

## Research Article

# Exploring the Linkages between Animal Abuse, Domestic Abuse, and Sexual Offending: A Scoping Review

**Kristin Diemer** , **David Gallant** , **Nicolas Mosso Tupper** , **Kate Hammond** ,  
**Ashrita Ramamurthy** , and **Cathy Humphreys** 

*Department of Social Work, University of Melbourne, Melbourne, Australia*

Correspondence should be addressed to Kristin Diemer; [k.diemer@unimelb.edu.au](mailto:k.diemer@unimelb.edu.au)

Received 16 November 2022; Revised 19 January 2024; Accepted 23 January 2024; Published 31 January 2024

Academic Editor: Qing-Wei Chen

Copyright © 2024 Kristin Diemer et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

The abuse of animals is evident in different contexts. This article takes two discrete bodies of literature: threats and actual harm to animals in the context of domestic abuse and sex offending in the context of animal abuse. The reviews focus on the implications for risk assessment and risk management and explore the following questions: What is the international evidence base for threats or violence towards animals, with a specific focus on risk assessment, in the context of domestic abuse? What is the international evidence base for threats or violence towards animals, with a specific focus on risk assessment, in the context of sex offending? What similarities and differences are evident in the approaches in the two bodies of literature? A scoping review methodology was applied to the two bodies of animal abuse literature. The domestic abuse literature elicited 27 studies for full inclusion, while the sex-offending literature examined 15 papers. A broad analysis of the literature was taken to understand the implications for risk assessment and risk management. In the context of risk assessment, the literature indicates that threats or harm towards animals, including the sex abuse of animals, has the potential to be used in four ways: (1) animal abuse as an indicator of domestic abuse; (2) childhood animal abuse as a signal of other problems within a household; (3) animal abuse as an indicator of more severe domestic abuse; and (4) the inclusion of pet abuse as a unique form of domestic abuse. The comparison of the literature on animal abuse and animal sex abuse highlighted not only different approaches theoretically and methodologically but also important similarities. Both literature highlighted gaps in risk assessment, risk management, and the lack of identification and training in this neglected area of the service system prevention and response.

## 1. Introduction

The abuse of animals sparks widespread concern and often a visceral response of revulsion and anger against people who abuse animals. In Australia, documented evidence of the abuse of cattle in Indonesian abattoirs halted a million-dollar export industry based on widespread community outrage [1]. The abuse of animals in the context of domestic abuse (DA) or sexual violence is equally challenging. While confronting cases are common throughout the media [2], some of which have resulted in custodial sentences for offenders [3–5], these stories are less reflected in the academic literature. This raises questions about how and whether issues of animal abuse and animal sexual abuse are being

incorporated into risk assessment, risk management, and prevention frameworks.

The authors of this paper were contracted by a police organization in Australia to explore the literature on harm to animals including both threats and harm to animals in the context of domestic abuse and sex offenses involving animals. These are connected areas for some police response units but are otherwise siloed areas of practice in the human services and justice systems. As researchers, we were struck by both the similarities and differences in the initial literature review and were interested in comparing the literature. This approach can bring “news of difference” [6] shedding a new light on a previously interrogated area of policy and practice.

The research also sought to clarify whether there were implications for risk assessment and risk management arising from the literature. A review of DA risk assessment tools nationally and internationally showed that animal abuse is not a risk factor that is commonly included across tools [7]. Only one—the Tasmanian Risk Assessment Screening Tool (RAST), an actuarial tool utilized by police—included animal abuse as a weighted metric. The RAST designates the act of “kill(ing) a family pet now or in the past” as “high risk” [7]. Currently, risk assessment and management are central in Australia’s approach to identifying and intervening in domestic abuse and corrections/probation practice. It is, therefore, important that research is used to improve understanding of potential risk factors [8]. Generally, the factors associated with domestic abuse risk assessment are derived through working backward from domestic homicides and serious assaults to understand the convergence of factors that surround the victim and the offender. This understanding is then used to ascertain whether earlier identification and/or managing these factors differently would have saved lives and injury [9]. However, it has been argued that a more urgent and high-intensity response is required to respond to the high levels of lethality and serious injury resulting from DA [10]. Thus, the redevelopment of more victim/survivor and perpetrator-centered risk assessment and risk management processes has been a key aspect of DA reform in Australia [11]. This includes the addition of new risk factors that could aid in risk assessment and ongoing risk management.

This paper is divided into discrete areas: study 1, scoping the literature on domestic abuse and harm and threats of harm to animals; study 2, scoping the literature on sex offending and harm to animals; finally, comparing the two literatures to highlight similarities and differences in the discussion.

The questions of the literature were broad, but highlighted the issue of risk assessment which was a particular area of interest for the police:

- (a) What is the international evidence base for threats or violence towards animals, with a specific focus on risk assessment, in the context of domestic abuse?
- (b) What is the international evidence base for threats or violence towards animals, with a specific focus on risk assessment, in the context of sex offending?
- (c) What similarities and differences are evident in the approaches in the two bodies of literature?

## 2. Method

**2.1. Overview.** To explore the research questions identified, a scoping review has been conducted following the framework set out by Arksey and O’Malley [12], and the later recommendations are made by Levac et al. [13]. Reporting follows the Preferred Reporting Items for Systematic Reviews and Meta-Analysis Extension for Scoping Reviews (PRISMA-ScR) [14].

**2.2. Search Strategy.** A four-step search strategy was designed to identify relevant publications. The search terms included terms related to domestic violence or intimate partner violence and animals or pets for the first study. The search strategy for the second study included terms related to sexual violence and pets or animals. Both search strategies were utilized on Medline (Ovid), SCOPUS, and Web of Science. For each study, a separate grey literature search was conducted on Google Scholar, which was undertaken using key terms and words related to each study. The reference lists of relevant literature were searched for additional studies. This review includes studies from 2000 to August 2023; no new articles beyond this date are included (see Algorithms 1 and 2).

**2.3. Study Selection.** All the references identified from the database search were imported into the reference management software, EndNote 20 (version 20.5), and later uploaded for further screening into the Covidence online screening tool. Two different libraries were created on Covidence, one for each review. In both reviews, the initial screening phase included the automatic and manual removal of any duplicated articles. The second phase involved the screening of potentially relevant articles by title and abstract. This phase was a double-blind process with two reviewers, where two negative votes would mark the article as irrelevant and two positive votes would move it to the next phase of the full-text review, or any two different votes—yes, no, or maybe—would flag it as a conflict. Any conflicts were resolved by both reviewers. The third phase involving the full-text review followed the same protocol, with articles that were marked as included then moving to the data extraction phase, where relevant content was extracted for analysis.

### 2.4. Selection Criteria

**2.4.1. Research Question 1.** “What is the international evidence base for threats or violence towards animals, with a specific focus on risk assessment, in the context of DA?”

Studies were included if they explored the links between animal abuse and domestic abuse (DA), with a specific focus on risk assessment. As a result, a wide range of studies were included: those that examined the use of animals for control by an abusive partner and the effects of owning a pet on help-seeking and other behaviors; the link between witnessing DA and perpetrating animal abuse in childhood; the link between witnessing animal abuse in childhood and adult violence towards humans; the link between witnessing DA in childhood and perpetrating animal abuse as an adult; the link between perpetrating animal abuse as a child and domestic violence as an adult; and the role of veterinarians in recognizing and reporting DA.

**2.4.2. Research Question 2.** “What is the international evidence base for threats or violence towards animals, with a specific focus on risk assessment, in the context of sex offending?”

- (1) (Domestic violence or domestic assault or domestic abuse or family violence or family abuse or interpersonal violence or interpersonal abuse or partner abuse or partner violence or spousal abuse or spousal violence or battered wom \*m or batterer or battered women\$ or domestic violence\$ or spouse abuse\$ or intimate partner violence\$)
- (2) (Animal \* or pet or pets or livestock or pets\$)
- (3) 1 and 2
- (4) Limit 3 to yr = “2000 – Current”

ALGORITHM 1: Search terms used in search of OVID databases for the first search of the intersection between harm or violence towards animals and DA.

- (1) (Sexual assault or sex offen \* or sexual violence or sexual coercion or sexual abuse or sexual harassment or rape or forced intercourse or forced sex or nonconsensual sex or sex offense or child abuse)
- (2) (Animal or pet \* or livestock)
- (3) 1 and 2
- (4) Limit 21 to yr = “2000 – Current”

ALGORITHM 2: Search terms used in search of OVID databases for the first search of the intersection between harm or violence towards animals and DA.

Studies were considered for inclusion if they investigated one of the following areas: (1) the association between adults who have abused animals and those who have committed sexual crimes or child sexual abuse; (2) the correlation between individuals who experienced sexual abuse in childhood and those who perpetrated sexual abuse towards animals in adulthood; or (3) the connection between individuals who committed sexual abuse towards animals during their childhood and those who perpetrated sexual violence in adulthood. Studies that discussed drug therapies or sex offenses unrelated to animal abuse or animal sexual abuse were excluded.

### 3. Results

The two bodies of literature are reported upon separately before a comparison is made in the discussion of a critical analysis of the literature in the two studies. In both bodies of literature, risk assessment was often not the central focus, but the study pointed to issues for consideration in risk assessment and risk management.

### 4. Study 1: Domestic Abuse and Animal Abuse

A total of 1553 studies were extracted from the academic research databases Medline (Ovid), SCOPUS, and Web of Science. Of these, 589 were automatically removed and 38 were manually removed due to duplication. This left a total of 926 studies to be screened based on title and abstract. Of these, 744 were found to be irrelevant, leaving 182 for a full-text analysis. From this analysis, 25 articles were found to be relevant for this study. An additional 2 articles were found in the grey literature, bringing the total to 27 articles included in this study (see Figure 1). A list of articles and their details included in study 1 can be found in Table 1.

*4.1. Overview of Studies.* There was a diverse variety of methodologies in the studies that explored the links between DA and animal abuse in risk assessment. Nine of them were cross-sectional studies [16–18, 20, 22–24, 26, 34], which only examined data at one point in time: one cohort study that focused on predicting domestic violence based on a history of animal cruelty in children [31], one case-control study that focused on identifying risk factors for abuse and intimate partner violence- (IPV-) related injury among an urban population [8], one case study that aimed to understand the connection between animal cruelty and family violence, a phenomenon often termed as “the Link” [27], one qualitative study that aimed to understand and conceptualize childhood animal harm [40], and two retrospective studies [20] studied domestic violence incident information sheets collected by first responders to domestic violence incidents in one US county, while Bright et al. [19] focused on juvenile offenders to assess the likelihood of engaging in animal cruelty based on a history of family trauma.

There were also 13 literature reviews included in this study. Alleyne and Parfitt [15] and Gullone [25] focused on understanding the shared characteristics of animal abuse with other violent behaviors. Miller [33], Mota-Rojas et al. [32], and Longobardi and Badenes-Ribera [30] explored the link between animal cruelty and violence to people, while Cleary et al. [21] reviewed animal cruelty in abusive adult intimate partner relationships. Tomlinson et al. [38] explored empirical evidence that supports the co-occurrence of family violence and animal cruelty. Newland et al. [36] concluded that pet abuse is a potential risk factor for domestic violence (DV) and argued for education to prepare veterinarians for their response to pet abuse and DV in practice. Lee-Kelland and Finlay [29] and Muscari [35] extended this focus to the response from services more closely related to domestic abuse or other violence.

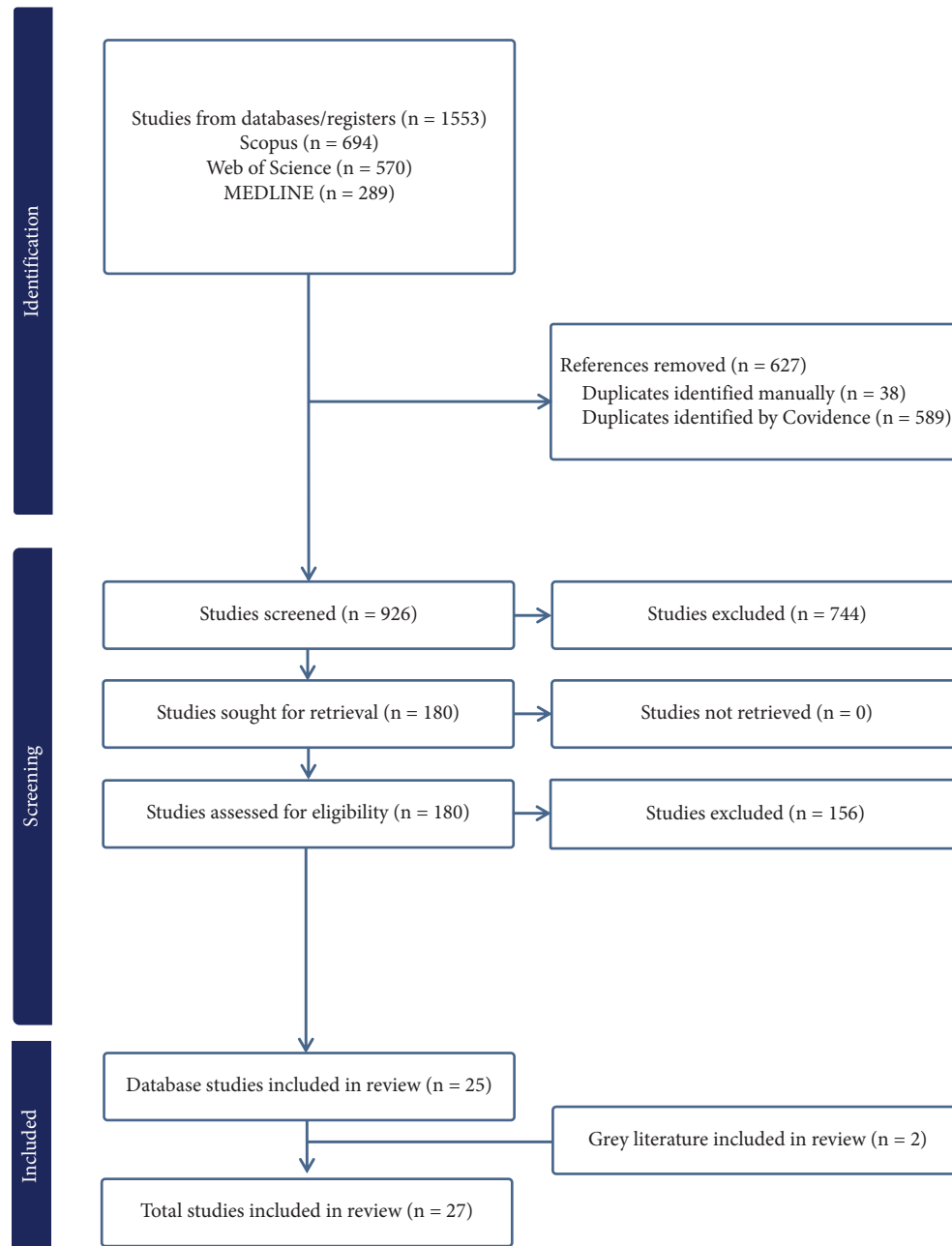


FIGURE 1: Flowchart for selection of eligible research articles for first search.

Ladny and Meyer [28] synthesized the current literature on the relationship between childhood witnessing of cruelty toward animals and violence toward animals and other humans. Randour et al. [37] found strong associations between domestic violence, child abuse, and animal cruelty by searching eight electronic databases for peer-reviewed articles published until September 2021. Lastly, Wauthier and Williams [40] showed that environmental factors predicting childhood animal cruelty (CAC) include exposure to childhood adversity, especially experiences of violence and witnessing animal cruelty.

**4.2. Risk Assessment: Animal Abuse as a Marker of Violence against Humans.** There was agreement through some of the articles that there was a link between animal abuse and violence against humans. Of the 28 studies, 25 commented on animal abuse as a potential marker of violence towards humans [8, 15–20, 22, 23, 25, 26, 31, 32, 35, 37]. Three studies reported that animal abuse often co-occurs with other violent behaviors such as DA [25, 26, 35].

Out of the total, seven studies argue that more severe domestic abuse and animal abuse within the household should be markers of a high-risk environment for domestic homicide [8, 16, 18, 20, 27, 32, 40].

TABLE 1: Summary of extracted publications for domestic abuse and animal abuse studies.

Reference	Study design	Study population	Main findings
[15]	Literature review	Twenty-three studies met the specific inclusion criteria, but most importantly, they examined the characteristics of adult perpetrators of animal abuse	<p>The findings indicate that specific types of childhood experiences (e.g, maladaptive parenting styles) are strong predictors of animal abuse perpetration during adulthood</p> <p>Animal abuse is one of many antisocial behaviors perpetrated in the studies examined, and there is no clear evidence for temporal ordering as suggested by the violence graduation hypothesis</p> <p>Supports the hypothesis that the psychological functioning of animal abusers is broadly impacted (presumably by childhood experiences) which is why these findings are indicative of multifaceted deficits in regulatory processes</p> <p>Men are more likely than women to report animal abuse perpetration and proclivity or propensity to engage in animal abuse</p> <p>The findings derived from the victim studies reviewed indicate a thematic clustering of motivations for animal abuse. That is, in an attempt to control, coerce, intimidate, and manipulate their victims, IPV perpetrators abuse animals, and this relationship is moderated by the victims' emotional attachment to their pet animals</p>
[16]	Cross-sectional study	Women with pets, who were battered ( $n = 101$ ) and recruited from 1 of 5 shelters in Utah, and women with pets residing in the community and who had not experienced violence in their intimate relationships ( $n = 120$ ). A standard interview protocol was used to gather women's reports about the treatment of family pets, and a questionnaire was used to assess their partners' and their own violent behavior	<p>Women residing at domestic violence shelters (S group) were nearly 11 times more likely to report that their partner had hurt or killed pets than a comparison group of women who said they had not experienced intimate violence (NS group). Reports of threatened harm to pets were more than 4 times higher for the S group. The vast majority of shelter women described being emotionally close to their pets and distraught by the abuse family pets experienced. Children were often exposed to pet abuse and most reported being distressed by these experiences. A substantial minority of S group women reported that their concern for their pets' welfare prevented them from seeking shelter sooner</p>
[17]	Cross-sectional study	Our matched sample consisted of 355 owners of either licensed or cited dogs that represented high- or low-risk breeds. Categories of criminal convictions examined were aggressive crimes, drugs, alcohol, domestic violence, crimes involving children, firearm convictions, and major and minor traffic citations	<p>Owners of cited high-risk ("vicious") dogs had significantly more criminal convictions than owners of licensed low-risk dogs</p>
[18]	Cross-sectional study	86 abused women receiving services from domestic violence shelters across Canada	<p>This study provides evidence to support the conclusion that women who report that their partner mistreated their pets are themselves at significantly greater risk of more frequent and severe forms of IPV, most specifically psychological, physical, and sexual abuse</p>
[19]	Retrospective study	The current study utilizes a dataset of 81,000 juvenile offenders whose adverse childhood experiences are known and includes 466 youth who self-report engaging in animal cruelty	<p>Utilized predictive modelling to assess the likelihood of engaging in animal cruelty based on the history of family trauma</p>
[20]	Retrospective study	This study is a retrospective analysis of domestic violence incident information sheets collected by first responders to domestic violence incidents in Marion County, Indiana. 3,416 domestic violence officer information sheets were analyzed	<p>IPV victims residing in homes with a suspect who has a history of pet abuse often describe "extremely high-risk" environments. With nearly 80% reporting concern that they will eventually be killed by the suspect, victims in these environments should be considered at significant risk of suffering serious injury or death</p>

TABLE 1: Continued.

Reference	Study design	Study population	Main findings
[21]	Literature review	Peer-reviewed research articles were sourced from online databases such as PubMed, CINAHL, Scopus, and PsycInfo in July 2020. Overall, 427 records were retrieved, of which 35 articles from 30 studies were included in this review	The findings showed that the prevalence of animal abuse is high in households with intimate partner violence (range: 21%–89%), and there is a significant relationship between intimate partner violence and animal abuse. Both are often perpetrated concurrently, with animal abuse used as a mechanism to control the partner and facilitate intimate partner violence. Animal abuse affected a victim's decision to leave the abusive relationship and seek support and had an ongoing psychological impact on both animal and human victims
[22]	Cross-sectional study	103 pet-owning IPV survivors recruited from community-based domestic violence programs	20% of participants described animal maltreatment actions that were used as a coercive tactic to punish or control the participant's actions and behaviors. 40% recounted that their partner's threats against or cruelty toward the animal were perpetrated to punish or discipline the pet for undesired behaviors. Experiencing animal maltreatment at the hands of children in the household was also a theme among women in the sample (23%), with several women reporting that they perceived their child to be modeling observed animal maltreatment by an abusive partner. Notably, women also reported on the emotional and psychological impacts of their complex and distressing exposure to animal maltreatment in the context of IPV
[23]	Cross-sectional study	860 college students recruited from three universities in the Midwest and west  Participants provided demographic information and retrospective reports of child maltreatment and violence in their family	Overall, individuals who reported witnessing or perpetrating acts of animal cruelty were more likely to have a history of family violence than those with no exposure to animal abuse. Specifically, about 60% of participants who have witnessed or perpetrated animal cruelty as a child also report experiences with child maltreatment or domestic violence. Differential patterns of association were revealed between childhood victimization experiences and the type of animal cruelty exposure reported
[24]	Cross-sectional study	The study's population comprises women who were in abusive relationships and had at least one companion animal during that period. The sample analyzed for the study consists of 55 respondents meeting these criteria	We find that threats to harm "pets," emotional animal abuse, and animal neglect are clearly perceived by these survivors as being intentionally perpetrated by their abuser and motivated by a desire to upset and control them; the findings related to physical animal abuse are not as straightforward
[25]	Literature review		The extensive antisocial behavior literature supports the idea that antisocial behaviors co-occur such that the presence of one form of antisocial behavior is highly predictive than the presence of other antisocial behaviors
[26]	Cross-sectional study	291 mother-child dyads, where the mothers sought services from domestic violence agencies	This study found that among families experiencing IPV, where the mother sought DV services, a significant proportion of the mothers' partners threatened to harm or actually harmed a family pet. Rates of actual harm to pets were lower for Hispanic men, particularly if Mexican-born
[27]	Case study design	The study involves four distinct cases to explore the Link between violence towards animals and humans within the context of family violence: Chan, Ena, Mai, and Kiku (case 1: USA); Brad, Kate, Coco, and Kyle (case 2: UK); Tim, Jill, and Bob (case 3: the Netherlands); and Sarah, Blake, and Kerry (case 4: UK)	The authors recommend that these professionals become familiar with the bioecological systems model, which will enable them to better understand the psychological problems of animal cruelty and family violence and the different bioecological contributing factors. The authors emphasize transdisciplinary collaboration as vital in the recognition, prevention, and protection of animal and human victims trapped in family violence

TABLE 1: Continued.

Reference	Study design	Study population	Main findings
[28]	Literature review	A total of 17 studies, published between 1996 and 2017, were found that met the search criteria. Seventeen of these showed statistically significant findings for at least one of the relevant outcome variables. Samples varied, with 3 of the 17 studies sampling college students, 7 studies sampling school-age children, 3 studies surveying incarcerated offenders, and the remaining 4 sampling mothers and/or mother-child dyads. Four of the studies used samples from countries other than the United States.	This review has important implications for practitioners and researchers involved with the Making The Link project and other animal and child welfare organizations in developing a novel HEP to be implemented in schools for youth in Bistrita, Romania. Before-and-after measures are necessary to examine potential changes in key variables such as exposure to domestic violence, history of violent behavior towards animals and people, empathy levels, attitudes towards animals, antisocial attitudes, location of residence, gender, and other relevant variables. HEP have been shown to increase knowledge of animals' needs and prosocial behaviors, at least temporarily
[29]	Literature review	A search of published articles on the subject was conducted on PubMed/Medline. Articles that were felt relevant to the study question had their reference lists checked to identify other relevant studies	A comprehensive exploration of the subject involved a thorough search of published articles on PubMed/Medline. The selection process for relevant articles was guided by the study question, and those deemed pertinent underwent further scrutiny. Reference lists of these identified articles were meticulously examined to unveil additional studies that could contribute valuable insights into the research. This methodical approach ensures a comprehensive and well-informed examination of the topic, drawing on a range of reputable sources to enhance the depth and breadth of the study
[30]	Literature review	The application of inclusion and exclusion criteria enabled us to locate 32 studies published between 1995 and July 2017	The results show that episodes of animal cruelty during childhood and adolescence tend to co-occur alongside other forms of violent and antisocial behaviors. Cruelty to animals was associated with bullying, behavioral problems, experiences of abuse (emotional, physical, and sexual), and juvenile delinquency
[31]	Cohort study	Data were from the Environmental Risk (E-risk) Longitudinal Twin Study, an epidemiological representative cohort of 2,232 children living in the United Kingdom. Mothers reported cruelty to animals when children were 5, 7, and 10 years	Nine percent of children were cruel to animals during the study and 2.6% persistently ( $\geq 2$ time points). Children cruel to animals were more likely to have been maltreated than other children (OR = 3.32) although the majority (56.4%) had not been maltreated. Animal cruelty was not associated with domestic violence when maltreatment was controlled. In disadvantaged families, 6 in 10 children cruel to animals had been maltreated themselves
[32]	Literature review	160 articles, 8 books, and 5 websites  Narrative literature review	Much research and rethinking of the importance of the veterinarian in detecting animal abuse and cruelty is needed to help detect and prevent cases of interpersonal violence that may arise over time  Children exhibiting triad behaviors—enuresis, firesetting, and cruelty to animals—may serve as predictors of adult violent tendencies. However, indicators such as fighting, temper tantrums, school issues, and interpersonal challenges could be more reliable precursors to later violent behavior than the triad. The correlation between childhood animal cruelty and subsequent violence towards humans has been consistently observed in numerous studies. Discrepancies in findings regarding the link between animal cruelty and interpersonal violence can be attributed to varying definitions, assessment time frames, retrospective methodologies, and reliance on parental reports instead of child reports for evaluating the frequency and severity of such behaviors. Additionally, researchers propose a connection between animal abuse and child abuse, suggesting that exposure to violent households may heighten the likelihood of displaying cruelty towards animals
[33]	Literature review	No exclusion or inclusion criteria provided	

TABLE 1: Continued.

Reference	Study design	Study population	Main findings
[34]	Cross-sectional study	A total of 9240 adolescents aged 12–16 years (mean age 14.7) participated in the digital school-based survey	Four percent ( $n = 380$ ) reported that they had ever witnessed a parent being violent towards a family companion animal, whereas 1% ( $n = 125$ ) had experienced that an adult in the household had threatened to harm a companion animal. There was a substantial overlap between companion animal abuse and child abuse, and it most frequently co-occurred with psychological abuse and less severe forms of physical child abuse
[35]	Literature review	A search of published articles on the subject was conducted on PubMed/Medline. Articles which were felt relevant to the study question had their reference lists checked to identify other relevant studies	The invaluable contributions of pets to children, fostering compassion, responsibility, and unconditional love, contrast sharply with the concerning issue of children engaging in animal abuse, reflecting underlying dysfunction. The shared traits among various forms of violence highlight the correlation between exposure to violence and subsequent animal abuse by children, with a concerning connection to potential violence towards other humans. Recognizing animal cruelty as an early and reliable indicator, it emerges as a significant predictor of later violent behavior
[36]	Literature review	Articles were sourced from online databases by searching the keywords without date restrictions. Overall, 70 articles were retrieved and reviewed	Substantial research demonstrates pet abuse as a potential risk factor for DV. Further, DV perpetrators may harm or kill a pet to exert physical, psychological, or emotional control over an intimate partner. Given that victims of DV often seek veterinary aid for their pets, veterinarians may act as frontline professionals in the recognition of the link between PA and DV. Veterinarians must assess individual cases for diagnostic indicators of nonaccidental injury and consider demographic factors to identify suspected PA and DV
[37]	Literature review	Articles selected for review were published in a peer-reviewed journal, relevant to some aspect of the link between animal abuse and child abuse and/or domestic violence, used either a national or a longitudinal database, or relied on random sampling or a comparison group	Strong associations were found between domestic violence, child abuse, and animal abuse Animal abuse, whether witnessed or committed, is a form of trauma Severe animal abuse as a predictor for severe domestic violence recently emerged as a promising association. However, some of these findings on “the link” have not been translated into practice, for example, domestic violence advocates and child protection workers frequently do not ask questions about pets in the family At the same time, the past 20 years have seen an increase in state and federal legislation and policies that have been enacted, in part, because of the growing body of evidence on the link Knowledge of the link also has influenced a number of court cases deciding parental rights. Moreover, awareness of the link is illustrated by the passage of pet protection orders for victims of domestic violence as well as the inclusion of pet abuse as a form of domestic violence
[38]	Literature review	We searched eight electronic databases (e.g., Academic Search Complete, PsycArticles, PubMed) for peer-reviewed articles published until September 2021. Articles were eligible for inclusion if they were written in English and included the empirical study of at least one form of family violence and animal cruelty. We identified 61 articles for inclusion	Findings regarding the association between family violence and animal cruelty varied. Some studies found that family violence was significantly associated with animal cruelty (or vice versa), but there was also evidence that the association was not statistically significant. Associations between family violence and animal cruelty were not significant in most studies that adjusted for sociodemographic factors



TABLE 1: Continued.

Reference	Study design	Study population	Main findings
[8]	Case-control study	This study reports an additional analysis of a case-control study	Risk factors for partners perpetrating IPV included not being a high school graduate (AOR 2.06 $p = 0.014$ ), being in fair or poor mental health (AOR 6.61 $p < 0.001$ ), having a problem with drug (AOR 1.94 $p = 0.020$ ) or alcohol use (AOR 2.77 $p = 0.001$ ), or pet abuse (AOR 7.59 $p = 0.011$ ). College completion was observed to be protective (AOR 0.60, $p < 0.001$ )
[39]	Qualitative study	Ten children were referred concerning cruel/at-risk behavior toward their pet	Content analysis suggested that referred children (a) tended to have small attachment networks which often included pets, (b) tended to interpret ambiguous situations predominately negatively, (c) tended to like animals and see them as sentient, and (d) struggled admitting to cruelty. Three main superordinate themes emerged from the IPA: (a) bonding to animals, (b) exposure to/normalization of violence, and (c) signs of emotional issues/trauma
[40]	Literature review	Four databases (OVID, Web of Science, PubMed, and EBSCOhost) were searched for terms relating to children, animals, and harm in the title and keyword fields. This generated 416 results, and 69 publications were reviewed here	We thematically classified empirical study findings, which showed that (1) environmental factors that predict CAC include exposure to childhood adversity, especially experiences of violence and witnessing animal cruelty, (2) CAC is recurrent or has extreme links to later interpersonal violence, (3) psychological risk factors linked to CAC include externalizing disorders, lower empathy, lower self-esteem, poorer family functioning, and attitudes accepting of cruelty, (4) witnessing animal cruelty is a serious risk factor for a range of internalizing and externalizing behaviors, and (5) a range of psychosocial barriers exist in measuring and reporting CAC. Issues with measures, population selection, and definitions focusing only on more severe forms of CAC are factors that potentially constrain the generalizability of results

Many of these articles did not critically or theoretically explore the link between animal abuse and violence against humans. However, among the articles that did identify this link, two common explanations for this link emerged. First, some researchers argue that animal abuse should be viewed as a form of human aggression and that those who commit animal abuse share characteristics with those who commit other violent behaviors. Thus, animal abuse should be conceptualized in the same way as other forms of violence against humans [25, 35].

A second argument emerged. This means that people who commit animal abuse may be more likely to have experienced other forms of trauma and consequently exhibit problematic, trauma-related behaviors including violence towards humans [18, 19, 22, 27–29, 31, 33, 37, 40]. These studies found close relationships between animal abuse and other forms of trauma [19, 22, 29, 31, 33, 37], arguing that animal abuse should be viewed as a distinct indicator of exposure to violence, domestic aggression, or trauma [22, 32, 34, 37–40].

*4.3. Motivations for Animal Abuse.* When animal abuse was committed in households where domestic abuse was also present, studies reported similar motivations for the animal abuse. These studies argued that perpetrators of domestic abuse may threaten, harm, or kill a pet to frighten and exert physical, psychological, or emotional control over their partner [15, 21, 24, 26, 38]. One literature review which focused on the motivations for animal abuse in domestic abuse settings offered two explanations for rationalizing the use of pets to control victims of domestic violence by perpetrators: (1) the pets are seen as property rather than other living beings, thus minimizing feelings of guilt or cognitive dissonance, and (2) animal abuse is simply another form of aggression and violence among other behaviors which are used to dominate and control [15]. Wauthier and Williams [39] explored children's motivation for harming animals and found two main reasons being "punishment" and "lashing out." They also found that most children in their study realized that animals suffered as a result of their actions.

It was argued that these mindsets could be linked to deficits in regulatory processing and emotional competence seen in some trauma victims [15, 29], aligning with past research arguing that there are strong links between animal abuse and trauma [19, 22, 29, 31, 33, 37]. In the case of children, it was argued that animal maltreatment could arise based on the lack of emotional control or as a punishment for bad behavior from the pet in households where violence was normalized. Thus, this link may signify impaired regulatory processing whereby during traumatic experiences, the flight/fight reaction is activated, bypassing the frontal cortex and its function in processing events and subsequent behaviors.

Despite the various motivations and risk factors, which can be numerous, it is essential to thoroughly explore each motivation for harming animals. Appropriate measures should then be implemented from both a justice and health perspective [30].

*4.4. Animal Abuse and Help-Seeking Behaviors.* Research posits that adults and children often show great care and concern for their family pets; thus, these studies found that concerns about their pet's safety can prevent women from disclosing abuse, seeking help, or leaving abusive relationship [8, 15, 16, 18, 26]. This concern may be manipulated by abusive partners to prevent women from leaving abusive relationships through threatening or harming pets [15].

These studies also demonstrated that pets are often not taken into account by law enforcement or domestic abuse organizations with four studies reporting that, as shelters often do not take in pets, many women do not leave or they may return to abusive relationships out of concern for their pets [8, 16, 18, 23]. Furthermore, the presence of a perpetrator with a history of animal abuse could indicate further risk and should be considered when responding to a domestic abuse report. These studies found that victims/survivors involved with suspects who have a history of animal abuse were more likely to appear afraid, apologetic, or nervous. This may be a further indication of a controlling environment and should raise the level of concern and risk for the safety of those in the home [20].

*4.5. Risk Management: Educating Services on the Link between Animal Abuse and DA.* Despite extensive research supporting a link between animal abuse and domestic abuse, there has been little effort to translate this into practice [19, 35, 37]. The research shows that animal abuse needs to be visible to services that are closely related to domestic abuse such as law enforcement and social and health services if they are to respond appropriately, particularly given that it may signal more severe domestic abuse and that it may be a barrier to seeking help [20, 23, 25, 35, 37]. Furthermore, the literature suggests that when animal abuse is present within a household or the perpetrator has a history of animal abuse, it is important that this is not minimized or ignored and instead taken into account when making law enforcement and violence prevention or treatment decisions [25]. An additional three studies also stress the importance of ensuring that domestic abuse organizations and shelters are equipped to serve the needs of women with pets so that women do not delay leaving an abusive partner due to concern for their pet's safety [16, 18, 20]. One study was able to translate its findings into a potential intervention that emphasizes the importance of approaching the issue in a nonaccusatory manner, involving parents to educate them on animal welfare, and understanding the context and motivations behind the harm [39].

Beyond the services responding in a crisis or to healing and recovery, there was also acknowledgment in the literature that animal abuse and the link to domestic abuse should be known to other practitioners such as teachers, doctors, veterinarians, and animal control officers [19, 23, 32, 35, 36]. Two studies argue that educating these services on this link could support early intervention in cases of DA [19, 36]. Specifically, veterinarians may act as frontline

professionals in the recognition of the link between animal abuse and domestic violence and have an important role to play in domestic abuse intervention [30, 36].

*4.6. Prevention: Childhood Trauma and Adult Antisocial Behavior.* Twelve studies discussed the link between childhood trauma and adult violent behaviors, arguing that children who commit animal abuse may have experienced other traumatic experiences [19, 23, 25, 29–34, 39, 40] and that childhood trauma is highly predictive of adult antisocial behaviors [15, 19, 31, 35]. Studies report that negative childhood experiences such as witnessing domestic violence or noneffective parenting may lead to children learning aggressive or callous behaviors or impair their ability to feel empathy [25, 35]. Furthermore, one study suggests that negative childhood experiences can affect the psychological functioning of children such that their regulatory processing is impaired [15]. Without treatment, these behaviors can continue into adulthood [15, 25, 35]. It is, therefore, argued that child welfare and health services should assess for animal cruelty when responding to reports of disruptive or concerning behaviors and treat these accordingly to prevent further violence [23, 35].

## 5. Study 2: Sex Offending and Animal Abuse

A total of 2280 studies were extracted from Medline (Ovid), Scopus, and Web of Science. Of these, 656 references were removed due to duplication, leaving a total of 1624 studies to be screened based on title and abstract. Out of these, 1585 publications were deemed not relevant for this study, leaving 38 to be assessed for eligibility based on a full-text review. Ultimately, 15 articles were considered relevant and are included in this study (see Figure 2). The search of the grey literature did not yield any relevant texts that had not already been found through the database search. A list of articles and their details included in study 2 can be found in Table 2.

*5.1. Overview of Studies.* The majority of the studies utilized a cross-sectional study methodology, with ten of the 15 included studies utilizing this study design [41, 42, 45–49, 51, 53, 55]. One study utilized a cohort study design [43] and aimed to investigate relationships among family risk factors, childhood firesetting and animal cruelty, and adolescent delinquency. Another was a case-series study [56] that presented three cases of bestiality among sexual offenders committed under forensic commitment schemes. A qualitative study reviewed 450 bestiality-related arrests to explore patterns of offending, offender characteristics, and how cases were adjudicated [44].

Four of the included studies focused on inmates at medium and maximum-security prisons to explore the effects of childhood animal sexual abuse on adult criminal behaviors [46, 47, 54, 55]. Two focused on sexually violent criminals to assess the effects of a history of animal sexual abuse on future criminal behavior [48, 49].

Multiple studies focused their attention on young children. For example, Ascione et al. [41] studied cruelty to animals in normative, sexually abused, and outpatient psychiatric children between the ages of 6 and 12 years. Jory et al. [45] studied the characteristics of juvenile offenders admitting to sexual activity with nonhuman animals. Another study focused on predicting animal abuse and other disruptive behaviors based on maladaptive parenting [47].

Additionally, two literature reviews focused on the link between animal abuse/animal sexual abuse and other abnormal sexual behaviors in a human services setting were included as well [51, 56].

*5.2. Risk Assessment: Animal Sex Abuse and Other Abnormal/Violent Sexual Behaviors.* The research articles showed a strong link between animal sex abuse and other abnormal or violent sexual behaviors, with 10 of the 15 included studies finding a link between the two [42, 45, 46, 49–51, 53–56]. Nine studies reported that animal sex abuse is often comorbid with other abnormal, coercive, and violent sexual behaviors including sexual assault, torture, necrophilia, and solicitation for sex with animals [42, 45, 49–51, 53, 55, 56].

One explanation for this link relates to the motivation for animal sex abuse. Research reports that animal sex abuse committed out of a desire for anger, fun, [45, 46, 53, 54], or cruelty [41, 51] is more predictive of other violent and abnormal sexual behaviors. This research suggests that animal abuse based on these motivations should be conceptualized in the same way that other violent crimes are conceptualized and that the psychology behind these motivations could explain the links to other abnormal behaviors [46, 51, 54].

*5.3. Risk Management: Risk Management and Service Response.* Despite strong support demonstrating a link between animal sex abuse and other abnormal or violent sexual behaviors [42, 46, 49–51, 54, 56], knowledge of this link has not been widely translated into practice [42, 44, 47, 50, 51, 56]. Seven studies commented on the necessity to educate services that are closely related to sexual abuse—domestic abuse and sexual violence services, medical and healthcare services, and police—as well as those more peripherally associated with sexual violence and abuse, such as animal health and welfare services, and education services. Training of these services is important as it may be veterinarians, police, nurses, teachers, counsellors, and crisis workers who human victims disclose the abuse or who become aware of the abuse as a result of interactions with the animals. These services and individuals need to be aware of the heightened risks of harm to others and associated other abnormal sexual behaviors that may exist when animal sex abuse is identified. The outcome would be to improve the detection and response to these behaviors [42, 44, 47, 50, 51, 53, 56]. Specifically, four studies argue that law enforcement and mental health workers should enquire about other abnormal sexual behaviors when presented with animal sex abuse to better intervene and treat these

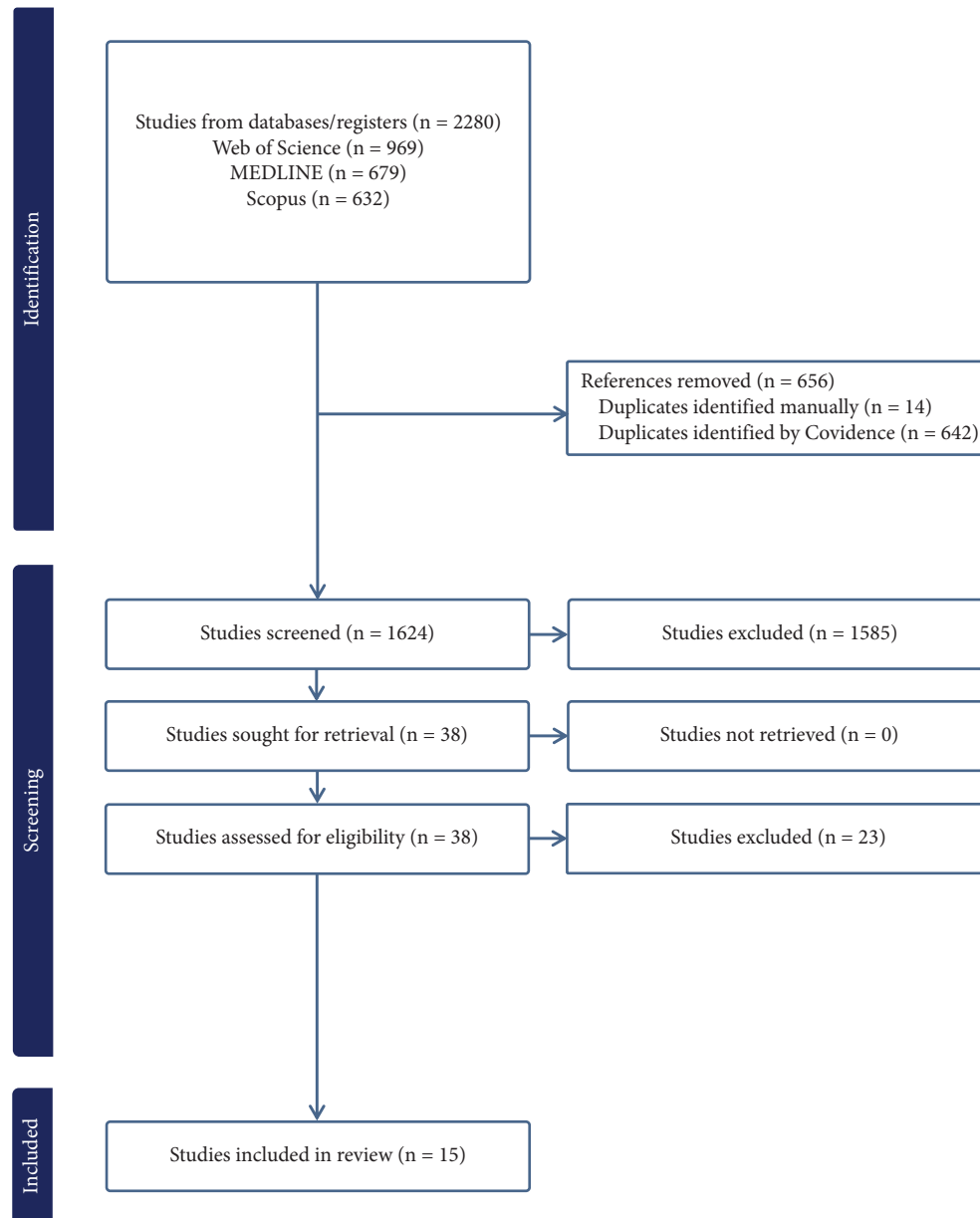


FIGURE 2: Flowchart for selection of eligible research articles for second search.

behaviors [47, 50, 51, 56]. Furthermore, two studies stressed the importance of cross-reporting by law enforcement, social services, medical, and veterinary professionals when presented with animal sex abuse to assess for other possible risks to the perpetrator's partner and children [44, 53].

**5.4. Prevention: Childhood/Youth Animal Abuse.** There has been significant research exploring childhood animal abuse or animal sex abuse as a predictor of adult abnormal or violent sexual behaviors [33, 42, 43, 45–49, 54]. Extensive research has identified animal abuse as one of the triad of behaviors, along with fire setting and bed wetting, that may signify trauma and the development of disruptive sexual or nonsexual behaviors in children [33, 42, 43] or other trauma-related behavioral difficulties [43, 48]. Four studies

reported childhood animal sex abuse as a precursor to adult domestic abuse or violent sexual behaviors [45, 47, 48, 54]. An additional study found that sexually violent criminals with a history of animal sex abuse were more likely to report a history of childhood sexual victimization than those without a history of animal sex abuse [49]. Thus, these studies posit that reports of animal sex abuse among children should be taken seriously to prevent the development of further violent or abnormal sexual or nonsexual behaviors [43, 46, 47].

## 6. Discussion

We take the opportunity in the discussion to compare the different literature and the implications of the studies for risk assessment and risk management.

TABLE 2: Summary of extracted publications for sex offending and animal abuse study.

Reference	Study design	Study population/data	Findings
[41]	Cross-sectional study	Maternal caregivers of 1433 6- to 12-year-old children	Children who reported cruelty to animals or touching animal's sex parts were more likely to have physical abuse or parental physical fighting than children who did not report these behaviors
[42]	Cross-sectional study	292,649 juvenile offenders	As only the male gender and being a victim of sexual abuse increased the odds of evidencing both animal cruelty and firesetting behavior substantially above the odds for each behavior individually, there thus appears to be little that is unique to the co-occurrence
[43]	Qualitative study	363 mothers and one of their children between the ages of 6 and 12	Marital violence, paternal pet abuse, and paternal drinking were related to firesetting, whereas exposure to marital violence and paternal and maternal harsh parenting were associated with animal cruelty. Regression analyses indicated that after controlling for conduct disorder, firesetters were 3.0 times at risk of juvenile court referral and 3.3 times at risk of arrest for a violent crime. Analysis of self-reports of delinquency replicated these results. Animal cruelty was related to self-reported violent crime. These findings indicate that family variables increase the likelihood of childhood firesetting and animal cruelty and that these behaviors are related to adolescent delinquency
[44]	Cross-sectional study	456 arrests for bestiality-related incidents in the United States from 1975 to 2015	The results suggest that animal sex offending may be linked to other criminal behavior, and involves a spectrum of sexual acts, including coercive, violent, and nonviolent penetration; solicitation for sex with animals; and deviant behavior including torture and necrophilia. Findings of concern were that 31.6% of animal sex offenders also sexually offended children and adults; 52.9% had a prior or subsequent criminal record involving human sexual abuse, animal abuse, interpersonal violence, substances, or property offenses; and only 39.1% of arrests involving the direct sexual abuse of animals resulted in prosecution
[45]	Cross-sectional study	381 institutionalized, adjudicated, male youth offenders (mean age 16.9 years) who completed an anonymous self-report questionnaire	The study found that 96% of the juveniles who had engaged in sex with nonhuman animals also admitted to sex offenses against humans and reported more offenses against humans than other sex offenders their same age and race
[46]	Cross-sectional study	261 inmates at medium- and maximum-security prisons in a southern state	Participants who abused animals at an earlier age and those who did so out of anger or for fun were more likely to repeat the offense. Regression analyses revealed that abusing an animal out of fun in their youth was the most statistically salient motive for predicting later interpersonal violence as adults
[47]	Cross-sectional study	261 male inmates at medium- and maximum-security prisons in a southern state	More than half of the sample reported they had shot animals, and almost half had either kicked or hit them. About one in five said they had choked animals, and about one in seven said they had either drowned, burned, or had sex with them. Regression analyses revealed that drowning and having sex with an animal was predictive of later interpersonal violence as adults
[48]	Cross-sectional study	180 male inmates at medium- and maximum-security prisons in a southern state	The results revealed that respondents who had engaged in childhood bestiality were more likely to commit adult interpersonal crimes on two or more occasions as compared to those who had not engaged in bestiality
[49]	Cross-sectional study	1248 sexually violent predators (SVPs) in the state of Virginia between the years 2003 and 2017	Of 1,248 SVPs, 33 (2.6%) had a history of engaging in bestiality. SVPs with a history of bestiality were significantly more likely to be victims of childhood sexual abuse, to engage in nonsexual animal abuse, and to have committed child sexual abuse. They were most likely to report sexual contact with dogs and demonstrated a breadth of other atypical sexual behavior

TABLE 2: Continued.

Reference	Study design	Study population/data	Findings
[50]	Literature review	Animal maltreatment legislation from ancient civilization to the present day in the United States	The forensic assessment of animal abusers may become more commonplace if courts pursue the psychological evaluation of offenders, as is increasingly described in state statutes. Such evaluations, or FAMEs, represent a unique and emerging field in forensic mental health
[51]	Literature review	A summary of the history of psychiatric interest in and research of animal cruelty, which spanned from the early 1800s to the present day and involved various theories, methods, and findings	Utilizing current research on human-animal sexual interaction, we propose a classification scheme for describing individuals who engage in bestiality based on their motivation. In this classification scheme, motivations for bestiality include affection/intimacy seeking, situational, secondary gain, sexual violence/cruelty, and other
[52]	Case-series study	3 cases were identified during an extensive file review of medical records, official criminal histories, police reports, parole reports, and alienist reports of 84 sexual offenders	The case series demonstrates the range of animal partners, sexual acts, and comorbid paraphilic and nonparaphilic diagnoses in individuals who report a history of bestiality. In addition, it helps clarify potential motivations for sex with animals and how such motivations may influence the forensic psychiatric assessment of offenders who have sex with animals
[53]	Cross-sectional study	The study examined a subsample of 150 adult males arrested for animal cruelty, neglect, or sexual abuse in the U.S. between 2004 and 2009	The study found that 41% of the offenders were arrested for interpersonal violence at least once, 18% were arrested for a sex offense such as rape or child molestation, and 28% were arrested for another interpersonal crime such as violating a restraining order or harassment
[54]	Cross-sectional study	180 inmates at one medium and one maximum-security prison in a southern state	Almost two-thirds of the inmates reported engaging in childhood animal cruelty for fun, whereas almost one-fourth reported being motivated either out of anger or imitation. Only one-fifth of the respondents reported they had committed acts of animal cruelty because they hated the animal
[55]	Cross-sectional study	The study compared the developmental experiences of 269 sexual offenders (137 rapists and 132 child sexual abusers) who were recruited from the Colorado Department of Corrections	The study found that child sexual abusers reported more frequent experiences of child sexual abuse (73%), early exposure to pornography (65% before age 10), an earlier onset of masturbation (60% before age 11), and sexual activities with animals (38%) than rapists

Table 3 highlights that there were some significant differences between the literature found in the first and second studies primarily relating to the different lenses that were applied (see Table 3). Most of the literature in the first search was written through a social work and domestic abuse lens. Consequently, most of these articles tended to focus on domestic abuse and its co-occurrence with pets and pet abuse rather than more general animal abuse. Additionally, there were discussions about how threats or harm to animals as a tactic of domestic abuse impacts help-seeking behaviors. The literature from the second search generally utilized a forensic psychology lens and focused on criminal offender populations. This search included animal abuse of all kinds and tended to focus more on prediction, retrospection, and theoretical observations. Interestingly, there were cross-over articles in the literature on childhood sex abuse of animals that suggested that it could be a precursor to adult domestic abuse or other violent behaviors [47, 48, 54]. This mirrors the “violence graduation hypothesis” (VGH), a theory that posits that perpetrators first commit violence against animals and then “graduate” to violence against humans [57]. However, other studies [25, 26, 35, 38] are better reflected in an alternative theory to explain the intersection of animal mistreatment and violence towards humans, the “generality of deviance hypothesis” (GDH). Rather than viewing animal mistreatment as something that precedes violence towards humans, the GDH views violence towards animals and violence towards humans as part of an array of violent and nonviolent antisocial and criminal behaviors that perpetrators often engage in, sometimes concurrently [52, 57]. In cases where animal abuse is happening in the context of DA, the GDH may, therefore, be a more applicable theory.

Although both bodies of literature discussed motivations for animal abuse, these varied between the groups. The articles from the first search tended to view animal abuse as a part of domestic abuse; thus, the primary motivations for the abuse were generally to exert control over or create fear in partners and children. The articles from the second search generally presented animal abuse as a standalone, abnormal behavior. Subsequently, the perpetrators’ primary motivations were related to the feelings that might drive the abuse, such as anger, cruelty, or a desire for “fun” at the expense of the animal. In this second search, motivations were directly linked to the animal abuse, and rather than any indirect effects, the animal abuse may have had on other persons.

Despite these differences, there were several common themes found between the two bodies of literature. First, both contained discussion about the links between animal abuse/animal sex abuse and other violent or abnormal behaviors. As discussed above, there were two different conceptualizations of this relationship: a method to control others or to harm the animal and associated criminally harmful behaviors. While the domestic abuse literature emphasizes the former (controlling others), there is an argument that posits that those perpetrating animal abuse in the context of domestic abuse and animal sex abuse should be conceptualized in the same way. This is namely that it draws on similar motivations or mindsets which are about

human aggression and point to a propensity for abnormal and often criminal behavior. This argument may have been underestimated in the literature on domestic abuse and the associated risk assessment. The motivations and mindsets surrounding why people abuse animals in the context of DA may also be understood in relation to typologies of violence under which DA perpetrators have been categorized. These typologies include perpetrators who are generally violent and antisocial, perpetrators who are situational violent towards their families (“family-only offenders”) [58] and perpetrators who use coercive control [59]. The typologies of violence in relation to animals specifically have been under-researched, as noted by Giesbrecht et al. [57]. It may, therefore, be beneficial to understand how the abuse of animals fits into these typologies, and going further, whether these typologies and motivations for abuse are differentiated based on the kind of animal being abused and the victim-survivors’ relationship to that animal—e.g., farm animals vs. pets vs. wild animals.

A second commonality in the literature is that both animal abuse and animal sex abuse may point to earlier forms of trauma. People who commit these acts may be more likely to have experienced other trauma, particularly in their childhood. The literature in this area, therefore, suggests that abuse of animals by children may be a red flag (risk indicator) for other problems within the household [19]. Similarly, adults committing aggressive and abusive acts towards animals may also be people who are carrying profound childhood trauma impacting on their ability to regulate their behaviors [15] and requiring interventions that address these earlier destructive experiences. This is uncomfortable territory for those in the domestic abuse arena, where the “psychologizing” of the abuser to explain controlling behaviors towards others (in this case animal abuse) has been shied away from as a distraction, taking the focus from the victim to excusing the behavior of the perpetrator. This is not the focus of perpetrator/men’s behavior change programs [57] but may nevertheless provide an avenue for further potentially individualized exploration for men who use violence where they have other complex needs.

A third common area in the literature lay in the identification of animal abuse or animal sex abuse as risk indicators for domestic abuse or other violent or abnormal behaviors. However, the literature gave this issue only cursory or superficial attention and did not discuss the implications of these risk factors for risk assessment frameworks nor the effectiveness of these risk factors in detecting domestic abuse or other forms of violence. A small number of the reviewed articles posit that harm to animals is associated with increased severity [16, 18, 20]. However, a detailed cluster analysis of other indicators of high risk with animal abuse was not evident in the articles.

However, one review found that despite multiple studies indicating an association between domestic violence and animal cruelty, there was also evidence that this association was not statistically significant [7]. This strong evidence of co-occurrence may indicate a gap in data where, for example, police or health services may not thoroughly explore

TABLE 3: Differences between literature from first and second studies.

Study	Study
1: domestic abuse	2: sex offending
Generally used a DA/social work lens	Generally used a forensic psychology lens
Explored animal abuse within the context of DA, and thus, many studies focused on victims or perpetrators of DA	Explored the nexus between psychology and crime, and thus, many studies focused on a criminal population with a retrospective study design
Focuses on tangible observations	Focuses on theory and prediction
Animal abuse conceptualized as a tactic of abuse	Focuses on animal sex abuse as a standalone and abnormal behavior
(i) Motivations were explored for power or control over partner	(i) Looked at in isolation, not as a tactic of abuse against human victims
	(ii) Motivations directly related to the animal rather than a human victim
Focused on pets and pet abuse	More focused on animals in general



and document. Ultimately, this apparent contradiction in statistical evidence demonstrates that the field would benefit from further research, as well as the development of tools that are able to detect the occurrence of both domestic and sexual abuse involving animals.

Nevertheless, multiple articles suggest raising awareness of the links between threats or harm to animals and domestic abuse and encourage formulating risk management strategies in response to this link using referral pathways between services both specialist and mainstream responding to domestic abuse [60]. Internationally, research on “The Link” between human and animal-directed violence has been underway for at least two decades [61]. The Link refers to the overlap of DA with child abuse, elder abuse, and animal abuse and shows that animal cruelty occurs more frequently in families where DA is also occurring [44]. This is a fourth area of commonality where the literature demonstrates that there is a link, but little focus on first responders to DA being educated about this link and using it in risk assessment or management. It may be that until more risk assessment tools include animal abuse (see Lamb et al. [7]), training developments will be inconsistent and perfunctory.

## 7. Limitations

The literature from both searches provided strong evidence of a link between animal abuse and violence against humans, and animal sex abuse and other abnormal sexual behaviors, respectively. However, there were some clear limitations to the research methodologies used in both searches. Definitions of animal abuse were sometimes vague—verbal abuse or threats were not well described. Some abusive behaviors may be more serious or common than others; thus, generalizing all types of animal abuse into one category may obfuscate possible variations. The Partner’s Treatment of Animals Scale (PTAS) [62] has been proposed as one way to consistently define and measure animal maltreatment in abusive romantic relationships. In the context of risk assessment, having better descriptions and explanations of animal abuse, such as within the PTAS, may assist in extracting the most pertinent and accurate information. Additionally, in the second search, the distinction between the types of animals being abused, whether it was a pet, livestock, or wild, was sometimes unclear. It is important to note that as a society pets, livestock and wild animals are treated very differently, and attachments may vary. It is, therefore, possible that behaviors towards domesticated animals should be conceptualized differently than livestock or wild animals.

## 8. Conclusion

In the context of risk assessment, the literature indicates that threats or harm towards animals, including the sex abuse of animals, has the potential to be used in four ways: (1) animal abuse as an indicator of domestic abuse; (2) childhood animal abuse as a signal of other problems within a household; (3) animal abuse as an indicator of more severe

domestic abuse; and (4) the inclusion of pet abuse as a unique form of domestic abuse.

The comparison of the literature on animal abuse and animal sex abuse highlighted not only both interesting differentiations theoretically and methodologically but also some important similarities. Gaps in both literature have been highlighted in relation to risk assessment, risk management, and the lack of identification and training in this neglected area of the service system prevention and response. In short, the research posits that all animal abuse, as a distinct form of violence exposure and treating it as such will allow us to more holistically prevent, assess, or treat other violent behaviors such as domestic abuse [22, 37].

## Data Availability

The data supporting the findings of this study are available at the locations cited in the reference section.

## Additional Points

*What is Known about This Topic?* (i) There is a link between violence towards animals and violence towards humans. (ii) The abuse of animals can indicate that a domestic abuse situation is high risk. (iii) The abuse of animals can be an indicator of past experiences of trauma. *What This Paper Adds.* (i) Physical and/or sexual abuse of animals should be more widely adopted and measured as a risk factor within police risk assessments. (ii) There is a gap in the literature demonstrating a need for further research on risk management tools and training in relation to animals. (iii) Treating animal abuse as a distinct form of violence exposure will facilitate more holistic prevention, assessment, and treatment of violent behaviors including domestic abuse.

## Conflicts of Interest

The authors declare that they have no conflicts of interest.

## Acknowledgments

The research and this report have been prepared by members of the research team at the University of Melbourne. The research team acknowledges the funding support of Victoria Police enabling this important piece of research. This study was funded through the University of Melbourne School of Social Work and Victoria Police. Open access publishing facilitated by the University of Melbourne, as part of the Wiley—The University of Melbourne agreement via the Council of Australian University Librarians.

## References

- [1] Animals Australia, “A ‘Bloody Business’: routine, widespread and industry-facilitated cruelty to cattle exposed,” 2011, <https://animalsaustralia.org/latest-news/live-export-investigation-on-four-corners/>.
- [2] R. Fitzgerald, “Zoologist Adam Britton pleads guilty to Supreme Court charges including bestiality,” 2023, <https://www.abc.net.au/news/2023-09-25/nt-adam-britton-pleads-guilty-to-bestiality-in-supreme-court/102896286-animal/>.

- [3] R. V. Alcorn, "ABCA 182 (CanLII)," 2015, <https://canlii.ca/t/gj7vt>.
- [4] S. Offin and R. White, "Calgary woman who tortured and killed cats receives 6.5 years, Canada's largest animal abuse sentence," 2023, <https://globalnews.ca/news/9961198/calgary-woman-who-tortured-and-killed-cats-awaits-sentencing/>.
- [5] Doj, "Former sailor sentenced to federal prison for distributing child pornography and bestiality videos," 2023, <https://www.justice.gov/usao-ndga/pr/former-sailor-sentenced-federal-prison-distributing-child-pornography-and-bestiality>.
- [6] G. Bateson, *Steps to an Ecology of Mind*, University of Chicago Press, Chicago, IL, USA, 1972.
- [7] K. Lamb, K. Forsdike, C. Humphreys, and K. Hegarty, "Drawing upon the evidence to develop a multiagency risk assessment and risk management framework for domestic violence," *Journal of Gender-Based Violence*, vol. 6, no. 1, pp. 173–208, 2022.
- [8] B. J. Walton-Moss, J. Manganello, V. Frye, and J. C. Campbell, "Risk factors for intimate partner violence and associated injury among urban women," *Journal of Community Health*, vol. 30, no. 5, pp. 377–389, 2005.
- [9] L. Richards, *Getting Away with it: A Strategic Overview of Domestic Violence Sexual Assault and 'Serious' Incident Analysis*, Springer, Berlin, Germany, 2004.
- [10] L. M. Graham, K. M. Sahay, C. F. Rizo, J. T. Messing, and R. J. Macy, "The validity and reliability of available intimate partner homicide and reassault risk assessment tools: a systematic review," *Trauma, Violence, & Abuse*, vol. 22, no. 1, pp. 18–40, 2019.
- [11] State of Victoria, *Victorian Royal Commission into Family Violence: Summary and Recommendations*, Victorian Government, Victoria, Australia, 2016.
- [12] H. Arksey and L. O'Malley, "Scoping studies: towards a methodological framework," *International Journal of Social Research Methodology*, vol. 8, no. 1, pp. 19–32, 2005.
- [13] D. Levac, H. Colquhoun, and K. K. O'Brien, "Scoping studies: advancing the methodology," *Implementation Science*, vol. 5, no. 1, p. 69, 2010.
- [14] A. C. Tricco, E. Lillie, W. Zarin et al., "PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation," *Annals of Internal Medicine*, vol. 169, no. 7, pp. 467–473, 2018.
- [15] E. Alleyne and C. Parfitt, "Adult-perpetrated animal abuse: a systematic literature review," *Trauma, Violence, & Abuse*, vol. 20, no. 3, pp. 344–357, 2019.
- [16] F. R. Ascione, C. V. Weber, T. M. Thompson, J. Heath, M. Maruyama, and K. Hayashi, "Battered pets and domestic violence: animal abuse reported by women experiencing intimate violence and by nonabused women," *Violence Against Women*, vol. 13, no. 4, pp. 354–373, 2007.
- [17] J. E. Barnes, B. W. Boat, F. W. Putnam, H. F. Dates, and A. R. Mahlman, "Ownership of high-risk ('vicious') dogs as a marker for deviant behaviors: implications for risk assessment," *Journal of Interpersonal Violence*, vol. 21, no. 12, pp. 1616–1634, 2006.
- [18] B. J. Barrett, A. Fitzgerald, R. Stevenson, and C. H. Cheung, "Animal maltreatment as a risk marker of more frequent and severe forms of intimate partner violence," *Journal of Interpersonal Violence*, vol. 35, no. 23–24, pp. 5131–5156, 2020.
- [19] M. A. Bright, M. S. Huq, T. Spencer, J. W. Applebaum, and N. Hardt, "Animal cruelty as an indicator of family trauma: using adverse childhood experiences to look beyond child abuse and domestic violence," *Child Abuse & Neglect*, vol. 76, pp. 287–296, 2018.
- [20] A. M. Campbell, S. L. Thompson, T. L. Harris, and S. E. Wiehe, "Intimate partner violence and pet abuse: responding law enforcement officers' observations and victim reports from the scene," *Journal of Interpersonal Violence*, vol. 36, no. 5–6, pp. 2353–2372, 2018.
- [21] M. Cleary, D. K. Thapa, S. West, M. Westman, and R. Kornhaber, "Animal abuse in the context of adult intimate partner violence: a systematic review," *Aggression and Violent Behavior*, vol. 61, Article ID 101676, 2021.
- [22] E. A. Collins, A. M. Cody, S. E. McDonald, N. Nicotera, F. R. Ascione, and J. H. Williams, "A template analysis of intimate partner violence survivors' experiences of animal maltreatment: implications for safety planning and intervention," *Violence Against Women*, vol. 24, no. 4, pp. 452–476, 2018.
- [23] S. Degue and D. Dilillo, "Is animal cruelty a 'red flag' for family violence? Investigating co-occurring violence toward children, partners, and pets," *Journal of Interpersonal Violence*, vol. 24, no. 6, pp. 1036–1056, 2009.
- [24] A. J. Fitzgerald, B. J. Barrett, R. Stevenson, and C. H. Cheung, "Animal maltreatment in the context of intimate partner violence: a manifestation of power and control?" *Violence Against Women*, vol. 25, no. 15, pp. 1806–1828, 2019.
- [25] E. Gullone, "Conceptualising animal abuse with an antisocial behaviour framework," *Animals*, vol. 1, no. 1, pp. 144–160, 2011.
- [26] C. A. Hartman, T. Hageman, J. H. Williams, and F. R. Ascione, "Intimate partner violence and animal abuse in an immigrant-rich sample of mother-child dyads recruited from domestic violence programs," *Journal of Interpersonal Violence*, vol. 33, no. 6, pp. 1030–1047, 2018.
- [27] B. Jegatheesan, M. J. Enders-Slegers, E. Ormerod, and P. Boyden, "Understanding the link between animal cruelty and family violence: the bioecological systems model," *International Journal of Environmental Research and Public Health*, vol. 17, no. 9, p. 3116, 2020.
- [28] R. T. Ladny and L. Meyer, "Traumatized witnesses: review of childhood exposure to animal cruelty," *Journal of Child & Adolescent Trauma*, vol. 13, no. 4, pp. 527–537, 2020.
- [29] R. Lee-Kelland and F. Finlay, "Children who abuse animals: when should you be concerned about child abuse? A review of the literature," *Archives of Disease in Childhood*, vol. 103, no. 8, pp. 801–805, 2018.
- [30] C. Longobardi and L. Badenes-Ribera, "The relationship between animal cruelty in children and adolescent and interpersonal violence: a systematic review," *Aggression and Violent Behavior*, vol. 46, pp. 201–211, 2019.
- [31] F. S. McEwen, T. E. Moffitt, and L. Arseneault, "Is childhood cruelty to animals a marker for physical maltreatment in a prospective cohort study of children?" *Child Abuse & Neglect*, vol. 38, no. 3, pp. 533–543, 2014.
- [32] D. Mota-Rojas, S. Monsalve, K. Lezama-Garcia et al., "Animal abuse as an indicator of domestic violence: one Health, One Welfare approach," *Animals*, vol. 12, no. 8, p. 977, 2022.
- [33] C. Miller, "Childhood animal cruelty and interpersonal violence," *Clinical Psychology Review*, vol. 21, no. 5, pp. 735–749, 2001.
- [34] K. Muri, E. M. Augusti, M. Bjornholt, and G. S. Hafstad, "Childhood experiences of companion animal abuse and its co-occurrence with domestic abuse: evidence from a national youth survey in Norway," *Journal of Interpersonal Violence*, vol. 37, no. 23–24, pp. NP22627–NP22646, 2022.

- [35] M. Muscari, "Juvenile animal abuse: practice and policy implications for PNPs," *Journal of Pediatric Health Care*, vol. 18, no. 1, pp. 15–21, 2004.
- [36] X. Newland, M. Boller, and E. Boller, "Considering the relationship between domestic violence and pet abuse and its significance in the veterinary clinical and educational contexts," *New Zealand Veterinary Journal*, vol. 67, no. 2, pp. 55–65, 2019.
- [37] M. L. Randour, M. Smith-Blackmore, N. Blaney, D. DeSousa, and A. A. Guyony, "Animal abuse as a type of trauma: lessons for human and animal service professionals," *Trauma, Violence, & Abuse*, vol. 22, no. 2, pp. 277–288, 2021.
- [38] C. A. Tomlinson, J. L. Murphy, A. Matijczak, A. Califano, J. Santos, and S. E. McDonald, "The link between family violence and animal cruelty: a scoping review," *Social Sciences*, vol. 11, no. 11, p. 514, 2022.
- [39] L. Wauthier and J. M. Williams, "A qualitative study of children's accounts of cruelty to animals: uncovering the roles of trauma, exposure to violence, and attachment," *Journal of Interpersonal Violence*, vol. 37, no. 9–10, pp. NP6405–NP6438, 2020.
- [40] L. M. Wauthier and J. M. Williams, "Understanding and conceptualizing childhood animal harm: a meta-narrative systematic review," *Anthrozoös*, vol. 35, no. 2, pp. 165–202, 2022.
- [41] F. R. Ascione, W. N. Friedrich, J. Heath, and K. Hayashi, "Cruelty to animals in normative, sexually abused, and outpatient psychiatric samples of 6- to 12-year-old children: relations to maltreatment and exposure to domestic violence," *Anthrozoös*, vol. 16, no. 3, pp. 194–212, 2003.
- [42] M. T. Baglivio, K. T. Wolff, M. DeLisi, M. G. Vaughn, and A. R. Piquero, "Juvenile animal cruelty and firesetting behaviour," *Criminal Behaviour and Mental Health*, vol. 27, no. 5, pp. 484–500, 2017.
- [43] K. D. Becker, J. Stuewig, V. M. Herrera, and L. A. McCloskey, "A study of firesetting and animal cruelty in children: family influences and adolescent outcomes," *Journal of the American Academy of Child & Adolescent Psychiatry*, vol. 43, no. 7, pp. 905–912, 2004.
- [44] M. J. Edwards, "Arrest and prosecution of animal sex abuse (bestiality) offenders in the United States, 1975–2015," *The journal of the American Academy of Psychiatry and the Law*, vol. 47, no. 3, pp. 335–346, 2019.
- [45] B. Jory, W. Fleming, and D. L. Burton, "Characteristics of juvenile offenders admitting to sexual activity with nonhuman animals," *Society and Animals*, vol. 10, no. 1, pp. 31–45, 2002.
- [46] C. Hensley and S. E. Tallichet, "The effect of inmates' self-reported childhood and adolescent animal cruelty: motivations on the number of convictions for adult violent interpersonal crimes," *International Journal of Offender Therapy and Comparative Criminology*, vol. 52, no. 2, pp. 175–184, 2008.
- [47] C. Hensley and S. E. Tallichet, "Childhood and adolescent animal cruelty methods and their possible link to adult violent crimes," *Journal of Interpersonal Violence*, vol. 24, no. 1, pp. 147–158, 2009.
- [48] C. Hensley, S. E. Tallichet, and E. L. Dutkiewicz, "Childhood bestiality: a potential precursor to adult interpersonal violence," *Journal of Interpersonal Violence*, vol. 25, no. 3, pp. 557–567, 2010.
- [49] B. Holoyda, R. Gosal, and K. M. Welch, "Bestiality among sexually violent predators," *The journal of the American Academy of Psychiatry and the Law*, vol. 48, no. 3, pp. 358–364, 2020.
- [50] B. J. Holoyda, "Animal maltreatment law: evolving efforts to protect animals and their forensic mental health implications," *Behavioral Sciences & the Law*, vol. 36, no. 6, pp. 675–686, 2018.
- [51] B. J. Holoyda and W. J. Newman, "Childhood animal cruelty, bestiality, and the link to adult interpersonal violence," *International Journal of Law and Psychiatry*, vol. 47, pp. 129–135, 2016.
- [52] A. Arluke, J. Levin, C. Luke, and F. Ascione, "The relationship of animal abuse to violence and other forms of antisocial behavior," *Journal of Interpersonal Violence*, vol. 14, no. 9, pp. 963–975, 1999.
- [53] L. Levitt, T. A. Hoffer, and A. B. Loper, "Criminal histories of a subsample of animal cruelty offenders," *Aggression and Violent Behavior*, vol. 30, pp. 48–58, 2016.
- [54] J. C. Overton, C. Hensley, and S. E. Tallichet, "Examining the relationship between childhood animal cruelty motives and recurrent adult violent crimes toward humans," *Journal of Interpersonal Violence*, vol. 27, no. 5, pp. 899–915, 2012.
- [55] D. A. Simons, S. K. Wurtele, and R. L. Durham, "Developmental experiences of child sexual abusers and rapists," *Child Abuse & Neglect*, vol. 32, no. 5, pp. 549–560, 2008.
- [56] B. J. Holoyda, "Bestiality in forensically committed sexual offenders: a case series," *Journal of Forensic Sciences*, vol. 62, no. 2, pp. 541–544, 2017.
- [57] C. J. Giesbrecht, R. Stevenson, L. Zmud, and A. J. Fletcher, "Domestic violence and companion animals," in *The Encyclopedia of Domestic Violence*, T. Shackelford, Ed., Springer, Berlin, Germany, 2023.
- [58] A. Holtzworth-Munroe and G. L. Stuart, "Typologies of male batterers: three subtypes and the differences among them," *Psychological Bulletin*, vol. 116, no. 3, pp. 476–497, 1994.
- [59] J. B. Kelly and M. P. Johnson, "Differentiation among types of intimate partner violence: research update and implications for interventions," *Family Court Review*, vol. 46, no. 3, pp. 476–499, 2008.
- [60] G. M. Ferreira and J. M. Williams, *Understanding Animal Abuse and How to Intervene with Children and Young People: A Practical Guide for Professionals Working with People and Animals*, Taylor & Francis, New York, NY, USA, 2023.
- [61] F. R. Ascione and P. Arkow, *Child Abuse, Domestic Violence, and Animal Abuse: Linking the Circles of Compassion for Prevention and Intervention*, Purdue University Press, West Lafayette, IN, USA, 1999.
- [62] A. Fitzgerald, B. Barrett, R. Shwom, R. Stevenson, and E. Chernyak, "Development of the partner's treatment of animals scale," *Anthrozoös*, vol. 29, no. 4, pp. 611–625, 2016.