measuring the intent of the question and revealing other traumas to which the child has been exposed. For every child who goes missing, an average of at least 12 people are affected physically and emotionally in some way (Henderson et al., 2000). The ability to record or assess the harm suffered by those individuals is simply not possible with current police indices. Accordingly, the term 'harm' will be understood to apply only to missing children who suffered or inflicted harm.

## **Study Design**

In general, children can only enter the MPS systems via three formal routes; as victims, offenders or coming to notice through a vulnerability issue, such as being reported missing.

The Merlin system was introduced to the MPS in March 2005 to aid police in dealing with vulnerability. The system allowed for the recording and sharing of concerns via a web-based interface with stakeholders to effectively safeguard members of the public. All incidents involving a person reported as missing (MISPER) are recorded in the Merlin system. In a MISPER report, there is no complainant or accused; however, a subject page allows for personal details to be recorded along with other particulars. Since Merlin's introduction, recording practices have been refined, improving the quality of recorded MISPER data. Consistency of recording was well in place by 2014, therefore, it is a suitable year for the collection of missing person records for this research.

In March 1992, the Crime Reporting Information System (CRIS) was introduced, revolutionising the way the MPS recorded allegations of crime. CRIS is a web-based tool that allows users with the appropriate access to create, update and view crime reports. The CRIS system has several search facilities, such as identifying crime types, victims and suspects' details. Over the next four years, the CRIS system was refined as part of the implementation process and was made fully operational in October 1996. As a result, any child who was recorded as missing in 2014 and reported as a victim of crime at any time since their birth will feature on the CRIS system. The CRIS system provides the majority of users with the ability to search within a five-year window; however, the researcher was provided access from its inception.

The CRIS system enables analysis of the harm encountered, not only while missing but also before and after. The College of Policing (2016) expressed that going missing should be treated as an indicator of issues such as victimisation and criminal behaviour, placing a child at risk of harm. Furthermore, safeguarding children is paramount, and a missing episode should be recognised as an opportunity to identify and address the risk. A fundamental element of the research was to establish if this was the case. Consequently, a search of CRIS from birth

through a five-year follow-up period succeeding each of the first missing episodes was conducted, thereby permitting a full evaluation of harm experienced. This allows for the College of Policing observation to be tested. The cutoff date was set as 31 December 2019, allowing for a five-year follow-up period for every child. Overall, the selected date ranges enabled the collection of up to 22 years of crime data.

The use of the 2014 dates (1 January 2014 to 31 December 2014) isolated the missing child reports to n=3,325 incidents involving n=1,019 individuals for analysis. These numbers are somewhat similar to those found in studies conducted in other UK metropolitan force areas by Sidebottom et al. (2019) and Bezeczky and Wilkins (2022). The repetition of this type of analysis in a third metropolitan force area seeks to increase the external validity of the research. The local authorities of the North East BCU cover a large urban area, namely, the London boroughs of Newham and Waltham Forest. Newham residents are predominately non-white and one-quarter are aged 0–17 while Waltham Forest residents are predominately white with a similar proportion of children (Office for National Statistics, 2021). Around one-third of children in Waltham Forest and almost half of those in Newham are living in poverty (End Child Poverty, 2022). The number of looked-after children in both local authorities is higher than the average in England (Office for National Statistics, 2022).

### **Ethical Considerations**

A decision was made to include all children in the dataset, aligning with the recent scope of missing children (Babuta & Sidebottom, 2018; Bezeczky and Wilkins, 2022; Sidebottom et al., 2019). An anonymised dataset was provided to the researcher via a police data analyst, including a unique identification number for each child, the number of occasions they went missing in 2014 and the local authority they resided in. This dataset has remained in the MPS cloud storage system known as Box. After viewing the first missing report it became possible

to manually collate the demographic variables: age, sex, ethnicity, residence in a care home or not, and evidence of a criminal record office number (CRO). A crosscheck with the CRIS system enabled the identification of any exposure to interfamilial DA and child exploitation concerns. A notification is added to the system when a child is present at the scene of a domestic incident. The term DA is defined as an incident or pattern of incidents of controlling, coercive, threatening, degrading and violent behaviour by partners, ex-partners, family members or carers (UK Gov, 2021). The same applies when a child is believed to be at risk of child exploitation, defined by the College of Policing (2020) as a form of child abuse. Child exploitation occurs when a group or individual takes advantage of an imbalance of power to compel the victim to engage in activity through coercion, manipulation, deception, or by offering something they need or want in exchange.

There was the possibility to further increase the size of the dataset by collecting MPS missing children's records on Merlin as far back as 2005; however, the projected numbers would have increased the variances in the quality of the data and prevented the ability to explore the analytical power of the variables to be discussed. Missing children's data before 2005 was recorded using a paper system and did not focus on many of the safeguarding concerns brought about by the introduction of Merlin. The dates selected ensured the MPS had sufficient time to refine their use of both Merlin and CRIS before capturing data for this research. As a result, the records selected for analysis can be described as accurate, consistent and reliable. In addition to the quality of the dataset, the MPS have a dedicated missing persons unit within each borough and employs a tactical policy advisor, whose job includes assessing missing children records and improving the quality of the information recorded. These controls provide the research with a high degree of internal validity.

Catney (2018) used missing persons data from West Yorkshire Constabulary covering a similar period while Vo (2015) utilised Thames Valley Police missing persons data over a

shorter period with similar variables. The external validity of this research is improved by building upon previous research, as the data sources selected enabled further replication and close comparison. No duplicate cases were found within the n=3,325 reported incidents. The outcomes of the various variables were recorded in an Excel spreadsheet and stored in the MPS Box cloud. The supplementary data gathered on the n=1,019 individuals provided n=12,228 units of data for analysis. A data protection impact assessment (DPIA) screening was conducted as data relating to children was being utilised; however, a full DPIA was not deemed necessary by the MPS. Similarly, an ethics application was considered but not deemed necessary by the University of Cambridge or MPS.

### **Data Quality**

Two-thirds of children who go missing are not reported to the police (Rees, 2011). Similarly, not all crimes are reported to the police, for various reasons. This research requires the examination of missing children's investigations and recorded crime; therefore, there is the potential for data quality and crime recording issues (Chandan et al., 2020). It is not within the scope of this research to assess the proportion of unreported missing children within Newham and Waltham Forest; this element was acknowledged but not pursued. In addition, it was outside the purview of this research to examine how police action may have influenced the degree of harm experienced by individuals in the sample. The first reported missing episode in 2014 was used to avoid the potential of counting different recorded individual characteristics for those reported on multiple occasions. It is critical to assess the accuracy of the raw data to ensure confidence in the findings. Both CRIS and Merlin rely on data entry by police officers and staff at various stages of the investigation. As with any data processing, it is susceptible to errors. Data is entered by selecting from a fixed range, such as yes, no or unknown or by entering free text. The free text fields pose the greatest risk to the data quality as they are open

to interpretation and rely on the ability of the recorder. While the free text's information may be noteworthy due to its descriptive quality, analysing and coding it is significantly more difficult and time-consuming. For this reason, free text data was not included in this study.

In England and Wales, National Crime Recording Standards determine how police forces collect statistics about offences. The Home Secretary, using powers invested by the Police Act 1996, requires Chief Constables to provide regular statistical data on the number of crimes recorded within their force area in line with Home Office Counting Rules (HOCR). The HOCR mandates that police record all notifiable offences against both the state and victims. Although the data used in this study is not primarily intended for use in academic research, it can be used to address the questions posed, with the understanding that it cannot be altered, improved or enhanced to suit the researcher. HMICFR (2023) highlighted cause for concern regarding how the MPS identifies and assesses risks as well as how it responds when children are reported missing, although a 2022 inspection found that the MPS recording of crime was adequate. The victimisation and offending data were subject to the CCHI, matching offences to the associated harm score. While analysing the data, it was noted that the CCHI does not calculate a score for child exploitation investigations or non-criminal domestic incidents. To fully understand the trauma and subsequent impact, these were captured as specific incidents.

### **Data Collection and Cleansing**

From the moment a child is reported missing to the police, information is gathered and recorded. Basic details, such as name, age, gender and circumstances are recorded by the call handler. Currently, the MPS does not capture whether there are pre-existing risk factors such as frequency, exposure to child exploitation or DA. The current literature is deficient in determining whether these factors are indicative of potential harm beyond the immediate missing episode. Currently, the approach for risk grading missing children is based on officers'

professional judgement rather than evidence. As a result, there are no risk factors to examine for a correlation with harm outcomes.

Previous studies in the UK have analysed such factors as age, gender, ethnicity and whether the child was under the care of the local authority when they were reported missing (Catney, 2019; Talbot, 2018; Vo, 2015). This research aims to enhance previous studies by examining the potential of MPS data, using additional variables to predict harm beyond the immediate call to service. Supplementary data collected from Merlin and CRIS provides the opportunity to examine other child safeguarding issues, such as exposure to domestic incidents and child exploitation, and the nature of the harm suffered. Individuals of all ages can be the victims of exploitation; however, a child is defined as being under the age of 18 (Children's Act, 1989).

The following variables produced two possibilities, either yes or no: being under local authority care, possession of a CRO, exposure to DA and exposure to child exploitation. Gender also produced two possibilities, with individuals recorded as either male or female. Age and demographics recorded 17 different possibilities, while the frequency of missing produced a further variable. Harm suffered before and after the index missing incident created further variables through CCHI scores in the same way subsequent harm created a further variable. By combining these factors, a list of 40 variables was created for analysis; 14 from police data and 26 from demographic data. Appendix 1 shows both the calculated and demographic lists and the source from which the data was extracted. Each child reported missing to the MPS in 2014 has an allocated unique identifier that enables data to be cross-referenced within Excel to create a central repository. This cross-matching method enabled the analysis of numerous variables as potential predictive factors, an ability not seen in previous studies.



## **Data Limitations**

There is considerable literature when it comes to the collection and use of secondary data. On the one hand, it can be described as easily collected, with a wide variety of sources, while on the other hand, it can be described as lacking quality, reliability or accuracy as the researcher has no control over how it was collected and processed (Denscombe, 2014; Thomas, 2023). HMIC (2014) exposed certain limitations of MPS systems such as CRIS and Merlin, which alerted the researcher to routes to avoid. The limitations experienced will follow.

CRIS was introduced in 1992, and 2013 was the first full year in which child exploitation was recorded. Therefore, it should be noted that some children's experiences of harm will have been missed. Information relating to the date a child was found or returned and how they presented was often not updated. As a result, the return date field was omitted as it was deemed of insufficient quality to examine as a variable because it did not reveal what harm, if any, had been suffered or caused while the child was missing. One of the goals of a return-to-home interview is to extract responses as to whether a child suffered harm while missing. The response to this question relies heavily on the officer asking the questions. Some children may never disclose victimisation to the police or other interested parties; however, if they do choose to report at a later date, the 1,825 days provides a longer period to analyse beyond the missing episode itself.

Notwithstanding the limitations mentioned, the research has strong internal and external validity. The number of children reported missing within Newham and Waltham Forest in 2014 is consistent and comparable with numbers reported across the capital. In reviewing the dataset, the first missing episode for each child was quality-checked by the researcher and the information was assessed for any insufficient detail. Both Merlin and CRIS are web-based platforms and the information sought in this study was taken from mandatory fields that the inputter must complete to move forward. The detail within the dataset assembled enabled the

analysis of potential risk factors predictive of future harm. This approach improves on previous studies, which have either been too wide in scope or relied on a smaller scale of data.

### **Analytical Process**

The research design methodology employed in this study was conditional probability analysis, which determines the probability of an event based on its historical frequency, harm and known outcomes. Probability will be used to represent statistical significance concerning the results. This method has made it possible to determine whether the results are relevant or the result of pure chance. Data was recorded in Excel to enable tables to be created as a preliminary step towards conditional probability analysis.

The research questions focus on frequency and harm, specifically those who suffer it and whether it is predictable. Each potential predictor is analysed using appropriate statistical testing to determine the probability that the observed data distribution would match the expected distribution if the variables were truly independent. As the variables were in categories, chi-square tests were used to establish if the findings were statistically significant. To understand the impact each variable has on a child experiencing or not experiencing harm, an effect size test was carried out using a web-based effect size calculator (Campbell Collaboration, 2023) based on the size of the chi-square value and the total number of children in the sample. Before the analysis commenced, the significance criterion was fixed at 0.05. The risk ratio (RR) for each risk factor was determined to provide a measure for comparison. An  $RR > 1$  indicates a positive association and an  $RR < 1$  indicates a negative association. This allowed for the ranking order of the effect sizes of each variable based on how strongly its presence or absence was associated with the harm outcome (Spiegelhalter, 2019). To facilitate the interpretation of the findings into policy implications, the last section of the analysis involved calculating false positive rates. Specifically, it asked how many times a risk factor

would incorrectly predict that a child would suffer or cause harm. This analytical process enabled the research questions to be answered. The following chapter will describe in detail the findings of the research.

### **Summary**

In summary, the researcher has maximised the interpretation, comprehension and application of numerical data with the use of statistics. Greater sample sizes increase the likelihood of accurately representing the population's distribution. The research topic will be addressed by determining the variables that have the greatest influence, how they interact with one another and, most importantly, how they correlate with future outcomes.

## **Chapter 4: Results**

This chapter will address the research questions in three parts. First, the overall number of missing incidents and individuals are presented. Second, it will describe those children who experienced harm before going missing in 2014 and those who either experienced harm or caused harm in the following 1,825 days. Third, individual factors' results are analysed using chi-square tests and odds ratios. These tests were conducted to examine the extent to which pre-existing police data can be employed as risk indicators for potential future harm. The section closes with a summary and draws together the key findings as a means of answering the key question: To what extent is prior and future trauma concentrated in a cohort of missing children in North East BCU, with what proportion of cohort CCHI totals for both victimisation and offending?

### **Part One: How many children were reported missing in Newham and Waltham Forest in 2014?**

A total of  $n=3,325$  incidents of children going missing came to police attention in 2014 within the North East BCU, which comprises the boroughs of Newham and Waltham Forest. Of these incidents,  $n=1,019$  children were found to be responsible for the total number of incidents. Figure 1 displays the breakdown of the incidents into three categories: missing 10 or more times, missing on two to nine occasions and missing on one occasion.



When considering the breakdown between the three categories of incidents in Figure 1, the numbers at first appear to be unremarkable; however, when looking at the sample by individuals as seen in Figure 2, n=654 (64.2%) of children were reported missing on one occasion, n=287 (28.2%) children on two to nine occasions, while n=78 children (7.6%) were reported missing on 10 or more occasions. This is a more meaningful statistic. When looking across the sample by gender, it can be seen that n=541 (53.1%) of missing children were male and n=478 (46.8%) were female. The most significant difference between genders was found in the 10 or more incidents category, where 49 (62.9%) females were recorded against n=29 (37.1%) males. After gender, the sample was divided further to consider the ages of those reported missing. Overall, those under 12 amounted to 1.5% of the total sample compared to 55% for children aged 12–14 and 43.5% for those aged 15–17. When splitting by gender and age, the largest group represented were males aged 12–14 at close to one-quarter (22.2%) of the total sample. Figure 3 indicates the distribution of missing children by incident totals.

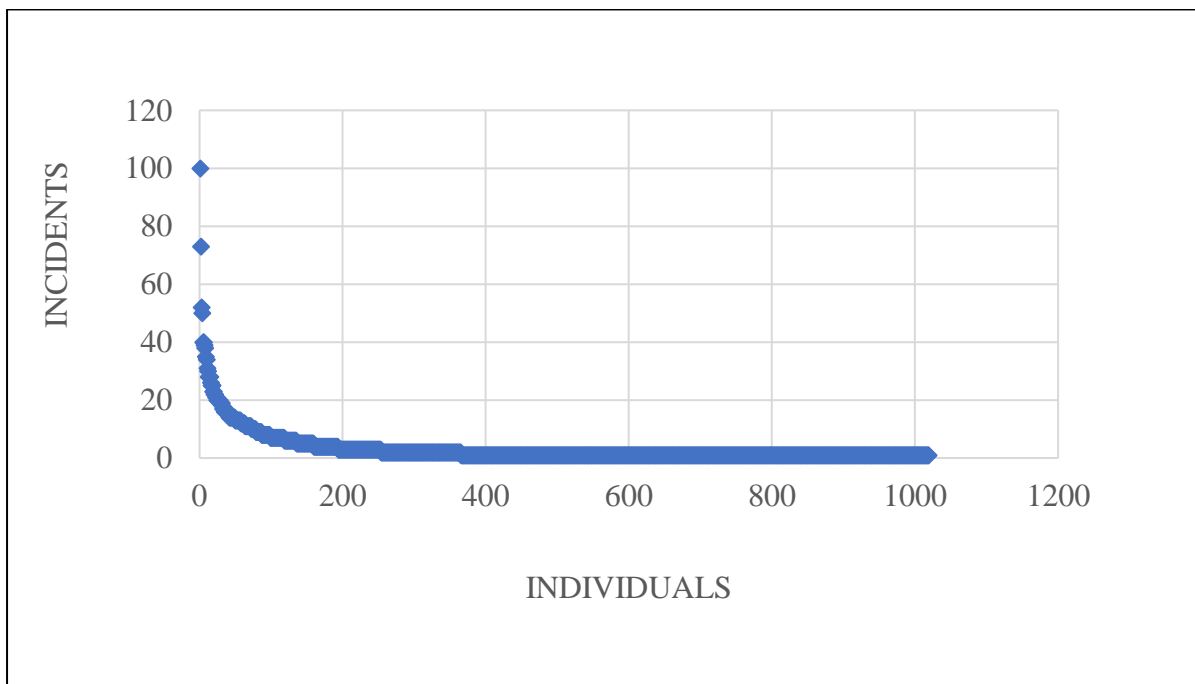


Figure 3: Children reported missing in 2014 by incident totals.

As can be seen in Figure 3, when examining how many times each child was reported missing, it is remarkable that one child alone was reported missing on n=100 occasions in 2014. The next most frequently missing child was reported on n=73 occasions, followed by n=52 occasions for the third most frequently missing child. The curve dramatically reveals the power few and illustrates that the vast majority of children only go missing once or twice.

**Part Two: Which children suffered or caused harm?**

This question will be addressed in three stages, first by exploring those children who suffered harm before the index missing report, moving on to children who suffered harm in the 1,825 days following and finishing with children who caused harm as an offender during the follow-up period.

**Pre-victimisation**

Before the first reported missing episode in 2014, nearly one-quarter of children n=226 (22.1%) had suffered harm at some level. This is made up of 28% of all missing females and 17% of all missing males having suffered pre-victimisation. Table 1 indicates the breakdown of numbers and percentages for each missing cohort accompanied by gender. The overall percentage shows the total sample affected.

*Table 1: Table showing children who suffered pre-victimisation by missing incidents and gender, including percentage of the overall sample.*

Category	Female	Male	Total	Female % sample	Male % sample	Overall %
10+ incidents	35	17	52	67.3%	32.7%	5.2%
2-9 incidents	72	44	116	62%	38%	11.3%
1 incident	27	31	58	46.5%	53.5%	5.5%
Total	134	92	226			
% Total	59.4%	40.6%	100%			

Starting with the 10 or more incidents category, it can be seen that n=52 children were victimised before the index missing report. Females made up 67.3% of this pre-victimised group, compared to 32.7% for males. Children in the two to nine incidents category recorded n=116 incidents, with females again dominating at 62% as opposed to 38% of males. The single-incident category was more evenly split, with 53.5% of males suffering previous harm compared to 46.5% of females. Overall, 9% of males reported missing had suffered pre-victimisation whereas 13.1% of females had suffered harm. Across the three missing categories, females suffered 59.4% of all recorded pre-victimisation, a more meaningful statistic. A chi-square test was conducted to understand if there was a relationship between being female, missing 10 or more times and suffering pre-victimisation. The result showed a significant association ( $\chi^2(1) = 8.2496, p < 0.05$ ). Table 2 shows the sample further divided to consider the gender and age groups of those who suffered harm before the index missing report.

*Table 2: Table showing children who suffered pre-victimisation by gender and age group, including percentages of harm suffered.*

Category	Female	Male	Victim total	Total sample %	Female sample %	Male sample %	Female overall %	Male overall %	Overall %
Under 12	3	6	9	3.9%	1.3%	2.6%	0.2%	0.6%	0.8%
12–14	49	40	89	39.4%	21.7%	17.7%	4.8%	3.9%	8.7%
15–17	82	46	128	56.7%	36.4%	20.3%	8.1%	4.5%	12.6%
Total	134	92	226	100%	59.4%	40.6%	13.1%	9%	22.1%

This provides an indication of the scale of pre-victimisation suffered by females, particularly those aged 15–17, who experienced the highest levels of pre-victimisation among all groups: 36.4% within the sample and 8.1% overall. It was possible to take the victimisation data a step further by utilising CCHI scores to identify the level of harm suffered. There is a clear relationship between pre-victimisation and missing frequency, and critical gender



differences in pre-harm can also be observed. Table 3 indicates the CCHI harm each category encountered, with average scores and percentages.

*Table 3: Table showing the accumulative pre-victimisation CCHI totals for gender and age categories with percentages of harm suffered.*

Category	Female 10+ CCHI	Male 10+ CCHI	Female 2-9 CCHI	Male 2-9 CCHI	Female 1 CCHI	Male 1 CCHI	Female total CCHI	Male total CCHI
Under 12	0	0	2,245	860	867	660	3,112	1,520
12-14	26,796	2,964	12,882	8,145	4,654.5	1,675	44,332.5	12,784
15-17	49,470.5	5,245	44,997	6,159	6,879	2,876	101,346	14,280
Total score	76,266.5	8,209	60,124	15,164	12,400.5	5,211	148,790.5	28,584
Average CCHI	2,179	483	835	344	459	168	1,110	310
% CCHI Total	43.1%	4.7%	33.9%	8.5%	6.9%	2.9%	78.1%	21.9%

Not only are females heavily victimised, they also suffer the greatest levels of harm (CCHI). It was observed that females in the 10 or more groups had a cumulative harm score totalling 76,266.5 compared to 8,209 for males. Females aged 15-17 in the same group had a total harm score of 49,470.5 and subsequently sustained 64.8% of the harm experienced in that category. With an average CCHI score of 2,473.5 per child, this is the equivalent of an offender receiving close to a seven-year sentence. This finding was notably higher than any of the other age or gender groups. Females aged 15-17 in the two to nine category had the next highest total harm score (44,997) and an average CCHI score of 625, which equates to an offender receiving a custodial sentence of one year and seven months. A chi-square test was conducted to determine if there was a correlation between being female, aged 15-17 and suffering harm and it was found to be the case, with a significant outcome detected ( $\chi^2(1) = 13.3918, p < 0.05$ ). Females suffered from higher levels of harm in every category, becoming the victim of offences against the person and serious sexual offences. It was observed that some children in the two to nine and once-only categories also suffered significant levels of pre-victimisation, which will be discussed later.

## Post-victimisation

In the 1,825-day follow-up period, 154 children (15.1%) reported being the victim of crime. The three missing incident categories produced the following breakdown, n=46 children (30%) from the 10 or more category, n=87 children (56.5%) from the two to nine category and n=21 children (13.5%) from the single incident category. When those children were examined by gender, it was observed that females were almost three times more likely to be victimised than males. Table 4 displays the breakdown of the post-incident victimisation by gender and age, including percentages.

*Table 4: Post-victimisation by gender and age.*

Category	Female	Male	Victim total	Total sample %	Female sample %	Male sample %	Female overall %	Male overall %	Overall %
Under 12	5	5	10	6.5%	3.2%	3.2%	0.5%	0.5%	1%
12–14	50	14	64	41.5%	32.5%	9%	4.9%	1.4%	6.3%
15–17	57	23	80	52%	37.1%	15%	5.6%	2.2%	7.8%
Total	112	42	154	100%	72.8%	27.2%	11%	4.1%	15.1%

Table 4 shows that the scale of post-victimisation is significantly higher for females (72.8%) than for males (27.2%). Not only is there an important relationship between frequency and harm, but there is also a critical gender difference in post-victimisation. Females aged 15–17 reported the highest victimisation rate at 37.1%. A chi-square test was conducted to understand if there was a relationship between being female and suffering post-victimisation. The test produced a non-significant association ( $\chi^2(1) = 3.6323, p < 0.05$ ). A closer examination of the post-victimisation data utilised the CCHI to expose the levels of harm suffered. Table 5 indicates the CCHI harm each category encountered with average scores and percentages.

*Table 5: Table showing the accumulative post-victimisation CCHI totals for gender and age categories, with percentages of harm suffered.*

Category	Female 10+ CCHI	Male 10+ CCHI	Female 2-9 CCHI	Male 2-9 CCHI	Female 1 CCHI	Male 1 CCHI	Female total CCHI	Male total CCHI
Under 12	0	0	8,909	1,365	1,845	365	10,754	1,730
12-14	18,669	1,914	42,454	8,247	6,882	545	68,005	10,706
15-17	19,875	5,810	18,114	11,959	9,115	2,460	47,104	20,229
Total score	38,544	7,724	69,477	21,571	17,842	3,370	125,863	32,665
Average CCHI	1,204.5	515	1,037	2,157.5	1,372	421.2	1,124	778
% CCHI Total	24.3%	4.9%	43.8%	13.6%	11.3%	2.1%	59%	41%

It is apparent that females suffered significantly more post-missing harm than males, 59% compared to 41% of males. When examined by age and incident, it was observed that the females aged 12–14 in the two to nine cohort contained the largest CCHI score, representing 26.8% of the total harm, followed by 15–17 females in the 10 or more group, with 8%. Males in the two to nine category displayed an average CCHI score of 2,157.5 per child; a severity of harm equivalent to the offender receiving a prison sentence of five years and nine months. It should be noted that this figure is due to extreme levels of victimisation against one individual in the cohort. A chi-square test was conducted to understand if there was a relationship between being female, aged 12–14 and suffering post-victimisation harm, and a significant association was discovered between the variables and the harm outcome ( $\chi^2(1) = 11.7944, p < 0.05$ ). As seen in pre-victimisation, females suffer more harm in every category, becoming victims of offences against the person and serious sexual offences.

## **Offending**

It can now be seen which missing children suffered harm before and/or after the index missing episode; however, it is also important to understand which children go on to commit crimes. A 1,825-day follow-up enabled this to take place. On inspection, n=129 (12.7%) children were

identified as being accused of a crime. Table 6 displays the breakdown of post-offending by gender and age, including percentages.

*Table 6: Post-offending by gender and age, including percentages.*

Category	Female	Male	Offender total	Total sample %	Female sample %	Male sample %	Female overall %	Male overall %	Overall %
Under 12	2	1	3	2.3%	1.5%	0.8%	0.2%	0.1%	0.3%
12–14	18	40	58	45%	13.9%	31.1%	1.8%	3.9%	5.7%
15–17	23	45	68	52.7%	17.8%	34.9%	2.3%	4.4%	6.7%
Total	43	86	129	100%	33.2%	66.8%	4.3%	8.4%	12.7%

Table 6 illustrates a shift between genders when it comes to offending after the index missing episode. There is a critical gender difference in offending, with males responsible for 66.8% of the total offending. Those aged 15–17 were responsible for 52.7%, closely followed by the 12–14 age group, with 45%. A chi-square test was conducted to understand if there was a relationship between being male and offending after missing episodes. The test produced a significant association ( $\chi^2(1) = 3.976$ ,  $p < 0.05$ ). A closer examination of the offending data utilising the CCHI exposed the levels of harm caused. Table 7 shows the CCHI harm in each category, with average scores and percentages.

*Table 7: Table showing the accumulative offending CCHI totals for gender and age categories, with percentages of harm caused.*

Category	Female 10+ CCHI	Male 10+ CCHI	Female 2–9 CCHI	Male 2–9 CCHI	Female 1 CCHI	Male 1 CCHI	Female total CCHI	Male total CCHI
Under 12	0	0	24	0	0	2	24	2
12–14	560	12,578	475	9,998	2	3,214	1,037	25,790
15–17	5,394.5	9,075	2,190	19,441	120	4,079	7,704.5	32,595
Total Score	5,954.5	21,653	2,689	29,439	122	7,295	8,765.5	58,388
Average score	283.9	832.8	149.3	817.7	20.3	303.9	203.8	678.9
% CCHI total	8.9%	32.3%	4.1%	43.8%	0.1%	10.8%	13.1%	86.9%

Table 7 demonstrates the instances of those causing harm, with males exclusively having the highest CCHI levels. It was again observed that males in the two to nine group (43.8%) and the 10 or more group (32.3%) were the largest contributors, with similar average scores translating to a 26-month custodial sentence. It is evident from the data that male offenders are strongly associated with offences related to the misuse of drugs, acquisitive crime and offences against the person. A chi-square test was conducted to understand if there was a relationship between being a male aged 15–17, missing between two and nine occasions and causing harm post-missing episodes. The test produced a significant association ( $\chi^2(1) = 211.8995, p < 0.05$ ).

### **Summary**

It is now apparent that 78 children were responsible for almost half (48%) of all missing incidents in 2014. Approximately one-quarter (22.1%) of children reported missing had suffered some level of pre-victimisation, and 15.1% suffered victimisation during the 1,825-day follow-up period. Females suffered the greatest levels of harm both pre-missing and post-missing, with females aged 15–17 the most prevalent in both categories. The tide turns when considering offending behaviour post-missing, with males unequivocally the most prevalent in all categories and those aged 15–17 causing the most harm. Evidence indicates that some children, although not in the groups displaying the highest levels of harm, have some of the highest individual harm scores. This should not be disregarded.

### **Part Three: What risk factors are associated with missing children and harm?**

While more is now known about three distinct outcomes for children who go missing, this study seeks to understand if there are other risk indicators contained within existing police data that are connected with those children causing or suffering harm. To answer this question,

variables were examined against frequency and two levels of CCHI harm, under 730 and above, to enable the identification of factors associated with particular harm levels.

### Risk Factors Associated with High Frequency

It was not only important to identify which children suffer or cause the highest levels of harm but also to identify what if any risk factors are associated with high frequency levels. Having established that n=78 children (7.6%) were missing on 10 or more occasions, these children were selected for further analysis. Probability tests were conducted to evaluate 23 available variables from police data to determine the significance of the differences. Odds ratios were then calculated to measure the presence or absence of each variable within high levels of missing incidents, allowing for comparisons between the risk factors. Figure 4 shows a bar chart illustrating the risk factors with significance values displayed in descending order.

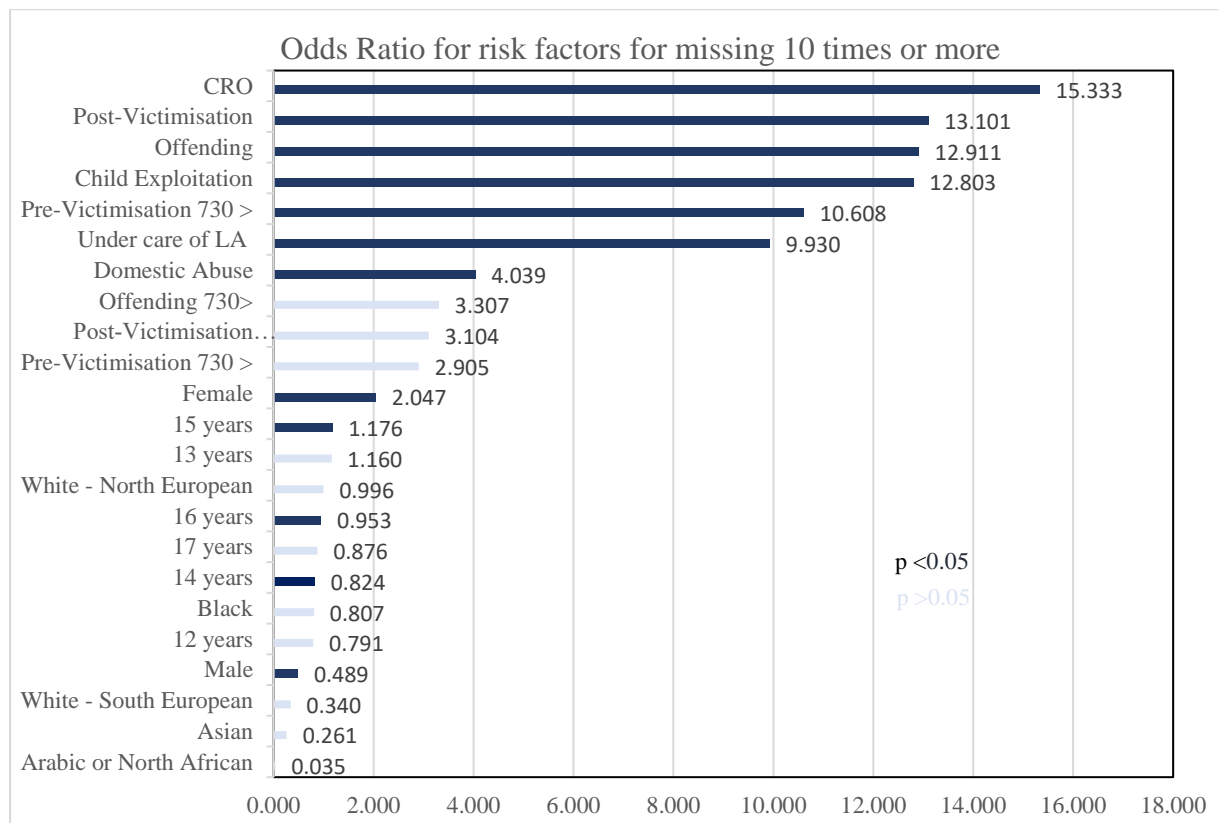


Figure 4: Odds ratios for risk factors associated with missing 10 times or more.

Figure 4 shows that the presence of a criminal record in this category has an odds ratio of 15.333, hence the odds of going missing 10 or more times with a criminal record is 15 times higher than the odds of a child without a criminal record going missing. The existence of post-victimisation is the next highest risk factor (13.101), followed by offending and then exposure to child exploitation. Being either a victim or an offender results in a higher odds ratio for this outcome compared to those with CCHI scores over 730. Those residing under the care of the local authority were 9.930 times more likely to go missing on 10 or more occasions. Females were 2.047 times more likely to go missing 10 or more times compared to males at 0.489, a finding that correlates with earlier observations. Variables related to ethnicity and some age groups have odds ratios of less than 1, indicating that going missing 10 or more times is less likely due to the presence of this factor. These values are shown in a different shade on the bar chart as the significance (p-value) between the outcomes was greater than 0.05, indicating no statistical significance. Not all variables with an odds ratio less than 1 are non-significant. Children aged 16 had an odds ratio of 0.953 but the value indicated a significant difference. False positive rates were also calculated to ascertain to what extent the identification of future harm or offending, solely based on the criterion of being reported missing 10 or more times, would inaccurately predict the likelihood. The false positive rates for offending returned at 95.4% with future victimisation at 92.4%.

### **Risk Factors Associated with Coming to Harm**

Having established the risk factors associated with going missing 10 times or more, it is important to understand if there are any risk factors that could indicate if a child will come to any level of harm in the 1,825 days following a missing episode. Through analysing data for all children who came to harm in the ensuing 1,825 days, 34 of the variables created were

present in the sample. Each of these variables was subject to odds ratios and probability values.

Figure 5 is a bar chart showing the variables in descending order of odd-ratios with p-values.

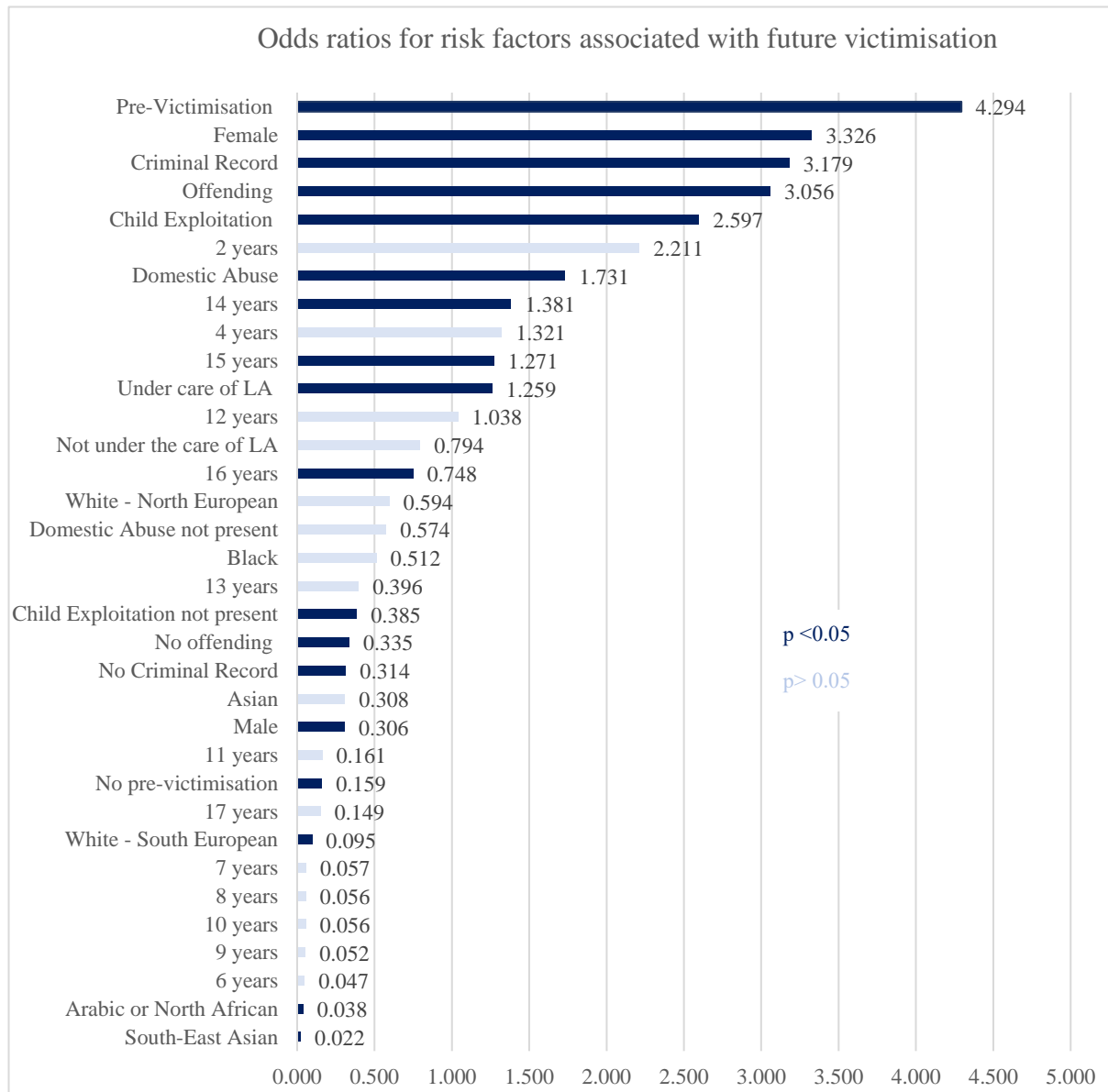


Figure 5: Odds ratios for risk factors associated with future victimisation.

It is now evident that a child being the victim of crime before going missing has the largest odds ratio for future harm. This suggests that the odds of a child who has been victimised before going missing is 4.294 times more likely to suffer future victimisation than a child who has not suffered pre-victimisation. Being female is the next largest risk indicator, followed by



having a criminal record. A theme of vulnerability then emerges, with the existence of child exploitation, exposure to DA and residing under the care of the local authority all identified as significant risk factors ( $p < 0.05$ ).

Demographics such as age, gender and ethnicity are concentrated towards the mid to bottom part of the chart, having lower odds ratios than victimisation and criminality. In terms of ethnicity, children were represented in equal proportions across frequency and victimisation categories, with a slightly higher percentage of white North European children coming to harm, although no statistical significance was recorded. Although the odds ratios for these risk factors are lower, children aged 14–16 years showed statistically significant differences, whereas ethnicity was mostly non-significant, with the exception of Asian. These findings are consistent with earlier observations, where females or those within the 14–16 age group had the largest odds ratios concerning demographics. A false positive test was conducted to establish to what degree pre-victimisation would falsely predict future harm. As harm was experienced by 15.1% of the overall sample, the false positive rate was 84.9%.

### **Risk factors associated with coming to harm above 730 CCHI**

Noting that some children suffer significant levels of pre-victimisation yet do not feature among the most frequently missing children, the final stage was to analyse children with harm scores above 730 CCHI to determine what risk factors were at play. The data revealed that  $n=55$  children recorded pre-victimisation scores above 730 CCHI, with  $n=22$  (40%) in the 10 or more missing incident category, while  $n=33$  (60%) sat outside. The gender demographic became starker when considering CCHI levels of 730 or higher. Females became further overrepresented at 81%. A chi-square test was employed to identify if there was a correlation between suffering high levels of harm and being female. The result indicated a statistically significant association between this variable and the outcome ( $\chi^2(1) = 28.6303$ ,  $p < 0.05$ ). In this

group, 21 of the 40 variables were present. These were analysed using an odds ratio to calculate the significance and understand the effect size of any results. Figure 6 is a bar chart showing the variables in descending order of odds ratios with p-values.

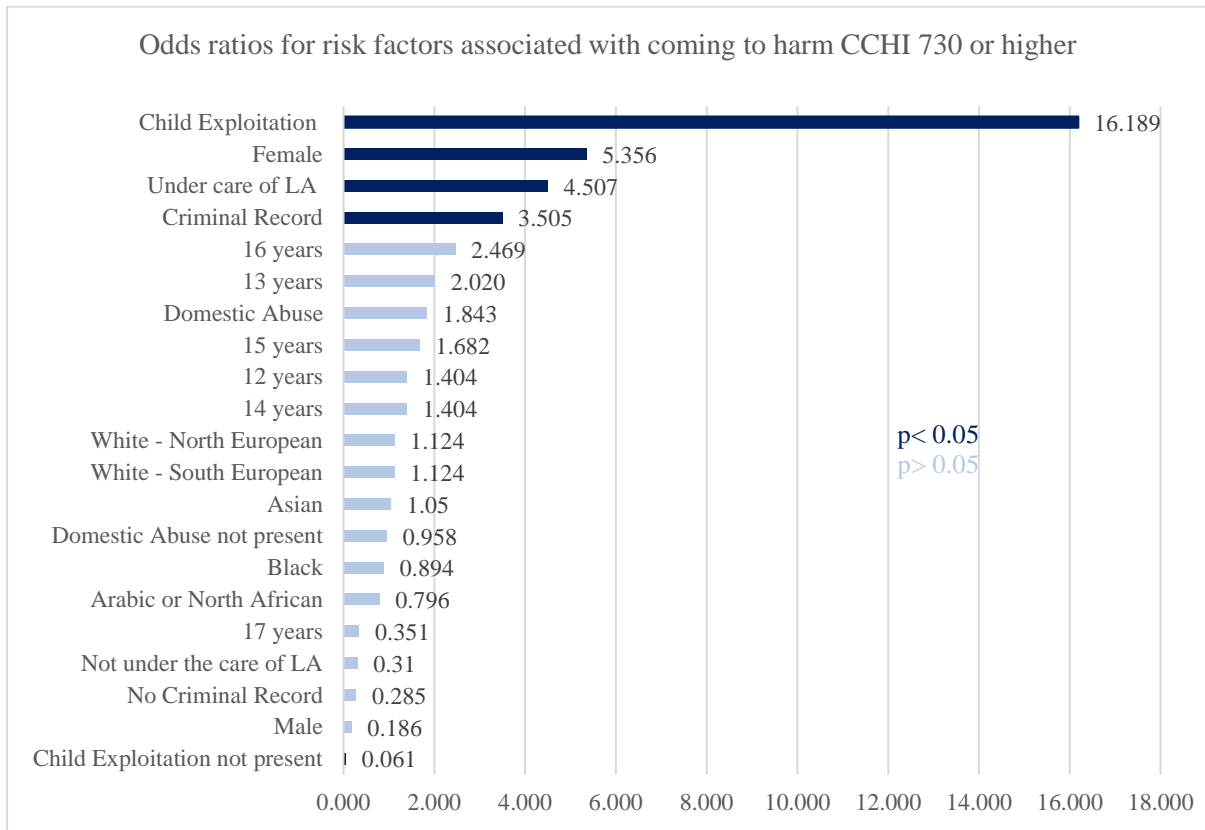


Figure 6: Odds ratios for risk factors associated with coming to harm, CCHI 730 or higher.

Child exploitation displayed a statistically significant risk factor for coming to harm CCHI 730> with an odds ratio of 16.189 and a false positive rate of 95.6%. Next was being a female (5.356), followed by being under the care of the local authority (4.507) and then having a criminal record (3.505). These four variables all produced statistically significant p-values. Comparing the top five risk factors across the categories, criminal record and child exploitation were found in all three and can therefore be identified as reliable indicators of future significant harm. When reviewing the effect sizes, 16 of the variables were found not to be significant.

However, those relating to age and ethnicity closely matched with the type of harm observed earlier.

## **Summary**

In summary, the research findings have identified the children either suffering or causing the highest levels of harm and drawn attention to the variables associated with missing incidents. Vulnerability factors such as exposure to child exploitation, DA and being under the care of the local authority are prevalent throughout. Demographics such as age and ethnicity have lower odds ratios than risk factors related to victimisation and criminality. The ethnicity of missing children is equally represented across frequency and victimisation categories based on national statistical data. When reviewing the genders, females are not only heavily victimised but suffer the greatest levels of harm, driven by sexual-related offences. While some risk factors did have a large odds ratio, the false positive rates were exceptionally high, suggesting that missing incidents cannot be predicted accurately using variables in isolation. It is of note that n=55 (5.3%) children were identified as suffering the most harm before going missing; however, of those children, n=33 (60%) do not feature in the missing 10 times or more category and were therefore potentially undetected and at significant risk. Children suffering the highest harm levels are concentrated in those aged 12–16 with a significant drop in incidents relating to 17-year-olds. The results produced several key areas for discussion. First, there is a strong concentration of missing events, second, there is a clear relationship between pre-victimisation and frequency. Third, there is a significant relationship between frequency and future harm and finally, there are critical gender differences in victimisation and offending. The next chapter will compare the findings with existing research and discuss the limitations and potential areas for further research.

## **Chapter 5: Discussion**

This chapter will focus on the key findings from the study, which aimed to understand whether the number of missing children episodes correlates with future harm and should therefore be a trigger for intervention. Results will be compared to the existing literature, commencing with the breakdown of the age, gender and frequency of missing children. The chapter will then examine each research question and explore which children suffered or caused significant harm. Finally, the strengths and limitations of the research will be considered in terms of how it could assist in replicating or extending further awareness of harm suffered or caused by missing children.

### **Missing Children by Age, Gender and Incidents**

The characteristics of missing children are now evident. It was uncovered that  $n=1,019$  children were reported missing over  $n=3,325$  occasions with a 60/40 split between the two boroughs, which was unsurprising as ONS (2015) data showed more children residing in Newham. Across the total sample, it could be seen that children residing in care and with a criminal record were more likely to be reported missing on multiple occasions, mirroring a study by Thomas and Ferguson (2022). Odds ratio analysis identified that children with a criminal record were 15 times more likely to go missing 10 times or more. It is important to note that while residing under the care of the local authority may not be the cause of going missing, this and previous studies have identified it as a risk factor for repeat missing children (Babuta & Sidebottom, 2018; Bezczky & Wilkins, 2022; Hutchings et al., 2019).

The findings revealed that children aged 12–14 represented the largest cohort of missing episodes, which is consistent with previous research (Newiss, 1999; Shalev-Greene & Alyes, 2016; Vo, 2015). This age group represented 55% of all missing incidents in 2014, almost double the proportion found in recent data published by the MPS (2023) at 29.3%.

Further comparison with MPS (2023) data suggests this picture has changed significantly over time, with those aged 15–17 now representing the largest group (68.3%) compared to 43.5% in this study. This supports claims that missing children aged 16 and 17 have been historically underreported, particularly those in care (Bezczky & Wilkins, 2022; The Children’s Society, 2019). The numbers of male and female children reported missing made up 53% and 47% respectively, similar to findings by Catney (2018) and Johnson (2021). The high proportion of females reported in the 10 or more category (63%) is supported by Biehal et al. (2003), who reported a 72% to 28% split between females and males.

The findings uncovered a strong concentration of missing events, with children reported 10 or more times being responsible for almost half of the total missing incidents. Furthermore, only 7.6% (n=78) of children made up this category and 36% were identified as going missing more than once. This is comparable to Sidebottom et al. (2019), who recorded that 4% of individuals accounted for one-third of total incidents, although they reported higher levels of repeat missing at 75%. Bezczky and Wilkins (2022) similarly found that 39% of children reported missing more than once accounted for 82% of all missing incidents, compared to 80% in this study. The results of this study are consistent with the power few concept (Sherman, 2007). Overall, it can be seen that a small but significant number of children go missing on multiple occasions, with one child as many as 100 occasions, which closely resonates with recent studies that discuss the power few children (Babuta & Sidebottom, 2020; Ferguson, 2022). The frequency of missing children adds further weight to the argument that police should potentially target limited resources to the greatest potential effect by focusing on the power few children; however, it does not examine the temporal relationship between crime, harm and being reported missing. The research confirms that going missing is a concentrated phenomenon that exposes a relatively small number of children to significant risk and trauma.

The next section will discuss the proximal nature of victimisation and crime perpetration among children reported missing.

### **Pre-missing Harm**

It has been identified that childhood harm tends to precede missing events. Much of the research regarding missing children has focused on what happens to the child when missing and not before. As a result, it is unclear what definitions and measurements each researcher has used to classify harm, which makes direct comparisons challenging. The results of this study revealed two clear findings: firstly, a relationship exists between pre-victimisation and frequency and secondly, critical gender differences exist in pre-harm rates. Females are overrepresented in both the 10 or more incidents (67.3%) and the two to nine incidents (62%) categories. In reviewing pre-victimisation with a large secondary dataset, n=226 children were found to have suffered harm at some level, representing 22.1% of the full sample. These findings support the assertion by Bellis et al. (2015) that children who suffer from ACEs are highly likely to be reported missing in the future. Several risk factors were identified as correlating with pre-victimisation and high levels of repeat missing incidents, with residing in care, exposure to child exploitation and DA significantly associated. When the pre-victimisation concept was tested against the CCHI, it was revealed that children missing 10 times or more had significantly higher CCHI average scores than those missing either once or on two to nine occasions.

Being female is a risk factor, as observed by Thomas and Ferguson (2022). A chi-square test showed a significant association between being female, missing 10 or more times and suffering pre-victimisation. Being in the 15–17 female age group was further highlighted as a significant risk factor as it recorded the highest accumulative CCHI totals. Although it is worth noting that the 16-year-old female reported missing on 100 occasions in 2014 had no record of

any pre-victimisation on the MPS systems, that is not to say she was not victimised. There are examples of males suffering high levels of pre-victimisation in all categories; however, females exclusively suffered by volume of offending and at the hands of higher levels of criminality in each category. These results support the literature suggesting that pre-victimisation in missing children is overlooked (Hayden & Goodship, 2015; Hutchings et al., 2019; Shalev, 2011) and add to the argument that a holistic picture of a child's history would provide increased opportunities to assess their current and future risks.

While the odds ratio identified children who suffered pre-victimisation with CCHI scores of 730 or lower as almost three times more likely to go missing 10 times or more, children with pre-victimisation CCHI scores of 730 or higher were almost 11 times more likely to go missing 10 times or more. Further research will assist in creating a predictive model rather than this single-factor analysis. Nonetheless, there are significant findings that could be applied with immediate effect in missing children's investigations. When a child is reported missing, not only will employing CCHI help identify levels of pre-victimisation and trauma but it will also assist with decision-making when risk grading. Officers assigned to investigate missing children could also match risk characteristics to the most appropriate local authority departments and third-sector services to support children's emotional and social needs. Although untested as an intervention strategy, ensuring officers understand what trauma children have experienced before going missing and providing them with a list of support services will only increase empathy and compassion. This is an approach that could be implemented with minimal financial and resource investment.

### **Future Harm**

The results exposed two key findings based on multiple missing events correlating with future harm. Firstly, an important relationship between missing frequency and future harm was

established and secondly, it was determined that there are critical gender differences in future victimisation. It was observed that 15.1% (n=154) of the total sample suffered harm within five years following the index missing episode. This figure was slightly lower than the one reported by Catney (2018), who documented that 22.6% of individuals suffered harm within 12 months, but significantly higher than outcomes measured by the Missing Persons Bureau (2017) and Talbot (2018), who reported that only 4% of missing individuals were harmed. On closer examination, almost 60% of the 10 or more cohort went on to be victimised compared to 30% of the two to nine group who suffered future harm. Those missing only once were recorded as experiencing harm in only 3.2% of cases. Therefore, a clear correlation between the groups can be observed. Gender differences were analysed and a significant correlation was observed between being a female and suffering harm. This aligns with Catney's (2018) findings but contradicts Talbot's (2018) assertion that males were significantly more likely to experience harm. This study not only observed that females are more than three times more likely to be victims of crime but they suffer significantly more harm than their male peers. Another important finding established that being a victim before going missing made a child more than four times more likely to become a victim after going missing.

When further broken down by age, 52% were 15–17 years old compared to 41.5% who were 12–14, matching findings by Bezczky and Wilkins (2022), who identified that children older than 14 were more likely to experience harm, albeit while missing. Talbot (2018) argued for further research into missing adults on the basis that more adults (53%) suffer harm than children (47%). However, on closer examination, it can be seen that females under the age of 18 represented the highest harm group. Any research into missing people should be commended; however, based on combined observations, it may be erroneous. Females in the 15–17 age group were the most victimised; however, it can be seen that females aged 12–14 who went missing two to nine times accumulated the highest total CCHI score, although their



average was lower than the female 10 or more cohort. The average CCHI score was highest among males who went missing between two and nine times due to one male child suffering extreme levels of sexual abuse. Odds ratio analysis also identified children with a criminal record as more than three times more likely to suffer post-victimisation if reported missing and children exposed to child exploitation were two and a half times more likely.

Some children who suffer significant levels of post-victimisation are not among those most frequently reported missing. The next step was to analyse children who scored 730 or higher in the CCHI to identify potential risk factors. Two significantly revealing findings were uncovered. Firstly 60% (n=33) of children were in the two to nine group compared to 40% (n=22) in the 10 or more category, which suggests that focusing solely on frequency misses the bulk of the children who experience the greatest harm. Secondly, females made up 81% (n=45) of the cohort. A significant association was established between being female and suffering high levels of harm, which concurs with findings by Thomas and Ferguson (2022), creating a small group of children where efforts could be concentrated to safeguard and offer trauma support due to the life-changing levels of harm suffered. When risk factors were analysed, four were found to have a significant association with CCHI scores of 730 or higher. Exposure to child exploitation was the top risk factor, supporting research by Daniels (2018), who drew connections between missing incidents and child exploitation. This research suggests that missing incidents are unlikely to be random in the sense that most are preceded by harm. An immediate coordinated police and third-sector response is required to protect and address the long-term needs of children exposed to child exploitation. The next three risk factors with a significant and positive association were being female, residing under the care of the local authority and having a criminal record, all strongly linked to child vulnerability (Hirschel & Lab, 1988; Hutchings et al., 2019).

## **Future Perpetration**

Similarly, future offending correlated with high levels of missing episodes. The findings uncovered critical gender differences in offending consistent with the findings of Johnson (2021) and Talbot (2018), who identified males as the most significant contributors. Males were found to be more criminally involved, not only attracting substantially more criminal charges but for more serious offences than the females in the sample. In contrast, females had significantly more pre-victimisation and post-victimisation incidents recorded before going missing and across the following five years, with recorded rates much higher than the level of criminal involvement overall.

In total, n=129 children (12.7%) were accused of committing a criminal offence, with two-thirds of males (66.8%) responsible for the total number. Males in the 15–17 and 12–14 age groups both featured heavily, with 34.9% and 31.1%, respectively. A significant association was observed between being male and offending after being reported missing. It was interesting to observe through odds ratio analysis that children who commit criminal offences are 13 times more likely to go missing 10 or more times and three times more likely to be future victims of crime, which supports the victim–offender overlap theory (Shalev, 2011; Van Gelder, 2015). When CCHI scores were analysed, it further exposed the gender difference, with males having the highest perpetrator levels at 86.9% of CCHI totals. Males in the two to nine (43.8%) and 10 or more groups (32.3%) were also significantly represented. High CCHI scores were driven by offending related to drug supply and serious assaults; however, robbery was the most common offence observed. These findings are comparable to a study of young robbery offenders in London, which revealed that 63% had previously been reported missing (Hilder et al., 2021).

The results of this study confirm that children residing under the care of the local authority tend to go missing more frequently; however, no statistical correlation was observed

between a child's place of residence and offending. This finding was also observed by Shalev (2011), who quantified that children in care are typically reported missing more often and consequently have more police encounters. In addition, the involvement of children in criminal offending, particularly those recording high levels relating to the CCHI, also illustrates the path children take after being reported missing. Offending, which involves high levels of aggression, as in cases such as assault and robbery, may be indicative of the child's emotional state and emphasises the need to allocate resources such as trauma-informed counselling and well-being support upon their return.

### **Strengths and Limitations**

The objective of this study was accomplished through the analysis of a substantial secondary dataset comprised of records relating to missing children between 1 January 2014 and 31 December 2014, complemented by offending and victimisation records. This approach mitigated the setbacks experienced by Tarling and Burrows (2004), whose low sample size prevented sufficient analysis, leading to the conclusion that professional judgement was the only reasonable response to missing individuals. To answer the research questions, this study combined elements of several studies since there was no prior research to replicate. From the work of Catney (2018) and Bitters (2021), this study replicated the descriptive analysis to identify missing children who are likely to suffer the greatest harm while employing statistical testing, effect size analysis, odds ratios and false positive rates (Spiegelhalter, 2019).

The year 2014 provided a five-year follow-up period, meaning that risks posed to each missing child had the potential to be addressed by either the police, social care or the community – something that would need to be considered if contemplating a forward-facing study. Despite the large dataset, the material obtained was not initially intended for missing children's research and data controls that would have supplemented a forward-facing study

would have ensured all datasets were accurate. For example, data regarding the length of time a child was missing and when they returned were omitted due to data collection gaps. It is possible that some duplicate records exist in the dataset regardless of the use of unique identification numbers for each child. In addition, each record was manually reviewed, crosschecked for crime data and subsequently recorded in an Excel spreadsheet. Although every care was taken, any incorrect data entry had the potential to change the outcome. In the given period, an HMIC (2014) report concluded that UK policing had a crime data integrity issue, with one in five crimes not being recorded. It is also plausible that some children withheld abuse or victimisation, leading to under-reporting.

The data utilised in the study was limited to MPS records, posing two limitations. Firstly, current MPS systems do not capture records of children who have transited to or from other force areas. The fact that the vast number of missing children reported no victimisation only means that there is no recorded data within the MPS area. Secondly, both local authorities hold substantial data regarding missing children; however, the sheer volume of the data and the ability to access it were beyond the reach of this study. The inclusion of further variables would only strengthen the findings and enhance its external validity. Although odds ratios and false positive rates were explored, this study does not include a cost-benefit analysis to justify the idea of focusing on certain variables associated with missing children rather than the frequency of missing incidents. How the MPS interacts with missing children is evolving, and the introduction of a digital interface (Connect) will give officers faster access to better information and intelligence, posing the question of whether some of the indicators will still be appropriate in the future and what other factors might come into play. This study was unable to incorporate vast amounts of qualitative information relating to the children, such as safeguarding audits and serious case reviews, as these are difficult to access. Similarly, incorporating intelligence

reports would be valuable in identifying those at risk of child exploitation and future research would benefit from combining quantitative and qualitative data.

### **Policy Implications**

Notwithstanding the limitations, the robust research design yielded evidence-based findings based on a large dataset obtained from the largest police force in the UK. While further replication is required to ensure external validity, the results from this study offer a solid basis for future research. Due to the MPS's current use of CRIS and Merlin, systems not employed by other UK police forces but sharing a similar design, the results obtained will withstand external validity and can be applied across the UK. Nonetheless, a pre-mortem would be advised before any implementation to determine if the variables associated with harmful outcomes retain their association when applied to a different part of the country (O'Connor, 2022). The unearthing of statistical significance in some variables is encouraging and can establish which categories best align with the definition of vulnerability, such as child exploitation and DA, which provide the largest number of significant associations with missing children. The research has also presented the opportunity to identify data quality issues and make recommendations to the commander for public protection within the MPS. This includes reconsidering the approach to missing children by integrating the association between potentially predictive characteristics and the harm sustained beyond a missing episode.

Data quality issues were identified, preventing the ability to explore previous research, which looked at harm suffered while reported missing. A richer and more reliable dataset including more variables, such as education status, pre-existing medical conditions and socioeconomic background, would offer opportunities to expand the research. An implementation plan is advised to ensure improved standards for recording, as this would allow for the inclusion of additional variables in subsequent research. New IT infrastructures

(Connect) and a central vulnerability hub will play a significant role in shaping how information relating to missing children within the MPS is recorded and used. The identification of risk factors associated with missing children and future harm will assist officers and staff in prioritising and targeting preventive intervention strategies designed to reduce and ultimately prevent harm. Taking into account the implementation of any strategy, those responsible should ensure they are clear about the aim and objectives of any proposed plans, as the variables observed to be associated with the three missing categories were in varying proportions, with some significant in correlating future harm and others not.

Odds ratios and p-values were analysed for each of the variables to assist with the interpretation of the scale and the immediacy with which the results could be applied to missing children's investigations. Next, chi-square tests were examined for high-risk factors, which identified several significant associations, although high false positive rates suggested that accurately predicting missing children's future risk cannot be completed solely through bivariate data analysis. Variables observed to have significant positive associations with both offending and future harm were featured consistently in the upper quartile of odds ratio analysis. Frequency of missing is a significant indicator of both future harm and offending; however, failure to use a crime harm index to score previous harm and overlay with risk factors will see extremely vulnerable children being overlooked and opportunities to safeguard them being missed. The false positive rates and odds ratio outcomes within this study must be considered when implementing an intervention strategy to prevent precious police and partner agency resources from being misdirected. Any strategies to investigate the causation and subsequent investigation into missing children must consider the effectiveness and cost-benefit of any interventions proposed in light of their potential failure and success rates. This research has suggested that policies relating to missing children should be reviewed based on the

observations made, and interim actions implemented to safeguard some of the most high-risk missing children, pending further analysis.

## **Intervention**

There is an overwhelming amount of ill-defined data around each individual child and children in general, almost too much to digest and act upon. The extreme prevalence of missing children incidents offers a clear opportunity for routine, systemic intervention at a deliverable level, with a measurable impact on a critical group. This approach allows for a targeted focus within an area of significant complexity. Some children suffer significant harm yet do not go missing (Javier et al., 2019); however, children who frequently go missing and suffer harm are in a much smaller cohort and the correlation is clearer. It is this position that makes it possible to construct a regime of intervention. When a child is recovered, they must be provided with the opportunity to speak with a healthcare professional and not just a police officer to help understand the trauma they have suffered. Frequently missing children who suffer the highest levels of harm should be referred for clinical assessment, including mental health diagnosis and CBT, an opportunity currently denied to many children (Hughes et al., 2017). A growing body of research supports the use of CBT to treat a wide range of adverse childhood experiences (Chandan et al., 2020; Cronholm et al., 2015; Fox et al., 2015). This research has shown that the use of data relating to both frequency and pre-victimisation supports the ability to decide which children need immediate support. Police departments and their partners have finite resources; however, regularly recalculating data will allow the children at the highest risk to receive the required support, with the ultimate aim of reducing the number of missing episodes.

## **Future Research**

The research has shown the association between several individual risk factors and harmful outcomes; however, it must be noted that these variables do not occur in isolation and are represented in different combinations and categories for the different levels of harm observed. Van Gelder et al. (2015) argued that combining particular characteristics can correctly determine victimisation harm levels. Therefore, it could be suggested that future research employ multivariate analysis to enhance the data's predictive power, with the ultimate aim of creating a predictive model that amalgamates all characteristics to identify those children at the greatest risk of harm and support decision-making concerning those children. While earlier interventions will have cost implications, the additional costs can be offset by reducing the harm caused to children through victimisation and the subsequent investigative costs. This should only increase the appeal of this approach to police and stakeholders seeking to prevent harm before it occurs.

As the research was focused on missing children in North East London, it is recommended that further studies be replicated elsewhere in the UK for comparison and to inform wider decision-making. Apart from addressing some of the cost–benefit arguments made by police relating to missing children (Shalev Greene & Pakes, 2013), these findings also showcase the need to work with stakeholders outside the current professional silos in a multi-agency setting to address adverse childhood experiences through trauma-led therapy (Chandan et al., 2020; Felitti et al., 1998). Recommendations for this type of approach between police, health and social care are not new (Newiss, 1999).



## **Chapter 6: Conclusion**

Incidents relating to missing children can cause even the most seasoned officers to forego existing obligations to assist; however, their responses and attitudes can sometimes vary based on the nature of the case. Officers might reasonably feel exasperated on occasion when investigating missing children, with children who have been reported missing multiple times in a week, for example, inviting a somewhat less sympathetic response. Understanding what makes children go missing is complex, and the resulting trauma often goes undetected. There is little disagreement regarding the necessity for police forces to be able to assess the level of harm that missing children may face and determine the appropriate level of police and partner response. The investigation and safeguarding of missing children are national priorities for policing and government. In light of this, the purpose of this research was to understand which children suffer and/or cause harm following a missing episode and identify what data available in police systems is indicative of future harm. Building on previous studies that have identified harm suffered while missing, this thesis focuses on the characteristics of children who suffered harm, caused harm or committed a criminal offence in the 1,825-day period following an initial missing report.

The research provided valuable insight into the characteristics of missing children within the London boroughs of Newham and Waltham Forest and the subsequent levels of harm either suffered or caused. Almost one-quarter of all children were observed to have suffered pre-victimisation before being reported missing in 2014. The research identified the children who either suffered harm post-missing or went on to offend, with significantly higher proportions identified than in previous studies. Analysing the data from a frequency perspective showed that a small cohort of children were responsible for almost half the missing incidents, providing an immediate opportunity to focus on a manageable power few children. This shows a strong concentration of missing events. The characteristics and proportions of those children

suffering harm pre-missing and post-missing varied at each level, with females suffering from the highest levels of harm in every category. Females between 15 and 17 years of age were identified as a risk group in the pre-missing, post-missing and high harm categories, suffering the greatest harm rate. A relationship between pre-victimisation and frequency was observed, with females in the 10 or more missing incidents category suffering the highest CCHI scores. Similarly, an important association between frequency and future harm was also observed, where females in the 10 or more category suffered the highest CCHI scores, supporting observations in previous research. Males aged 15–17 were the most prevalent offenders post-missing, mirroring Youth Justice statistics. This emphasises the critical gender differences between victimisation and offending.

This study employed a distinct and relevant methodology to quantify the harm suffered or caused by missing children in order to correlate future harm by using the CCHI and exploring the power of existing data relating to missing incidents and crime records. Protecting children from harm is not just a policing priority but also a societal one, with a shortage of research exploring the potential to predict which missing children will come to harm, thus enabling evidence-based targeting decisions. The correlation between risk factors varied between the observed outcomes, but a strong trend was noted that pre-victimisation was indicative of further victimisation. Furthermore, exposure to child exploitation, previous criminal offending and residing under the care of the local authority were all closely associated with future harm. In shining a light on the harm missing children experience and the potential for prediction among the resource-intensive power few, this research has laid the foundations for further predictive analysis to support decision-making by exploring how the predictive power of the variables changes when applied to specific demographic risk groups, such as the male 15–17 (offending) and the female (victimisation) 15–17 groups.

This study has explored a small percentage of what could be achieved in the quest to correlate and predict future harm in missing children. In the absence of a current process or application, analytical tests were conducted using variables to assess their ability to identify why children suffer harm after going missing. It was discovered that children can easily be placed into risk categories based on frequency, gender and age at the point when a test would be applied. Further research is required to fully understand the predictive power and correlation of variables and risk categories in combinations and proportions, particularly for groups such as females aged 15–17, who suffer the greatest harm. The creation of a pioneering predictive model would ensure levels of false negative and false positive predictions could be adjusted to acceptable levels of risk, which the MPS commander for public protection would be willing to accept. The MPS systems used in this study offer a high level of external validity to the research. Although many other UK police forces use other data systems, such as Niche RMS, the recording principles are the same, allowing for large datasets relating to missing children to be obtained. Similarly, the data analysis methods applied are extensively used and simple to replicate. Ultimately, this study has reinforced the ongoing need to identify and support children before they become chronic cases and are viewed as a drain on police resources, thus reducing their chances of further missing episodes and changing their life trajectory for the better.

## Appendices

Appendix 1: Table of potential variables  
40 variables

Factors	Search
Gender Female	Merlin
Gender Male	Merlin
White North European	Merlin
White South European	Merlin
Black	Merlin
Asian	Merlin
South-East Asian	Merlin
Arabic	Merlin
Under 12 months old	Merlin
1 year old	Merlin
2 years old	Merlin
3 years old	Merlin
4 years old	Merlin
5 years old	Merlin
6 years old	Merlin
7 years old	Merlin
8 years old	Merlin
9 years old	Merlin
10 years old	Merlin
11 years old	Merlin
12 years old	Merlin
13 years old	Merlin
14 years old	Merlin
15 years old	Merlin
16 years old	Merlin
17 years old	Merlin
Resides under local authority care	Merlin
Does not reside under local authority care	Merlin
Exposure to domestic abuse present	Cris - Victim
No record of exposure to domestic abuse	Cris - Victim
Child exploitation investigation present	Cris - Victim
No record of a child exploitation investigation	Cris - Victim
Criminal record present	Merlin
No record of criminal record	Merlin
Pre-victimisation	Cris - Victim
No record of pre-victimisation	Cris - Victim
Offending within 1,825 days after going missing	Cris - Accused
No record of offending within 1,825 days after going missing	Cris - Accused
Victim of crime within 1,825 days after going missing	Cris - Victim
No record of victimisation within 1,825 days after going missing	Cris - Victim

### 6 Calculated Variables

Did the child suffer pre-victimisation harm at any level?	Cris - Victim
Did the child suffer pre-victimisation harm $\geq 730$ ?	Cris - Victim
Did the child suffer post-victimisation harm at any level?	Cris - Victim
Did the child suffer post-victimisation harm $\geq 730$ ?	Cris - Victim
Did the child cause harm at any level? (Offending)	Cris - Accused
Did the child cause harm $\geq 730$ ? (Offending)	Cris - Accused

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