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RESEARCH ARTICLE OPEN ACCESS

Overkill and Antemortem Facial Injuries in U.S. Transgender and Gender Non-Conforming Homicides (2013–2023)

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ABSTRACT

This exploratory study examines 298 homicides of US transgender and gender non-conforming victims from 1st January 2013–1st January 2023. Using content analysis and triangulation of data from open-source news reports along with official data sources (i.e., government reports, police reports, post-mortem reports, etc.) victimology and forensic themes within these homicides were identified and examined. Notably, overkill occurred in over 8% of the overall homicide sample studied with antemortem injury locations centralised to the face (79.17%). Overlapping weapon usage were as follows for studied overkill cases: stabbing wounds ($n = 11$); blunt force injuries ($n = 10$); and gunshot wounds ($n = 3$). The results from this study highlight unique investigative themes for forensic consideration in transgender and gender non-conforming homicides when facial injuries are apparent.

1 | Introduction

Brightman et al. (2023) previously highlighted how there exists no state or US federal databases that examine the extent or details regarding the extent of violence towards transgender individuals. For example, in 2015 the FBI stated that the occurrence of transgender homicides could be 40 times higher than what is formally reported in national statistics (see Momen and Dilks 2021). Therefore, several non-profit organisations have collected and continue to collect data regarding transgender and gender non-conforming homicides. For instance, the Human Rights Campaign (2021) collected data on these crimes from January 2013 to December 2021 ($n = 256$) and found that 77% of homicide victims in these cases were transgender women of colour. Representatively previous recent studies (see: DeJong et al. 2021; Dinno 2017; Lantz et al. 2024; Momen and Dilks 2021; Panter 2023; Teal 2015) have already indicated that Black

transgender and gender non-conforming people are more likely to be victims of homicide. Further, Black trans women (27%) are more likely to be killed by a stranger than other transgender people (10%) (Momen and Dilks 2021). To provide further context, young Black transgender women have a one in 2600 chance of being murdered, compared to one in 12,000 for the young cisgender population (Talusán 2016). Or, as Dinno (2017) pointed out, Black transgender women face a homicide risk of 95.1 out of a population of 100,000 compared to Black cisgender women facing a risk of 40.9 out of a population of 100,000.

Historically, Teal (2015) highlighted that Black transgender women are more likely to be killed with higher levels of extreme violence. Notably extreme violence and overkill has been discussed in literature as a homicide theme across transgender and gender non-conforming victims (see Williams 2009; Gruenewald 2012). Williams (2009) examined 130 US homicides from

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1995 to 2008 using content analysis of media portrayals and found that overkill occurred in 38.46% of the sample of gender non-confirming victims. Teal (2015), also using content analysis of 259 US transgender and gender non-confirming individuals between 1995 and 2014, found that Black transgender individuals are more likely to be killed with a higher chance of overkill (47%) than Latino/Latina transgender individuals (23%) and White transgender individuals (12%).

More recently, academics (see DeJong et al. 2021; Brightman et al. 2023; Lantz et al. 2024; Westbrook 2022) have stressed the urgent need for further relevant studies to better understand ongoing violence levels against transgender and gender non-confirming communities, particularly for Black transgender women. To answer this call, and within this context of increased victim risk and increased violence in offending, researchers have drawn upon transgender homicide media reports to identify themes in victimological stigmas (see Avalos 2024; Avalos et al. 2023; DeJong et al. 2021) and the role intersectionality has in homicide case outcomes (see Momen and Dilks 2024). As Lantz et al. (2024) points out, understanding the descriptive accounts regarding the nature and on-going themes in these homicides can aid in policy responses and, arguably, improvements in police practice. While this study intends to aid in a better understanding of investigative considerations in these cases, the central focus of this study is to thematically examine crime scene actions of the offender(s). Therefore, the main aim of this study is to identify (1) offender crime scene actions in transgender homicides; (2) and injury themes present in overkill cases specifically and what this forensically may mean for police practitioners, with implications for case outcomes. In doing so, this study examines basic forensic trends within and across cases, which intends to aid in assisting homicide investigative practitioners (i.e. crime scene technicians, investigators and homicide detectives) in their investigative mindset approach to similar crime scenes or offences.

2 | Review of Relevant Literature

2.1 | Current Research on US Transgender Homicides

Lantz et al. (2024) found that transgender homicides have increased over 11 years examined (2010–2021), which is similar to other studies (see: Statista 2025; Everytown for Gun Safety 2024) up to the year 2021 then a decrease occurs in cases after 2021 (Statista 2025; Everytown for Gun Safety 2024). However, the timing between 2010 and 2021 also coincides with an upswing in anti-trans legislation in several states (Human Rights Campaign 2021), which may further hinder accurate reporting and increase the dark figure of crime associated with murder against trans persons (see also Biderman and Reiss 1967; Skogan 1977; and Pezzella et al. (2019) for discussions of dark figure of crime impacts).

DeJong et al. (2021), in a mixed-methods study of open-source media coverage of transgender homicides that occurred in 2018 which focused on victim identity portrayal, found that victims ranged in age from 18 to 54. These findings are generally consistent with the age range seen by Avalos et al. (2023) in their news

media mixed methods examination of terminology surrounding the narrative of gender non-confirming homicides in the US to selected gender non-confirming victims killed between 2012 and 2022 (16–51; $\mu = 27$). Avalos' subsequent study had a slightly older sample among both trans men (21–59; $\mu = 29$) and trans women (21–45; $\mu = 31$).

Consistently, the victims identified in all studies considered in the review of literature were predominantly Black, with Avalos et al. (2023) having an equal representation of White victims as well as 18% Native American victims in their sample (Avalos 2024; Avalos et al. 2023; DeJong et al. 2021; Everytown for Gun Safety 2024; HRC Foundation 2024; Lantz et al. 2024). DeJong and colleagues also included Hispanic victims (11.5%), a smaller percentage of White victims (7.7%); and victims of 'unknown ethnicity (3.9%)'. However, in their subsequent research, Avalos (2024) found differing percentages of ethnic identities of victims when comparing trans men and trans women. Avalos' (2024) trans male sample was 33% Black, 53% White, 13% Latino, while their trans female sample was 73% Black, 7% White, 13% Latina and 7% unknown. Additionally, trans women comprised the majority of DeJong et al. 's (2021) sample (96.2%) and Black trans women were identified as the most common victims by the Human Rights Campaign (HRC Foundation 2024) Everytown for Gun Safety (2024) and Lantz et al. (2024).

Further, studies have indicated that the most common mechanism of death for U.S. transgender victims is gunshot wounds (Avalos 2024; Avalos et al. 2023; DeJong et al. 2021; Everytown for Gun Safety 2024; HRC Foundation 2024; Lantz et al. 2024). For example, in Avalos' (2024) sample approximately 70% of trans men and 60% of trans women died as a result of gunshot wounds. When examining these studies further, the second most common mechanism of death was stabbing injuries (Avalos 2024; Avalos et al. 2023; DeJong et al. 2021; Everytown for Gun Safety 2024; HRC Foundation 2024; Lantz et al. 2024). Avalos et al. (2023) reported 18%, DeJong et al. (2021) found 11.5% and Lantz et al. (2024) found that 20% of their sample had been stabbed. Examining this further, Avalos' (2024) found that 7% of trans men and 13% of trans women had been stabbed in their samples. There were small variances between study samples regarding the occurrence of asphyxia as a mechanism of death with Avalos et al. (2023) at 6%, Lantz et al. (2024) and DeJong et al. (2021) at 3.9%. Notably there were only two studies (Avalos 2024; Lantz et al. 2024) which examined blunt force trauma injuries. Avalos (2024) found blunt force injuries occurring 13% among their trans men sample and 7% among trans women sample with Lantz et al. (2024) finding the overall occurrence of blunt force injuries as a mechanism of death at approximately 10%. Avalos (2024) also included undetermined (13%) mechanisms of death, while Lantz et al. (2024) indicated that 4.3% of their sample had been burned. Lantz et al. (2024) also identified a '...clear pattern of overkill' (p. 354) with 34 homicides having two or more mechanisms of death-11.15% of the sample. Lantz et al. (2024) highlighted that young transgender women of colour face a higher risk of overkill, yet Lantz et al. (2024) encouraged more analysis of the locations of these overkill injuries should be conducted in future studies.

Both Everytown for Gun Safety (2024) and HRC Foundation (2024) noted that transgender persons are more likely to be

killed by someone they know and that one third of their sample had experienced housing insecurity or homelessness (Everytown for Gun Safety 2024), highlighting additional risk factors and vulnerabilities. Only one study considered the location of these homicides, where 30.8% occurred on a highway/street/intersection/sidewalk; 29.5% in a residence; 9.6% in a vehicle; 5.6% in a parking lot/garage; 5.3% in a hotel/motel; and 19.2% occurring in an 'other location' (Lantz et al. 2024).

Some areas of concern highlighted by DeJong et al. (2021) included misgendering/deadnaming victims (10.6%), which appeared more prevalently in the Human Rights Campaign data (28%) and suggestion of victim engagement in criminal behaviour (drug use 4.1%, sex work 8.7% with survival sex work noted in 1.7% of cases). The HRC Foundation noted that vulnerabilities associated with trans identities, such as unemployment, poverty, homelessness and survival sex work, can increase victim's vulnerability and risk of experiencing both lethal and non-lethal violence. While these may be seen as negative portrayals of transgender victims, DeJong et al. (2021) found more positive frames in how victims within their 2018 sample were portrayed in media reports, yet they stressed the importance of narrative control by media and police to avoid victim-blaming, devaluation, and dehumanisation regarding victimology in future homicides. As the importance of narrative control was suggested by DeJong et al. (2021), Avalos et al. (2023) found victim blaming occurred only 12% of the time in media narratives with 55% of media sources citing police sources. Furthering their original study (see: Avalos et al. 2023), Avalos (2024) found trans men were much more likely to be delegitimised than trans women with the victimology presented.

2.2 | Overkill Injuries

The definition of overkill varies throughout literature and faces definitional issues (see Chopin and Beauregard 2021; Georgoulis et al. 2023; Kopacz et al. 2022; Solarino et al. 2019; Trojan et al. 2019). Often the ambiguity of the definition fails to establish limits of what is classified as overkill (see Kopacz et al. 2022) due to a lack of established boundaries between which wounds are simply needed to kill the victim versus how the infliction of wounds are beyond what results in death (Trojan et al. 2019). Regardless, forensic researchers (see Chopin and Beauregard 2021; Gentile et al. 2020) have stressed that overkill research should examine the number of injuries, the localization and distribution of the injuries, trauma morphology and the type of weapon(s) used to inflict injuries both qualitatively and quantitatively to better understand the phenomenon (Karakasi et al. 2022).

Karakasi et al. (2021) examined 158 Greek autopsy reports over a 15-year period where overkill occurred to examine forensic trends, characteristics of the victims and socio-cultural factors. Overkill inclusion criteria for Karakasi et al.'s (2021) study included three or more bodily injuries inflicted by different weapons resulting in more than one fatal injury; and three or more fatal injuries inflicted by the same weapon. Karakasi et al. (2021) found trends in the mechanisms of death in their overkill sample: blunt force trauma (33.54%); sharp force

injuries (32.28%); and firearm injuries (24.05%). In respect to the localisation of overkill injuries in Karakasi et al.'s (2021) sample, 65.19% had head/facial injuries; 20.89% had neck injuries; 48.73% had injuries to the extremities; and 37.97% had torso injuries. Karakasi et al. (2021) also found that overkill victims were more likely to be older than average homicide victims in which the suspect had higher levels of physical strength. Karakasi et al. (2021) further found that cismen were equally overrepresented both as victims (3:1) and as perpetrators in overkill homicides.

In another autopsy study, Tavone et al. (2022) examined 71 overkill cases conducted by the Section of Legal Medicine of the University of Rome Tor Vergata from 1st January 2000 to 21st December 2020. Tavone et al. (2022) found that both the victims and the perpetrators shared common demographics (males between the ages of 20–50) with the most common motive for overkill being a result of futile disputes. Further, Tavone et al. (2022) found that on average overkill wounds via cold weapons¹ and blunt tools totalled to at least 18, and the wounds were localised to the chest and upper limbs regions which Tavone et al. (2022) theorised was a result of self-defence.

Similar to Karakasi et al. (2021) and Tavone et al. (2022), Kopacz et al. (2022) classified overkill as a type of homicide where the number of injuries were several times higher than the number of fatal injuries—that is injuries beyond what would cause death. Kopacz et al. (2022) examined 167 homicide cases in forensic Polish autopsies. Kopacz et al. (2022) classified the homicides into categories based upon injuries (e.g. number of injuries, type of injuries, location of injuries) and victimology characteristics (e.g. sex; age; blood alcohol levels, ability of the victim to fight back, etc.). Kopacz et al. (2022) found that ciswomen are much more likely to be victims of overkill when the ability to resist is minimal and when resisting was greater, cismen were much more likely to be victims. Kopacz et al. (2022) highlighted that a characteristic of overkill homicides was defensive wounds to the limbs (78.9%) comparatively to the control group (15.6%). Further, Kopacz et al. (2022) found a pattern of excessive violence directed head and face region in the overkill sample (68.4%) versus the control group (15.6%). When examining trends in overkill crime scenes, Kopacz et al. (2022) found that the homicide typically started with the victim sitting or lying down. Further, Kopacz et al. (2022) found 81.6% of the overkill sample involved body movement within the crime scene with 13.2% having postmortem injuries.

2.3 | Theoretical Explanations for Overkill Injuries: Interpersonal Dynamics

Extensive antemortem injuries to the face could arguably be interpreted as an expressive behaviour where the suspect focuses wounds due to the emotional meaning that the face reflects (Salfati and Canter 1999). Expressive homicides often involve an expressing of emotions typically associated with feelings of anger, failure and hatred to cause hurt and suffering (Salfati 2000). Or, that expressive homicides are characterised by impulsive and uncontrolled aggression (Thijssen and de Ruiter 2011). Trojan and Salfati (2010) concluded that overkill

homicides in general are expressive homicides which often involve suspects in a close relationship with their victim. Researchers (see e.g., Au and Beh 2011; Last and Fritzson 2005) have also suggested that the closer the relationship between a suspect and their victim, the more expressive the crime scene behaviours are with notably injuries to the face and neck regions. To provide further context, Trojan and Krull (2012) noted that in average homicides (i.e. no overkill present) victims who were intimates were 2.5 times as likely to have a facial wound compared with those who were non-intimates.

In addition to expressive explanations of overkill facial injuries, Hachtel et al. (2021) contended that homicidal motivation can be provoked through sexual desire, jealousy, monetary gain, conflicts/arguments, separation (one person separating from the relationship) and mental disorders (Rye and Angel 2019; Sea et al. 2018). While other researchers (see Alvarez Cussen 2017; Douglas et al. 2006; Salfati and Canter 1999) propose that overkill facial injuries maybe an act of depersonalisation (symbolic destruction of a person) (Alvarez Cussen 2017). Depersonalisation can also be a method to further objectify the victim out of shame (Salfati and Canter 1999) or connected to an expression of anger towards the victim (Ambade and Godbole 2006; Gill and Catanese 2002; Kamaluddin et al. 2018). Since the face is often perceived as the core representation of a person, symbolically the destruction of it arguably destroys identity (Alvarez Cussen 2017; Rainbow et al. 2022; Salfati and Dupont 2006).

Facial injury as a method to depersonalise the victim, either because of who they are or who they represent is a characteristic of some intimate relationship homicides (Au and Beh 2011; Stermac et al. 2001; Trojan and Krull 2012). Au and Beh (2011) found that using sharp force instruments (e.g., stabbing), offenders are more likely to injure the head, neck and face region of victims they are emotionally closer to. Further, Trojan and Krull (2012) found that wounds to the face occurred nearly twice as often to intimates than to other victims in their study of urban homicides. Yet, Salfati (2003) found that facial wounding often tends to occur with other crime scene behaviours aimed to specifically harm the victim (as opposed to a more instrumental motive) and typically indicates a greater level of reactive violence and/or an impulsive attack.

2.4 | Theoretical Explanations for Overkill Injuries: Gender and Sexuality Motivations

Notably, literature which has examined motivations in hate-related homicides where overkill was present indicates that gender and/or sexuality can be a key motivator of overkill violence. Tavone et al. (2022) in Italian homicides noted a prevalence of literature which associated overkill violence to victim sexuality and/or engaging in survival sex work. Parkin et al. (2015) found that ideological victims of extremist murders were chosen because of what they represent, rather than the interpersonal connections previous outlined in cisgender literature, with overkill featured in over 40% of their homeless and LGBT+ sample included in their study. This aligns with the findings of Pieterse et al. (2018) in their examination of South African hate motivated homicides. In their study, Pieterse

et al. (2018) noted that overkill is a manifestation of overt violence against a targeted group when symbolic violence no longer provides sufficient marginalisation or control and this overkill manifests as ‘...complete destruction of the victim’ (p. 39). Additionally, regarding physical attacks against gay men in the United States, Willis (2004) noted in their systematic review particularly brutal patterns of offence characteristics, which included overkill and excessive mutilation. When considered in conjunction with overkill violence and facial injuries in the cisgender population, previous literature connecting sexuality and/or gender with overkill violence suggests that LGBT+ victims may be representative (or expressive) and makes theoretical links for the crime scene behaviors demonstrated against transgender victims.

3 | Methods

The present study seeks to conduct an exploratory analysis of transgender homicides in the United States to examine investigative trends and themes seen within this often-overlooked victim population. As this is a small, but heavily victimised, community that is not well documented in current data sources (Federal Bureau of Investigation 2015; Wood et al. 2019), data were collected through open-source media articles via content analysis in conjunction with official document analysis. The data for the current study were collected in four distinct steps. To begin, criteria defining transgender homicides were established. For the purposes of this research, the criteria were as follows: the offender was a woman, acting alone; the offender was a man, acting alone; the offender(s) were acting as a group; the victims were described in sources as transgender and/or gender non-conforming; and the homicides occurred within the United States. There was a staged or tiered data collection process involved in this content analysis. First, we used a search period of 1 January 2013–1 January 2023. This time frame was chosen due to transgender homicides being subjected to heightened media interest due to recent marginally progressive improvements in the social acceptance of transgender identities (Panter 2023). During this time, regulatory policing bodies in the US began to actively encourage more local agencies to record aspects of transgender victimology from 2013 onwards (Panter 2023).

From this point, official homicide victimisation data from the FBI's Supplementary Homicide Report (SHR), the most used official data source for homicide data in the US, alongside yearly Uniformed Crime Reports (UCR), were used to guide the next steps in data collection. While it is understood that the National Incident-Based Reporting System (NIBRS) is considered to be a more detailed data collection that is taking over from the UCR, the only victim demographics compiled related to gender is sex, with operationalisation limited to male, female, unknown or unspecified (Federal Bureau of Investigation 2024). Anti-transgender and anti-gender non-conforming are categories for hate crimes included in NIBRS, but as this has only recently come into use compared to the time frame of this study, NIBRS was not considered as a data source in this study.

Initial online open-media reports were identified through using LexisNexis and NewsBank databases while also searching for all

news items published by online and print mainstream news outlets. Additionally, victims' names were searched on social media platforms (e.g. Facebook, Twitter, Instagram) alongside their obituary reports. Further relevant open-source material was initially identified by using a search string that contained the terms 'homicide', 'murder', 'LGBT' and 'transgender' alongside the state name/jurisdiction where the reported homicide occurred. This included information on transgender and gender non-conforming victims from print, news magazines, news, alongside other open-source data from LGBTQ+ research agencies (e.g. Transgender Europe's [TGEU] 'Transgender Respect Versus Transgenderphobia Worldwide' Project and 'Transgender Murder Monitoring Project'; Human Right's Campaign's [HRC] 'Annual Reports of Anti-Transgender Violence' projects) and other advocacy information agencies (e.g. Transgender Center for Transgender Equality, GLAAD; Trans Lives Matter 'Remember Our Dead Project').

This open-source information searching provided crucial missing details about the victims, the offenders and case specific information not currently recorded in official FBI crime reports, local police reports, prison reports (if a homicide conviction), court reports (if a homicide sentence) or coroner reports where injuries and causes of death were outlined. Yet, relying solely upon non-profit or trans rights activists' information regarding victimology and case specific details was limiting at times due to noticeable data inconsistencies. Therefore, we used official police, prison, court and coroner reports to triangulate any case specific information presented by said non-profits.

Data collected from published online open-source media reports of transgender homicides ($n = 27,151$) during this process was used to create a dataset of 298 individual homicides that included the following variables of interest for each case: victim's name, victim's self-identified transgender status, victimology concerns (e.g. occupations, risk factors, unique case specifics, etc.), how the media presented the victim's identity, how the police presented the victim's identity, date/location of the murder, where the body was recovered, date the homicide was discovered/body recovered, type of injury severity during homicide, type of weapon(s) used to commit homicide, number of suspect(s), number of arrest(s), number of conviction(s), current status of each case (i.e. solves/unsolved), homicide motive(s) and the victim's relationship to offender(s) (if applicable). Information was not included in the dataset unless it was found in at least two news articles. If conflicting information was provided, depending on the variable of interest and the number of sources, the most frequently used information was collected.

After collecting information from all open-sourced materials in combination with official source material, each homicide was attributed to a classification code from each source much like open-source guidelines provided by previous homicide researchers (see Parkin and Gruenewald 2017). Once this data was accumulated, we measured the frequency of each theme across the whole sample. By using a combination of open-source qualitative data alongside official sources of homicide data between 01 January 2013 and 01 January 2023, this allowed for this study to identify details that official sources did not provide

alone. Further, we found that relying solely upon unofficial data sources resulted in missing details, incorrect details, or overt bias in how the case dynamics were presented. This quasi mixed-method approach allowed for the creation of a finalised archival spreadsheet (see e.g., Mazur 2010) that highlighted specific case details. This is a similar process used by Hesse-Biber and Griffin (2013) in other homicide studies. Farrell et al. (2013) also used a similar approach in their analysis of female serial murderers. This approach has also been utilised by Canter and Wentink (2004), who noted that using a published material that is not created for the purposes of a particular research project means that biases likely to be minimised. However, Kraemer et al. (2004) suggested that reliance on popular media as a data source may result in inaccurate case details and oversampling of highly publicised cases. While some scholars may have reservations about utilising newspaper articles and other open-source documents in this type of research, it should be noted that this research is exploratory and that this methodological approach has been established in the field. The works of Canter et al. (2004), Canter and Wentink (2004) and Messing and Heeren (2004, 2008) can be used as examples of the use of media articles as a data source in both general research and serial homicide research, making this an accepted method for homicide research.

4 | Findings

4.1 | Victimology Demographics and Epidemiological Data of Homicides

When examining overall US transgender homicides from 1st January 2013 to 1st January 2023 ($n = 298$), there are some notes on victimology and case characteristics that should be considered holistically before overkill injuries can be examined. In respect to the descriptions of the victims' presented identity prior to death, 86.24% of victims were identified as a transgender woman; 5.70% as a transgender man; 3.35% as gender fluid, gender non-conforming, or femandrogynous; and 1.68% were identified as a cross-dresser who identified as gender non-conforming. When examining the ethnicity/race of the sample the results were:

The average age of transgender homicide victims was 26.31 years of age² with an age range of 16–66.

4.2 | Types of Antemortem Injuries in All Transgender and Gender Non-Conforming Homicides

When examining transgender antemortem injuries sustained by homicide victims, 196 (65.77%) received one or multiple gunshot wounds prior to death. In respect to stabbing with various instruments (e.g., knives, screwdrivers, ice picks, etc.), 50 (16.78%) victim's deaths involved some form of sharp force injury (i.e., puncture wounds; stab wounds; throat slashed, etc.) that was identified as a co-contributing cause of death. Four antemortem actions which resulted in death via 'strangulation'

occurred, 12 were 'beaten' or received fatal 'blunt force injuries', two were 'tortured to death' and two were 'dismembered'.

4.3 | Overkill: Transgender and Gender Non-Conforming Victimological Data

As previously stressed the definition subjectivity of overkill is obviously beyond the aims of this study, but consistent with other researchers (see Trojan et al. 2019) overkill for this study was defined as the infliction of multiple injuries (or multiple methods of death) far exceeding the extent needed to kill the victim. This study found that overkill occurred in 8.05% of 298 cases studied as highlighted in Table 1. Overlapping weapon usage were as follows for overkill cases: stabbing wounds ($n = 11$); blunt force injuries ($n = 10$); and gunshot wounds ($n = 3$) (see Table 1).

Referring to Table 1, trans women (83.33%/ $n = 20$) were much more statistically represented in the overkill homicide sample. In overkill homicides, Black trans women comprised of 62.5% ($n = 15$) of the overall sample. Comparatively other overkill demographics were as follows: Latina trans woman (8.33%/ $n = 2$); White trans woman (8.33%/ $n = 2$); Asian Trans woman (4.17%/ $n = 1$); Black trans man (4.17%/ $n = 1$); White Trans man (4.17%/ $n = 1$); Indigenous Two-Spirit (4.17%/ $n = 1$); and White non-binary (4.17%/ $n = 1$).

4.4 | Sex and Overkill Cases

Notably, when examining overkill homicide cases overall, 50% ($n = 12$) involved some element of sex (whether paid or casual) prior to murder. When examining cases involving overkill for this study, 20.83% were committed during the commission of paid survival sex work. In survival sex worker overkill cases, stabbing injuries occurred 80% of the time with various instruments with 1 case involving a combination of strangulation and blunt-force injuries (see Table 1).

4.5 | Overkill Facial Injuries

Overkill injury locations tended to be centralised to the facial/head area (79.17%/ $n = 19$) (see Figure 1). In the 24 overkill cases there were different types of overlapping injuries to the face/head which involved: sharp force injuries/stab wounds ($n = 9$), blunt force injuries ($n = 9$) and gunshot wounds ($n = 4$). The secondary overlapping overkill injury location was the torso region (70.83%/ $n = 17$) followed by the neck (16.67%/ $n = 4$), genitals (16.67%/ $n = 4$) and legs/arms (12.5%/ $n = 3$).

In respect to 19 overkill cases involving facial injuries, 63.16% ($n = 12$) of the sample were Black trans women (see Table 2):

While exploratory, the data presented demonstrate crime scene behaviours related to overkill, area of injury and victim demographics that may have relevant investigative implications that will be further contextualised and presented within the extant literature in discussion below.

5 | Discussion

This study found that in 20.83% of overkill cases, the murder was committed during the commission of paid survival sex work. Regarding survival sex work, Salfati et al. (2008) found that victims are viewed as second class citizens and violence levels towards them tends to be severe (Horan and Beauregard 2018). Survival sex work inherently involves extreme heightened levels of exposure to violence for transgender identities especially (see: Ganju and Saggurti 2017). Previous research has already explored how sex workers are less likely to have their disappearance reported (Horan and Beauregard 2018; Quinet 2007) and witnesses are less willing to share information with the police (Levi-Minzi and Shields 2007).

When examining overkill homicide cases further, 50% ($n = 12$) involved some element of sex (whether paid or casual) prior to murder. Plausible explanations for this phenomenon may exist due to preconceived socialised notions held towards women in general. Bettcher (2007) points out that there exists a widely held misconception in the US that transgender people are gender 'deceivers'. This may also be related to previous literature discussing overkill in the context of hate-related murders (Parkin et al. 2015; Pieterse et al. 2018; Tavone et al. 2022; Willis 2004). Schilt and Westbrook (2009) highlighted that this perception is more evident in sexual situations where trans people are perceived as trying to 'trick' heterosexuals into an LGBT+ encounter (Westbrook 2022). Westbrook (2022) stated '...heterosexually identified cisgender men sometimes respond to the "discovery" that their actual or potential partner is transgender by attempting to recuperate their claims to masculinity and heterosexuality by doing violence' (p. 8). Lyons et al. (2015) stated these attacks may be the result of shame about their own desire and beliefs (in Westbrook 2022).

Within the overkill sample of this study specifically, similarly shame was apparent in several cases where the offender gave the primary motivation for the homicide as a fear of being 'outed' after sex (whether in casual sexual encounters or in survival sex worker situations). This was especially apparent in overkill cases that involved antemortem facial injuries, as shame was the most likely occurring motive in facial overkill cases when an element of sex was involved (see: Table 3).³

Previous studies have already highlighted how general beliefs exists towards women in general that they should not deviate from social and sexual spheres which are regulated by cultural (Stefanile et al. 2021) and moral expectations (Farley 2004) of sexuality. Further, trans women (even outside survival sex work) are often generally fetishised and objectified sexually (Platt and Bolland 2017). This cultural and psychosocial perception held towards trans women unfortunately is an underpinning dynamic involved in transgender-based violent crimes. As such, some cismen may perceive that trans woman are violating culturally created sexual and sociological expectations of both masculinity and femininity-solely existing as a consumable sexual object with diminished personhood. Panter (2018) highlighted that trans women are often perceived as existing outside sexually consumable limits in heteronormative cultures which can further enable victimisation. This commodification, per say, reduces transgender women to their

TABLE 1 | Transgender homicide cases involving overkill.

Case sample #	Victim identification	Victimology factors/motive	Actions	Solved
1	Black trans man	Murdered by friends	Tortured (tied up, beaten, choked with chain, bag taped over victim's head, shot 3 times, wrapped body in a curtain sheet and duct taped victim, then drove body/dumped in an apartment dumpster and set on fire)	Yes
2	Black trans woman	Sex worker	Stabbed 40 times (head, neck, face and shoulders). Decomposed and found naked from waist down with a rope tied to wrist and arms attached to a concrete block and steel pipe	Yes
10	Black trans woman	Sex worker	Stabbed with a screwdriver, and dismembered with an axe (suspect made 7 different trips to dumping site with body parts)	Yes
11	Black trans woman	Suspect was mocked by friend after flirting with victim during random encounter (did not know gender)	Beaten with multiple head injuries	Yes
12	Black trans woman	Domestic	Beaten/10 stab wounds (4 'fatal or potentially fatal', including one behind an ear that penetrated the skull bone, one on the cheek that penetrated to the jawbone, one which severed the jugular vein and carotid artery, two of which injured the liver and other wounds across the body)	Yes
15	Asian trans woman	Sex worker	Multiple injuries (found face down in hotel room floor with a bed sheet around her neck with multiple lacerations)- evidence of strangulation and blunt force injuries to head and face	Yes
16	Black trans woman	Sex worker	Beaten, stabbed 22 times (face and body)	Yes
31	Black trans woman	Suspect was in relationship and did not want to be 'outed'	Asphyxiation and blunt force injuries to head along with multiple stab wounds (advanced decomp)	Yes
56	Black trans woman	Suspect murdered victim after 'outed' and mocked by friends	Multiple gunshots to head, body and groin	Yes
63	Black trans woman	Street brawl	Beaten with crowbars, stabbed and then shot	Yes
65	Black trans woman	16-year-old suspect claimed victim sexually assaulted him	Stabbed 19 times	Yes
67	White trans man	'Homeless camp feud'	Head trauma with multiple facial fractures-multiple blunt force injuries to face/head	Yes
70	Black trans woman	Nurse/casual sexual encounter: Suspect claimed he 'lost it' after realizing victim was trans	Stabbed in face/body 119 times. Throat slashed 3 times	Yes
72	Latina trans woman	Sex worker	Stabbed with chisel 24 times—injuries to face and torso (lung and carotid artery)	Yes
73	Black trans woman	Suspect claimed he is mentally unstable (boyfriend of victim's mother)	Shot multiple times and beaten to death by mother's ex-boyfriend in front of mother	Yes
102	White trans woman	One suspect was dating victim	Tortured, stabbed in genitals, eyes gouged out and set on fire	Yes

(Continues)

TABLE 1 | (Continued)

Case sample #	Victim identification	Victimology factors/motive	Actions	Solved
144	Black trans woman	Trans rights advocate	Multiple gunshot wounds (head, torso and buttocks)	Yes
146	Black trans woman	Causal sex (suspect claimed self-defence after discovering gender status)	Drowned and hit with fists/blunt force object also strangled with belt	Yes
150	Black trans woman	Unknown	Shot multiple times in face and upper torso	Yes
173	Black trans woman	Unknown	Body found floating stuffed into a suitcase with bruises and legs severed (stab wounds with evidence of trauma to the face/head)	Yes
175	Latina trans woman	Murder occurred after sex (gender disclosure)	Multiple gunshot wounds-suspect returned to scene and shot her deceased body again (gunshot wounds to head, back and body-5 shots total)	Yes
210	White trans woman	Unknown	Multiple stab wounds to the face, neck and leg	No
229	Indigenous two-spirit	Unknown	Stabbed 7 times including genitals body dumped in nearby canal; implied that they were sexually assaulted in media	No
265	White non-binary	Unknown	Multiple blunt force injuries to head/face with a piece of rebar	Yes

physical bodies (diminishing personhood/victimhood) in which they can be used, controlled and discarded as objects during a homicide. Further transgender-based violence can be a way to assert ownership or control over someone who has been perceived as violating sexual and genital norms, similar to the discussion of symbolic and overt violence in Pieterse et al. (2018), where this can be a way to not only specifically target an individual victim, but also send a message to their entire community regarding their status and furthering marginalisation. This further underscoring involves another layer of dehumanisation and de-personification associated with dissociation in overkill homicides. As such, overkill actions can signify a deeper need to control, dominate and assert power over the victim and in many cases, it can be used as a symbolic attempt to eliminate the victim's identity entirely. Therefore, understanding the psychosocial dynamics involved in transgender-based violence specifically can aid investigators and forensic practitioners to develop more effective, sensitive, and nuanced strategies needed to understand overkill homicides specifically when examining relationships between offender(s), victims and their overkill injuries. Further, considering the existing literature related to reduced missing reports and cooperation of witnesses, this emphasises the need for a clear and careful investigative strategy that recognises the broader socio-cultural issues at play in this type of homicide investigation.

5.1 | Overkill Facial Injuries

When examining the intersection between overkill and facial injuries, Kopacz et al. (2022) pointed out that in their sample of

38 cisgender homicide cases, 68.40% ($n = 26$) had injuries to the face/head; 55.3% to the neck; 71.1% to the torso; and 78.9% to legs/arms. This finding is similar to other studies containing cisgender samples (see: Karakasi et al. 2022; Solarino et al. 2019; Park and Son 2018; Safarik and Jarvis 2005), where injuries were much more common to the face areas in homicidal overkill cases. Yet, this current study found in US transgender and gender non-conforming overkill homicides that 79.17% of injuries occurred to the face; 16.67% had neck injuries; 70.83% to the torso; 16.67% to the genitals; and 12.5% to the legs/arms (see: Figure 1). As overkill injuries appeared to be centralised on the face (i.e., the core symbolic representation of a person) it could be argued that this action in transgender and gender non-conforming homicides maybe the result of rage (Solarino et al. 2019); a combination of sexuality and intimate bonding Taff and Boglioli (1997); or anger (Chopin and Beauregard 2021; Thijssen and de Ruiter 2011) and expressive aggression (Salfati and Canter 1999). But more research should be conducted before these conclusions are made because this study centrally focused on identifying investigative themes regarding antemortem injuries, antemortem injury locations, antemortem injury severity and victimology demographics in transgender and non-conforming homicides.

5.2 | Study Limitations

As this was an exploratory study and the first of its kind to examine overkill injuries in transgender homicides, the study had a number of limitations. Cautiously it is understood that all homicide cases have variables which may not be generalisable to other homicide cases (see Lantz et al. 2024; Wodda and

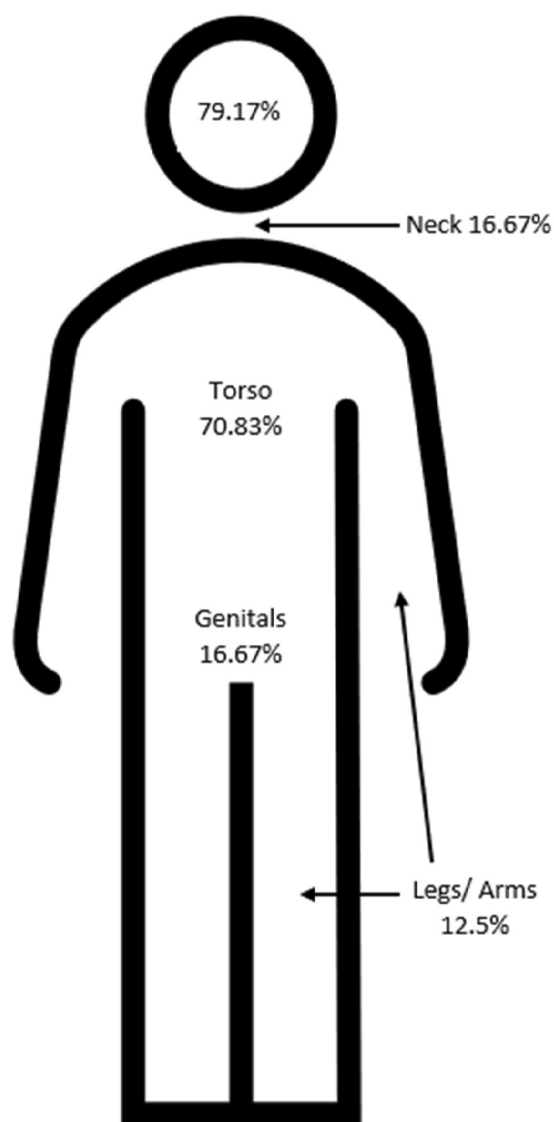


FIGURE 1 | Percentage of injuries present in each location in transgender and gender non-conforming overkill cases. Similar figure presentation of overlapping of multiple injury locations as Kopacz et al. (2022) study, but this study had different results.

Panfil 2014), and deductions made in this exploratory study intend to highlight themes for exploratory focus for future studies. Further, examining LGBT+ homicide data is fraught with methodological difficulties as highlighted by Brightman et al. (2023) and Stoltzer (2017) because gender is so nuanced and often even existing data sources (both official and unofficial) are missing key details. Namely many police departments and media outlets fail to identify homicide victims as transgender or gender non-conforming, with some agencies choosing to ignore the victim's preferred gender identity during the investigation (Panter 2023).

Additionally, some people may have not been included in the study sample because their legal name or deadname identity and their transgender status was not included in official media reports, official police reports, official sources, nor non-profit advocacy blogs/reports. This is often due to victims being closeted, and their gender is unknown to others. As such, this study

should be considered a fair, yet cautiously conservative sample of US transgender and gender non-conforming homicides within this time frame.

This research project has taken years of data collection and coding, and it should be noted that it would be unfeasible (if not impossible) to ensure 100% accuracy of a homicide victims gender status. Given that this is a population of victims often overlooked or marginalised by wider society, relying only on official documents for data collection and case analysis was not possible in the current study. Notably there exists discrepancies in current official statistics as different police agencies record different types of victimology demographics-often not recording transgender or gender non-conforming status at all. Both FBI's SHR and UCR and even NIBRS, reports rely upon officers within local or state agencies to submit information about homicide either to a state-level agency or the FBI directly in respect to data collection (Parkin and Gruenewald 2017). Hence, it should be re-emphasised that current numbers in official statistics should be considered conservative representations. Further, some police departments keep different types of statistical data regarding homicides and there are always continuity issues with classifications of motives/methods regarding homicides when looking at a national picture. Also due to systematic misgendering/deadnaming/non-disclosure collecting comprehensive statistics can be rather difficult to obtain in general. Yet despite these limitations, the use of open-source material became the best source for data collection for this project.

6 | Conclusion and Future Directions

This study has raised some valid investigative points which may be of interest to investigators and crime scene technicians while examining psychosocial underpinnings of transgender-based violence in overkill homicides, despite the noted limitations raised. The overall research aim of this study was to identify antemortem injury themes and other crime scene factors in overkill homicides within US transgender and gender non-conforming homicides to better understand why they occur. The findings presented here can be directly tied to the need for thorough and complete victimology (see Adcock and Chancellor 2013), as well as suggest case specific considerations of critical importance in murders of this ilk. Notably there were overlapping injuries in the 24 overkill homicides cases examined, with overkill injuries were present in the face region (79.17%); torso (70.83%); neck region (16.67%); genital area (16.67%); and extremities (legs/arms) (12.5%). With the face being the most common targeted area of overkill injuries, this suggests either intentional violence to dehumanise the victim; or in cases when sex was involved there appeared to be a deep-seated internal sexual conflict present in offender(s). With this level of violence, the contact between the victim and offender during the crime likely has resulted in significant transfer of evidence, making the crime scene examination and processing critical even though exact number and nature of injuries may not be revealed until the autopsy (see also Adcock and Chancellor 2013). Further, it is understood that torso overkill injuries were apparent in the sample as the torso contains vital organs

TABLE 2 | Demographic breakdown of facial overkill and injury types.

Identity	Facial gunshot wounds	Facial stab wounds	Blunt force injuries to face	Total
Black trans woman	2	5	5	63.18% ($n = 12$)
White trans woman	0	2	0	10.53% ($n = 2$)
Latina trans woman	0	2	0	10.53% ($n = 2$)
Asian trans woman	0	0	1	5.26% ($n = 1$)
White trans man	0	0	1	5.26% ($n = 1$)
White non-binary	0	0	1	5.26% ($n = 1$)

TABLE 3 | Ethnicity/race of overall transgender homicide sample.

	Frequency	%
Black or African American	220	73.82
White	37	12.42
'Hispanic', 'Latina'/' Latino'	31	10.40
American Indian/Indigenous	4	1.34
'Mixed'	2	0.67
Asian	2	0.67
Unknown	2	0.67

which has the largest surface area of the body to inflict injuries. Out of all the overkill injuries examined in the sample, torso injuries were carried out singularly as a mechanism to facilitate murder with no indication of symbolic or sexual motivation present.

In respect to genital area injuries in the overkill sample these injuries may indicate heightened sexual violence and/or a symbolic attack on the victim's gender identity, which should be explored fully in the victimology component of the investigation and involve persons from multiple areas of the victim's life, where possible, for a holistic understanding of their identity and life (Adcock and Chancellor 2013). As indicated in the small sample studied, overkill injuries to the genital region were carried out subsequently to the original fatal wounds inflicted upon the victims. So, this injury region was not the original wounding area of homicidal intent during the commission of the homicide. Instead, genital overkill injuries within this sample were instead a secondary expressive type of wounding action within the crime scene when a sexual component was present. Regarding wounds to extremities in the sample, the intent of these wounds was to immobilise or disable the victims during the commission of the homicide or in two cases the wounds to extremities was with purpose to dismember the victim. Notably, forensic analysis of extremity wounds can aid investigators in further understanding overkill wound patterns as it can offer insights into defensive wound sequences while conscious and fighting the offender(s).

Despite the noted limitations to this study, other key investigative concerns regarding crime scenes of these homicides were apparent. For example, when examining overkill homicide cases further, 50% ($n = 12$) involved some element of sex (whether paid or casual) prior to murder; with cisgender male shame

being the leading disclosed motive in facial overkill cases examined based on prosecution information available. This finding maybe relevant for both future transgender sexual homicide studies as extensive facial injuries can not only indicate mechanisms of de-personification but further hinder prompt victim identification, but also as a noted area that investigators should consider exploiting in an interview when presented with these cases. Facial overkill injuries can arguably also impact facial reconstruction efforts required for identification which in turn can influence effective facial depictions (approximations of appearance in life) of unidentified deceased.⁴

Therefore, future research based on this study could have several different foci based on the highlighted points raised: (1) further studies to examine facial overkill injuries and their motivations in symbolic violence; (2) examining the psychological role sex has in overkill homicides involving transgender survival sex workers specifically; (3) how extensive facial injuries influence the ability of forensic professionals during facial reconstruction efforts/depictions in similar homicide investigations; and (4) examining further forensic trends between offenders and victims in facial overkill cases within larger transgender and gender non-conforming homicide samples. This study has provided foundational arguments intended to improve investigative and forensic tactical approaches in transgender and gender non-conforming overkill homicide scenes where the research and understanding of these offences has been sparse in the extant literature.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are openly available in Liverpool John Moores University Data Repository at <https://opendata.ljmu.ac.uk/id/eprint/218/>.

Endnotes

¹ Cold weapons are any weapons which do not use any form of gunpowder or other explosives (e.g. knives, blunt objects, etc.). Tavone et al. (2022) notes that firearms possession is limited by the law which may explain the overkill weapon choice in their sample.

² There were 2 cases where the identity of the victim was listed as 'unknown', or 'Jane/John/Doe' and the age was not disclosed due to the advanced state of decomp or an overall failure to identify the

victim. Therefore, when determining the mean age of sample these two cases were excluded in this calculation.

³ In all cases where an arrest was made, the offender in every case was a heterosexually identified cisgender male.

⁴ For useful examinations on facial depictions of deceased and approximations in life see Wilkinson (2004, 2006, 2014) and Wilkinson et al. (2024).

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