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Alisic, E., Krishna, R.N., Groot, A., & Frederick, J.W. (2015). Children's mental health and wellbeing after parental intimate partner homicide: a systematic review. Clinical Child and Family Psychology Review, 18(4), 328-345. doi: 10.1007/s10567-015-0193-7

Children's Mental Health and Wellbeing after Parental Intimate Partner Homicide: A Systematic Review

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We would like to thank Dr Peter Sidebotham and three anonymous reviewers for their valuable comments on previous versions of the manuscript. Dr Alisic has been supported by the Netherlands Organisation for Scientific Research (Rubicon Fellowship 446-11-021) and the Australian National Health and Medical Research Council (Early Career Fellowship 1090229).

Abstract

When one parent kills the other, children are confronted with multiple losses, involving their attachment figures and their direct living environment. In these complex situations, potentially drastic decisions are made, for example, regarding new living arrangements and contact with the perpetrating parent. We aimed to synthesize the empirical literature on children's mental health and wellbeing after parental intimate partner homicide. A systematic search identified 17 relevant peer-reviewed articles (13 independent samples). We recorded the theoretical background, methodology, and sample characteristics of the studies, and extracted all child outcomes as well as potential risk and protective factors. Children's outcomes varied widely and included psychological, social, physical, and academic consequences (e.g., posttraumatic stress, attachment difficulties, weight and appetite changes, and drops in school grades). Potential risk and protective factors for children's outcomes included 10 categories of pre-, peri- and post-homicide characteristics such as cultural background of the family, whether the child witnessed the homicide, and the level of conflict between the families of the victim and the perpetrator. We integrated the findings into a conceptual model of risk factors to direct clinical reflection and further research.

Keywords: Children; Domestic Violence; Femicide; Grief; Homicide; Intimate Partner Violence; Physical Functioning; Posttraumatic Stress; Social Outcomes.

Children's mental health and wellbeing after parental intimate partner homicide: A systematic review

Every year almost half a million people die as a victim of homicide (UN Office on Drugs and Crime 2011). At least one in seven of these homicides are perpetrated by an intimate partner (Stöckl et al. 2013). If we conservatively estimate that 40% of the victims have children and that an average family involves two children, yearly over 55,000 children worldwide are bereaved by intimate partner homicide. In the USA alone, 3300 children are estimated to be affected every year (Lewandowski, McFarlane, Campbell, Gary, & Barenski 2004).

When one parent kills the other, the children are confronted with multiple losses. Not only is one parent deceased; the other parent is detained, has fled, or has committed suicide (Steeves & Parker 2007). The children often cannot continue to live at home: they lose their familiar living environment, sometimes including school and friends. Intimate partner homicide constitutes a combination of trauma and loss for children, which may bring about a number of persistent mental health and wellbeing problems.

Mental health and wellbeing consequences of trauma and loss

With regard to childhood trauma, the literature has traditionally focused on Posttraumatic Stress Disorder as an outcome. In the DSM-5, this disorder is described as a combination of at least five (for adolescents and adults) or four (for children younger than 6 years) symptoms of intrusion, avoidance, negative alterations in cognitions and mood, and alterations in arousal and reactivity. A recent meta-analysis showed that, on average, 16% of traumatized children developed PTSD (Alisic et al. 2014; based on the DSM-IV criteria). The rates differed according to the type of trauma, with higher rates found for children exposed to interpersonal trauma (e.g., assault) than for those exposed to non-interpersonal trauma (e.g., accidents).

These findings suggest that PTSD rates among children exposed to parental homicide may be well above 16%, and also beg the question which children will, and which children will not, develop these persistent reactions. Meta-analyses across trauma types suggest the importance of caregiver wellbeing (e.g., Alisic, Jongmans, Van Wesel, & Kleber 2011; Morris Gabert-Quillen, & Delahanty 2012) and social support (e.g., Trickey, Siddaway, Meiser-Stedman, Serpell, & Field 2012) in this regard.

Posttraumatic stress is not the only potential outcome after trauma, however. For example, Hoven et al. (2005) showed that children exposed to the World Trade Center attack in 2001 had levels of agoraphobia and separation anxiety that were at least as high as the levels of posttraumatic stress. There are also indications that trauma exposure is related to reduced levels of overall quality of life in children (Alisic, Van der Schoot, Van Ginkel, Kleber 2008), including drops in school performance (e.g., Paolucci, Genuis, & Violato 2001) and physical wellbeing (e.g., Graham-Bermann & Seng 2005). Accordingly, we would expect a negative impact of parental intimate partner homicide on children´s broader outcomes of daily wellbeing and functioning, influenced by several risk and protective factors in their pre-trauma history and current support environment.

Typical child reactions to the loss of a loved one are dysphoria and depressive symptoms, difficulties learning and concentrating in school, and inability to maintain previous levels of self-esteem or connectedness to social support figures (see Currier, Holland, & Neimeyer 2007 and Dowdney 2000 for overviews). In particular, the concepts of prolonged and traumatic grief have been proposed as specific responses in children. Prolonged grief refers to persistent severe distress (beyond six months after the loss) involving symptoms such as disbelief regarding the death, numbness, separation distress, and a sense that life is meaningless (see e.g., Spuij et al. 2012). Traumatic grief refers to a pathological combination of trauma and grief reactions: the child is overwhelmed by the trauma response and unable to

accomplish ‘normal grieving tasks’ (Brown & Goodman 2005). Eight of these normative tasks have been identified, with children expected to: (a) accept the reality and permanence of the death; (b) experience and cope with painful emotional reactions to the death; (c) adjust to changes in their lives and identity resulting from the death; (d) develop new relationships or deepen existing relationships to help cope with the death; (e) invest in new relationships and life-affirming activities as a means of moving forward; (f) maintain a continuing, appropriate attachment to the deceased loved one through activities such as reminiscing, remembering, and memorialization; (g) make meaning of the death, which can include coming to an understanding of why the person died; and, (h) continue through the normal developmental stages of childhood and adolescence (Goodman et al. 2004, p. 11). Children bereaved by parental intimate partner homicide have been reported to exhibit significant and persistent grief reactions (e.g., Eth & Pynoos 1994), but neither the extent of their grief reactions, nor their predictive factors, are well understood.

Compound effects

Children exposed to parental intimate partner homicide are simultaneously the child of a murderer and a victim. They are confronted with a unique combination of trauma, loss and hardship. The situation is compounded further by the fact that the children have not only lost a loved one, but also the person who would usually help them cope with the loss of a loved one (Gaensbauer et al. 1995). Even more so, this loss happened at the hands of the other parent. The homicide often results in an absence of guardianship, and can lead to conflict between relatives over the placement of the children and their contact with the perpetrating parent (Harris-Hendriks, Black, & Kaplan 2000). When children are placed with relatives of the victim, their own grief and traumatic stress symptoms may have a negative effect on caregiving practices and, in turn, children’s development. On the other hand, at times, the

family of the offending parent may condone the violence (Alisic et al. 2012). In these complex situations, decisions regarding children's futures and care arrangements must be made by professionals who are only sporadically exposed to these types of cases.

Need for a conceptual model

Professionals in clinical care and social services are in need of evidence-informed recommendations to guide their decision making and interventions for children bereaved by parental intimate partner homicide. While generic models for children's recovery from trauma and loss have been developed (e.g., La Greca, Silverman, Vernberg, & Prinstein 1996; Pynoos, Steinberg, & Piacentini 1999), these lack specificity for the unique challenges presented to children bereaved by parental intimate partner homicide. A conceptual model delineating the factors that may drive children's outcomes after parental intimate partner homicide specifically will allow empirical testing and can serve as a framework for structured decision making until such testing has been completed.

Aim of this review

The purpose of this paper is to evaluate and synthesize the current evidence on children's mental health and wellbeing after parental intimate partner homicide in order to develop a conceptual model that can direct further research, clinical reflection and decision making in such cases. The research questions that guided the current review were:

a) Which theoretical and methodological approaches have been used to study children's mental health and wellbeing after parental intimate partner homicide?
b) Which mental health and wellbeing outcomes have been identified in children bereaved by parental intimate partner homicide?
c) Which potential risk and protective factors for children's outcomes after parental intimate partner homicide have been identified?

Methods

Retrieval and selection of studies

The review was part of a larger systematic review on consequences of homicide within the family context; we conducted one systematic search for the larger project, after which we selected the papers involving parental intimate partner homicide. We identified relevant articles through systematic searches in five electronic databases: PsycINFO, PILOTS (a database of international traumatic stress literature managed by the US National Center for PTSD), CINAHL, PubMed, and EMBASE. Our search terms were broad to ensure no articles would be missed. We used the following Boolean logic: (((fatal OR kill*) AND (violence OR abuse OR maltreatment)) OR (uxoricide OR mariticide OR homicide OR filicide OR infanticide OR murder OR manslaughter)) AND (child* OR adolescent* OR sibling* OR youth* OR youngster* OR kid* OR toddler* OR preschooler* OR teen*). In addition we checked both forward and backward references for each of the selected papers and other relevant (review) articles. We restricted our searches to peer-reviewed papers published in English language journals between January 1st, 1980 and June 1st, 2014.

We included articles in our final selection if they described (a) empirical data collection (e.g., we excluded review articles and opinion pieces) on (b) mental health or wellbeing outcomes of parental intimate partner homicide in (c) study participants or clients younger than 19 years old. EA and RK conducted the screening and selection based on consensus (see Figure 1 for a flowchart).

- Please insert Figure 1 about here -

Coding and analysis of the studies

We extracted information from the studies in a standardized format. The initial coding was conducted by EA and RK. This coding was subsequently discussed in the full author team until we reached consensus. We extracted information in five domains. First we considered the theoretical background of the study, including whether theory was explicitly stated, whether the study had an explicit aim or hypotheses, and what information the study contained. Second, we recorded the design and methods of the study. Most importantly we noted a short description of the design and if/what standardized measures were used. Third, we described the sample in terms of demographics, location (country) and sample size. Fourth, we noted all outcomes that were recorded for the sample. A few studies also included children with other types of exposure (e.g., non-intimate partner homicide); results that were not specifically and wholly concerned with children exposed to intimate partner homicide were not included in our outcomes table. Finally, we recorded all potential risk and protective factors that were described by the authors of the articles. Because of the qualitative nature of many of the articles, we did not limit inclusion of these factors to those with effect sizes; rather we listed all reported outcomes and potential determinants.

Development of a conceptual model

While the list of factors that may affect children's outcomes is useful in order to understand the breadth of factors involved, it is not suited to identifying priorities for research or clinical practice. Therefore, based on the broader trauma, grief, domestic violence, and child development literature (e.g., Evans, Davies, & DiLillo 2008; La Greca et al. 1996; Pynoos et al. 1999; Rutter & Sroufe 2002; Scheeringa & Zeanah 2001; Wolfe, Crooks, Lee, McIntyre-

Smith, & Jaffe 2003) and our clinical experience, we extracted the elements that are most likely of importance and visualized them within a conceptual model.

Results

Out of 5848 initial search 'hits' containing 140 potentially eligible studies, we identified 17 articles that satisfied our criteria. The articles described 13 independent samples or cases (see Table 1 for an overview): 9 from the USA; 1 from the UK; 1 from the Czech Republic; 1 from the Netherlands; and 1 from India. In total, the studies involved 328 children from approximately 175 families (for the study by Malmquist 1986, no complete data on numbers of families were available).

- Please insert Table 1 about here -

Theoretical background and methodology of the studies

Three studies referred to guiding theoretical frameworks, such as family stress theory (Hill 1949; in Hardesty, Campbell, McFarlane, & Lewandowski 2008), social learning theory (Bandura & Walters 1963; in Burman & Allen-Meares 1994), and the theory of psychosocial development (Erikson 1968; in Burman & Allen-Meares 1994). Most studies did not use explicit theory or aims to guide the research; rather, the authors focused on describing clinical cases (see Table 1).

Of the 13 studies, 10 were case studies or case series (the largest including 35 children; Eth & Pynoos 1994), characterized by mostly qualitative descriptions. For example, Eth and Pynoos stated that no attempt was made to quantify symptoms or ascertain psychiatric diagnosis, even though they used a standardized interview approach. The three remaining studies involved larger samples, ranging from 60 to 146 children (Kaplan, Black, Hyman, & Knox 2001; Lewandowski et al. 2004; Van Nijnatten & Van Huizen 2004).

All studies involved convenience samples, except a) the study by Lewandowski and colleagues (2004), who identified cases through a search in Police records and b) the study by Van Nijnatten and Van Huizen (2004), who sourced reports from the Dutch Child Protection Board. In most instances, the convenience samples involved children who were referred to clinical services. For example, Kaplow, Saxe, Putnam, Pynoos and Lieberman (2006) described the case of a girl who was referred for therapy after a new negative event had triggered flashbacks of the homicide of her mother.

Six of the 13 studies referred to some form of standardized outcome measure, either questions developed for the occasion or well-established instruments such as the Impact of Event Scale (Horowitz, Wilner & Alvarez 1979) and the Kaufman Assessment Battery for Children (Kaufman & Kaufman 1983). However, none of the three larger studies used *established* assessment measures for children's outcomes. For example, Van Nijnatten and Van Huizen (2004) explored the assessment of children's emotional state in Child Protection reports, but found that this happened only sporadically (i.e. the authors mentioned one instance, without further details). The qualitative and quantitative descriptions yielded a range of outcomes and potential risk and protective factors, described in the remainder of this section.

Children's outcomes

We report children's outcomes in four interrelated domains of wellbeing: psychological, social, physical, and academic. While the outcomes are summarized below, a full list is provided in Table 2.

Psychological outcomes

Children showed a range of psychological symptoms, such as fears (e.g., of counter retaliation by the perpetrating parent), grief reactions, intrusive memories, sleep problems, regression, dissociation, depressed mood (including guilt feelings), aggressive behavior, and hyperarousal. Many of these symptoms fell into the domains of posttraumatic stress and (traumatic) grief. A grandmother remarked about her 7-year-old grandson: "*He is loud...destructive, impulsive,... and fights kids at school. Immediately after [the homicide], he was full of anger and rage. He...had nightmares almost every night. If the hall light was not on, he screamed until I got up and turned it on.*" (Hardesty et al. 2008, p. 108)

Children who witnessed the homicide appeared to maintain detailed, accurate memories of the event. Malmquist (1986) noted that recollection of vivid memories of the event were present in all 16 children that he had seen. As an example of such recollections, a 4-year old girl, who was one year old when her mother was killed, provided details about the scene that were unknown to her family but subsequently confirmed by the police (Gaensbauer et al. 1995). However, there were also reports of amnesia under stress, a PTSD symptom. For example, 9-year-old Mariana was *"able to describe certain aspects of the event in great detail one day, and another day would say she couldn't remember anything. She reported that she couldn't remember much about the day her parents died, not even the date."* (Lovrin 1999, p 112)

On a disorder level, PTSD, Attachment Disorder, Adjustment Disorder and Conduct Disorder were mentioned. Kaplan and colleagues (2001) reported that among 95 children referred to their clinical services (days to years post-homicide), 40% had symptoms of emotional disorders, 50% had PTSD or PTSD symptoms, and 60% had behavioral problems.

Eth and Pynoos (1994) portrayed various reactions related to age[1]. For preschoolers, they underlined children's helplessness when confronted with murder; in some cases

[1] Note that these descriptions also included children who lost a parent due to other types of homicide. Therefore, not all responses mentioned in the article by Eth and Pynoos have been included in Table 2.

preschoolers stayed with the dead parent for hours before the homicide was discovered. As an example from a different article, Black, Harris-Hendriks, and Kaplan (1992) also described a child pouring lemonade on her deceased mother to try and wake her up. Eth and Pynoos (1994) further referred to preschoolers' regressive behavior (e.g., anxious attachment, tantrums, lapses in toileting), use of denial, and traumatic play. For example, the 4-year-old *"Jill would choke her 10-year-old foster sister 'playfully' and then Jill would fall on the floor and say, 'I'm dying! I'm dying! Call the doctor!'"* (Zeanah & Burk 1994, p. 137)

For school age children, Eth and Pynoos (1994) noted that there was a wider range of cognitive, behavioral and emotional responses than for the very young children. School age children were more aware of the irreversibility of the death, but still had fantasies of rescuing their loved ones. They were also susceptible to psychosomatic complaints (see also under physical outcomes), more irritable, and showed more sophisticated traumatic play sequences.

Finally, adolescents were described as embarking upon a period of acting-out behavior. They showed a changed future perspective, and sometimes experienced a premature entrance into adulthood (Eth & Pynoos 1994). A strong example of acting-out behavior concerned an adolescent boy whose mother shot her estranged husband in self-defense. On the first anniversary of the killing the boy was angered and attempted to shoot his mother.

- Please insert Table 2 about here -

Social outcomes

The main social outcomes described in the articles related to attachment difficulties of the children with their new caregivers. In particular, some children were described as not willing to accept new caregivers, or needing to work through the mourning of their parents before being able to form new attachments (e.g., Lovrin 1999). As mentioned in the introduction, Gaensbauer and colleagues (1995) referred to the notion that the children were in the uniquely difficult situation of a) having to cope with a profound loss, while at the same time, b) not

having their attachment figures close to comfort them in these circumstances. In other words, the children were missing the very person who would have helped them cope. Attachment difficulties were also shown through symptoms such as being "difficult to please" (Malmquist 1986, p.324), and having feeding problems (e.g., Gaensbauer et al. 1995)[2].

Social outcomes other than attachment concerned stigmatization (as being the child of a murderer) and problems with peers (related to being withdrawn or aggressive; see e.g., Hardesty et al. 2008), loyalty conflicts within the family (e.g., Zeanah & Sax Burk, 1984), and the loss of close contact with siblings when placed with different caregivers (Black et al. 1992; see Table 2). There was also reference to alteration of children's perspectives on their social future, for example, deciding never to get married and have children *'cause if me and him fight, something might happen to me where I have to die'* (Eth & Pynoos 1994; p.296).

Physical outcomes

In the qualitative interviews conducted by Hardesty and colleagues (2008), caregivers indicated that they were more concerned about children's mental health than physical health, even though they reported both mental and physical health problems. Nevertheless, several physical symptoms and difficulties were reported in the articles (see Table 2). Children had eating and feeding difficulties such as nausea, showing weight and appetite changes, and developing unusual behaviors such as "stuffing the mouth to the point of gagging" (Gaensbauer et al. 1995, p.524). In addition, there were reports of headaches, stomach aches, muteness, and asthma symptoms. One child appeared to have developed asthma symptoms that were exacerbated when the child was stressed. This was eventually interpreted by the therapist as a reenactment of how the child's mother tried to breathe through a cut throat (Black et al. 1992). Another example of a strong physical reaction in the acute phase was a

[2] Which we primarily categorized as a psychological outcome (numbing) and a physical outcome (eating/feeding problems) respectively; the categories are interrelated.

boy who developed a high fever during the first two weeks post-homicide (Rupa, Hirisave, & Srinath 2013).

Academic outcomes

Poor grades, placement in special classrooms for emotional or learning difficulties, and dropping out of school were reported among the academic outcomes (see Table 2). The reviewed articles also described a number of closely related psychological symptoms in the domain of PTSD and grief that may affect academic functioning, such as having trouble concentrating and exhibiting language deterioration (regression).

According to Hardesty et al. (2008), academic performance issues were the issues least reported by the caregivers they interviewed; only five (out of 10) reported academic performance difficulties, compared to seven for mental health, six for physical health, and six for behavioral problems. On the other hand, Malmquist (1986) reported that, in the year following the event, all but one of the 16 examined children had a significant decline in their school performance. The child who was the exception took on a new-found studiousness following the parental death.

Variation in outcomes

Variation in outcomes did not appear only for academic outcomes. The articles by Black et al. (1992, 1998, and 2001) and Hardesty et al. (2008), especially, showed that there was no universal response to parental intimate partner homicide. Even though most of these were clinical samples, substantial percentages of children in the samples had dissimilar symptoms. For example, Kaplan et al. (2001) reported that 50% of the children they assessed showed PTSD symptoms. Therefore, 50% apparently did not.

While many children were described as responding with stress reactions, there were also examples of the opposite experience. Kocourkova and Koutek (1998) described a case in which the bereaved child reacted calmly. He described the circumstances surrounding his mother's death, and the dramatic moments of the killing, in detail and without extraordinary emotional reaction. Although this does not necessarily mean that the child was unaffected, it shows a very different response from the child who developed a high fever (Rupa et al. 2013) or the children who re-enacted the homicide (e.g., Zeanah & Sax-Burk 1984).

Even within one family, children's responses to a parental homicide may differ strongly, as Hardesty and colleagues showed (2008, p. 114, paraphrased): *"Her 5-year-old grandson (who was 11 months at the time) does not remember his mother and father from before the murder. He has developed a relationship with his father through phone calls and visits to prison. Her 7-year-old granddaughter believes that another man killed her mother, not her father. Her 9-year-old grandson, unlike his siblings, refuses to visit his mother's grave or visit his father in prison. In contrast, her 10-year-old grandson is angry that his father is in prison and believes that he should not have been sentenced to prison."*

Potential risk and protective factors

Moving from outcomes to predictors, we identified ten categories of risk and protective factors for children's outcomes after intimate partner homicide. We grouped these in pre-trauma, peri-trauma, and post-trauma factors, in line with the trauma literature (e.g., Creamer & O'Donnell 2002). A general factor running through the potential determinants of children's outcomes was time: children's outcomes appeared to be different depending on how long ago the homicide had taken place, with reports of decreases, increases, as well as continuation of symptoms. The full list of factors is depicted in Table 3. At the end of each pre-, peri-, and post-trauma section, we reflected on which of the presented factors would be most important

for children's outcomes and therefore, for the conceptual model. We visualized the conceptual model in Figure 2. For ease of interpretation, we have formulated all factors in Figure 2 in terms of risk. We expect that the factors are interrelated and that they not only affect children's functioning but also vice versa. We further reflect on the model in the discussion section.

Pre-trauma factors

Several *child characteristics* were among the pre-trauma factors mentioned as potentially predicting children's outcomes, and included gender, age or developmental stage, and ethnicity. Gender was mostly just mentioned in descriptions of the samples while the articles referred more explicitly to the role of age or developmental stage. As an example, Eth and Pynoos (1994) described separate symptom profiles according to developmental stage (see section on outcomes). Children (and families) from minority ethnicities were seen as more at risk due to racism and discrimination (Burman & Allen-Meares 1994).

Various *family characteristics* were referred to: previous domestic violence and/or child maltreatment, parental substance abuse, financial strains, and the cultural background of the family. About half of the children seen by Kaplan et al. (2001) in clinical practice had been exposed to domestic violence before the homicide. Hardesty et al. (2008) referred to unstable living arrangements, for example due to parental substance abuse. As an example of issues related to culture, Black (1998) described that a maternal uncle was reluctant to become the caregiver of the bereaved children because children 'belong' to the paternal family in their Asian culture and he expected resistance from the community. Burman and Allen-Meares (1994) noted vulnerabilities in African-American families due to stronger cultural approval of violence as a means of self-expression or problem solving.

For the conceptual model, previous violence at home (towards any member of the household) stands out as an important risk factor. Both domestic violence and child maltreatment have consistently been shown to affect child functioning across a range of samples and settings (Evans et al. 2008; Gilbert, Widom, Browne, Fergusson, Webb, & Janson 2009; Wolfe et al. 2003). There is also consistent evidence that parental mental health issues, parental substance abuse and dire financial situations have a significant negative impact on children's functioning (Linares, Heeren, Bronfman, Zuckerman, Augustyn, & Tronick 2001; Smith 2004). In the model, we have taken these family vulnerabilities together as family stressors. We expect that pre-trauma risk factors have a direct effect on child outcomes and increase the difficulty of coping with the homicide. As an example of the latter, we expect that previous domestic violence affects a child's ability to attach to new caregivers after parental homicide. We did not prioritize gender, age/developmental stage, or ethnicity because meta-analyses have shown effect sizes to be small, negligible, or inconsistent (e.g., Alisic et al. 2011; Wolfe et al. 2003).[3]

Peri-trauma factors

We identified three groups of peri-trauma factors in the reviewed articles. First, characteristics of the *homicide* included whether the child was a witness to the homicide or found the body, whether the child was attacked as well, the parental roles of victim and perpetrator, and whether the perpetrating parent committed suicide after the homicide. For example, Kaplan et al. (2001) found that children who witnessed the killing were more likely to develop PTSD, emotional difficulties, and behavioral problems. Second, *crisis intervention* circumstances were mentioned, such as what the child was told about the event (whether it was the truth and

[3] We do believe that developmental stage plays a role. However, our impression is that different stages correspond to different outcome profiles (in line with Eth & Pynoos 1994) rather than increases/decreases in symptoms.

how it was communicated), how guardianship and placement were organized, whether there was practical (e.g., financial) and psychosocial support for the new caregivers, and whether there was immediate psychosocial assessment and care of the child. Third, factors related to the child's role in a *farewell* to the deceased parent came up. This involved whether the child was able to see the body of the victim in a non-threatening, supervised way and/or participate in the funeral.

In the conceptual model, we included direct exposure to the homicide (hearing or seeing it, being attacked, and/or finding the body) based on its prominence in the reviewed articles and our clinical experience. In addition, we included the communication issues that emerged in the review. We have often come across cases where children were not, or were incorrectly informed about what happened (e.g., "Mommy is on vacation") while they knew that something was terribly wrong. Best practices in psychosocial care after disasters and mass trauma consistently underline the importance of good, honest communication (e.g., Hobfoll et al. 2007). Similarly, high levels of chaos or lack of safety in the direct aftermath (e.g., due to multiple placements in a few days, high levels of uncertainty, and guardianship issues after the homicide) constitute a risk factor. Both the direct environment of the children and the professionals involved can reduce or increase the children's experience of chaos or lack of safety.

Post-trauma factors

We have grouped the post-trauma factors that were suggested in the articles into five main categories. The first category involved the circumstances related to the *placement* of the children. One of the issues raised was whether the child was placed with the family of the perpetrator, relatives of the victim, or unrelated caregivers. Relatives may be preoccupied with their own emotional responses to the killing of someone very close to them and may

therefore be less responsive to the children's needs. On the other hand, an unknown caregiver may represent another major life change. Kaplan et al. (2001) attempted to quantify the effect of placement decisions on children's outcomes, but encountered methodological limitations, including the use of a clinical convenience sample, a wide range in time since the trauma, and low response rates. Other authors reported on living arrangements of the bereaved children (which sometimes included living with the perpetrating parent again after release from prison) without statistically relating these to child outcomes. Therefore, meaningful effect sizes are not yet available. Factors closely related to the type of placement are the number of different placements and their location (e.g., necessitating a change of school and, therefore, friends). Kaplan et al. (2001) reported that almost 50% of the children they followed up had had 3 or more placements since the homicide. Finally, the issue of siblings being able to stay together versus being separated in the process of placement was mentioned.

The second category of post-trauma factors regarded the *mental health care* children received: whether children had received any form of trauma-focused therapy, what the content of this therapy was, and its duration. The reviewed articles described psychodynamic and psychoanalytic, art, play, and cognitive behavioral therapy approaches, generally describing the positive effects of the therapy on the children involved. One issue that was mentioned was whether the child's mental health difficulties were acknowledged by the caregivers. In some cases they were not, or at least not for a while. For example, Burman and Allen-Meares (1994, p.30) described an aunt who perceived the children as "doing relatively well after their mother was killed and saw no reason to obtain help for them, until teachers started complaining about the children's behavior and poor grades." Lack of mental health care came up as a more general factor as well. Lewandowski et al. (2004) reported that in 22% of the households affected by femicide, none of the children received any counseling.

A further category of determinants involved children's and families' *coping strategies*. These were not discussed in many articles. Hardesty et al. (2008) provided the most extensive description, listing coping strategies such as staying busy, using rituals and soliciting social support. The strategies were experienced as helpful by the families, although the authors questioned the long-term effects of avoidance strategies (e.g., distraction; 'keeping busy').

Fourth, characteristics and circumstances related to *contact with the perpetrating parent* appeared to be important. Several authors described their concerns about children having to testify against their parent because of the pressure it puts on the child in terms of loyalty to the parent and having to describe details of the homicide. Also, in the long term, contact with the perpetrating parent was mentioned, in particular with regard to children's varying wishes in seeing their parent (see also the previous quote from Hardesty et al. 2008). From the descriptions, it appeared important whether the wishes of the children were followed.

Finally, a number of factors could be categorized as '*support context'*. These included whether there was conflict between the family of the perpetrator and family of the victim (e.g., related to whether children should be in contact with the perpetrating parent), whether there were financial strains or other life events, and to what extent the social environment in general was supportive (e.g., whether the child could freely talk about the homicide). Black and Kaplan (1988) noted that relatives, as opposed to non-related caregivers, would often decide not to tell the children of the true nature of their parent's death, or distort the truth, which was seen as a barrier to the children's recovery.

For the conceptual model, we prioritized caregiver distress, problematic contact with the perpetrating parent, conflict between relatives, and lack of mental health care as risk factors. Rather than focusing on the type and number of placements, we propose to look at the drivers of placement (in)stability. In this respect, a key risk factor appears to be caregiver

distress. Many caregivers in the samples of the review were relatives of the children, and were therefore confronted with the sudden, violent loss of a loved one themselves. In addition, including one or more children into their household proved challenging for caregivers (Hardesty et al. 2008). Caregiver distress has been well-documented as affecting child functioning, both in the reviewed articles and in the broader child trauma and child development literature (e.g., Salmon & Bryant 2002; Scheeringa & Zeanah 2001). In addition to caregiver distress we selected (the level of) conflict between relatives – often regarding contact with family and the perpetrating parent, the placement, and guardianship of the children – for the conceptual model. While this has been documented less than caregiver distress, and is also very specific to parental intimate partner homicide, the degree of conflict is of great concern in clinical practice. We further hypothesize that children's outcomes are affected by problematic contact with the perpetrating parent. Similar to the questions around placement type, we argue that the risk factor is not so much whether there is contact but rather what the quality of the contact is (both contact and no contact can be helpful or problematic, and there is much variation between cases depending on the circumstances of the homicide and children's feeling of loyalty towards the parent). Finally, the importance of mental health care was underlined in the reviewed articles and is in line with the evidence base regarding trauma and grief (e.g., Foa, Keane, Friedman, & Cohen 2009). While a substantial number of children had not received (longer-term) mental health care in the larger studies by Lewandowski et al. (2004) and Kaplan et al. (2001), this appears an important risk factor for long-term outcomes.

- Please insert Figure 2 about here -

Discussion

While over 55,000 children worldwide lose a parent due to parental intimate partner homicide each year, and mental health and well-being consequences appear to be both serious and long-lasting, it is surprising how little research has been conducted on this population. In particular, there is almost no empirical evidence on children exposed to parental intimate partner homicide outside the USA and the UK, and most data have been collected before the year 2000, that is, before the recent surge in child-focused evidence-based assessment and treatment of trauma and grief (see Foa et al. 2009).

Nevertheless, the available literature shows substantial variation in child mental health and wellbeing outcomes. Even though many samples consisted of clinically referred children - a supposedly more homogeneous group than the full population of affected children - their responses to the parental homicide were far from universal. The frequency of the outcomes reported will need to be studied in further empirical investigations. Yet, the current findings suggest that we need to look beyond purely psychological symptoms; physical, social and academic domains of child development need to be assessed and addressed as well. In one study (Hardesty et al. 2008), participating caregivers were more concerned about mental health than physical health issues. While this is relevant information regarding the level of interference with daily life, our view is that we should include all four domains of functioning in our considerations since at least several children showed difficulties in non-psychological domains and both the outcomes and their level of interference need to be better understood for all domains.

The systematic review not only revealed a wide range of child outcomes, it also showed a large number of factors potentially influencing these outcomes. For virtually none of these factors is the evidence base strong at this point, certainly not in the specific context of fatal domestic violence. Based on the review, the wider literature and our clinical

experience we have visualized a model of risk factors for difficulties in children's functioning. The main contribution of this model is that it prioritizes candidate variables for clinical assessment and research purposes. It distinguishes between pre-, peri- and post-trauma factors. Within that structure, it acknowledges the influence of pre-trauma factors such as previous domestic violence, irrespective of the homicide. Further, as Marsac and colleagues recently noted for medical trauma, the peri-traumatic phase is not only likely to influence post-trauma outcomes, it is also an important opportunity for early assessment and intervention (Marsac, Kassam-Adams, Delahanty, Widaman, & Barakat 2014). In the context of fatal domestic violence, we consider the peri-trauma period as the – generally tumultuous – period of about a week, usually up to the funeral of the victim. However, it should be noted that this period is less clear for some children, for example when the deceased parent is a missing person for a period of time.

Our conceptual model focuses on key risk factors to allow for ease of interpretation within a large mix of interrelated factors. However, this is necessarily a strong simplification of reality. Most importantly, we expect that there are protective factors to be depicted in a future version of the model. Currently, without further data it is hard to assess whether a certain factor has 'two sides of the coin' (e.g., caregiver distress as a risk factor and caregiver wellbeing as a protective factor) or only one. In the domestic violence literature there are some indications that having a stable relationship with one caring and consistently available adult (e.g., a grandmother or an uncle) can be protective for children (see Hardesty et al. 2008) but we did not have enough information to integrate this into our model.

Apart from protective factors, we have not included coping and appraisal as separate factors in the conceptual model. Coping and appraisal styles are likely to play a role (see e.g. Ehlers, Mayou, & Bryant 2003) since not every child behaves and responds in the same way, and we have seen heterogeneity in outcomes. However, we have framed the conceptual model

around risk factors, and we did not want to imply that children can adopt a 'wrong' appraisal or coping strategy in the context of parental homicide. Since it appeared inappropriate to suggest that children are not doing well enough in these circumstances, we considered it sufficient to have these processes – at least partially – included in the domain of psychological symptoms.

Limitations

Several limitations need to be kept in mind. First, as discussed above, the quality of the current evidence base (e.g., the lack of use of standardized measures and retrospective reporting) has restricted the possibility of any quantitative synthesis. Second, the clinical nature of most of the samples limits generalizability of the findings. Third, our categorization of outcomes in four domains is artificial; strong interrelations between the domains are expected. For example, physical symptoms may be psychosomatic as much as somatic. Fourth, as described above the conceptual model does not include protective factors but rather focuses on risk factors; information on protective factors will need to be actively sought. Finally, for the reasons above, the conceptual model needs to be seen as a stepping stone: it is unlikely that it will remain in its current form when further research has been conducted.

Clinical implications

Based on the qualitative descriptions in the literature, we recommend that practitioners enquire about all pre-, peri- and post-trauma factors in the model as well as the breadth of mental health and wellbeing outcomes when assessing the circumstances of the bereaved child and their caregivers. Questions that appear relevant to ask include:

a) How is the child currently doing, taking into account psychological, social, physical, and academic domains of functioning?

b) Have there been changes in functioning since the homicide?
c) What is the family history, in particular with regard to previous violence and stressors?
d) To what extent has the child been exposed to the homicide?
e) To what extent has the child been informed about the homicide?
f) How chaotic have the days directly after the homicide been for the child?
g) How are the caregivers doing?
h) Is there any conflict between relatives in relation to the homicide and/or the situation of the child?
i) What is the nature of any contact between the child and the perpetrating parent?
j) What mental health care has been provided so far (and what were the results)?

As Kaplan and colleagues (2001) state, it must continue to be good clinical practice to approach each case on its merits. The case descriptions and circumstances of the children are highly variable, each with their own challenges. Also, the diversity in factors and outcomes underlines the importance of strong collaborations among all professional disciplines involved in the care of the bereaved children: not only social work and psychology, but also general practice and education.

While the conceptual model has been developed for the specific situation of parental intimate partner homicide, its elements have relevance for the domains of domestic violence and child trauma more broadly. In particular, near-fatal domestic violence bears many similarities with respect to children's situations. Often, there is a sudden unavailability of the injured parent and the incarceration of the perpetrator, with similar issues regarding children witnessing the event, their living arrangements and contact with the perpetrator. Lewandowski and colleagues (2004) estimated that the number of attempted intimate partner femicides is

three times as high as the number of actual murders; a substantial figure. The conceptual model may also be helpful in understanding children's outcomes after other types of homicides within the family, such as the loss of a sibling due to child maltreatment, and the loss of a parent due to non-intimate partner homicide (see also Eth & Pynoos 1994).

Future research

Comprehensive and prospective research programs are required to develop the much needed evidence base on children's mental health and wellbeing after parental intimate partner homicide and advance our conceptual model. It will be essential to learn which outcomes are most prevalent and which factors are influencing these outcomes most strongly, in order to tailor clinical care, social services, and decisions regarding placement and contact with the perpetrating parent. We will need to understand how and when various factors impact children's development.

Three elements are key to the design of future research. First, it is important to involve the full population, or at least a representative part of it, rather than clinical samples. It is suggested that only a very small number of children is referred to clinical care (Van Nijnatten & Van Huizen 2004), and their characteristics may be very specific. This means that cases have to be identified through police records, coroner's offices, or other organizations that record homicides. Studying the full population will facilitate understanding not only the total numbers of cases and children involved – information that has not yet been established – but also the full spectrum of family backgrounds, homicide circumstances, post-homicide needs and interventions, and children's outcomes. While statistically, the small numbers of intimate partner homicides may be seen as a research 'disadvantage', they also allow attempts to consider the full population in a country, which is impossible in studies on highly prevalent mental health or physical health conditions.

Second, so far, any research has been retrospective. A prospective study, integrated in clinical care or clinical monitoring, to study children's trajectories would be worthwhile. Ideally, both for clinical and research purposes, children would be included in a monitoring endeavor directly after the homicide (e.g., through child protection agencies). Initial data on history of the family and homicide circumstances can subsequently be combined with data of regular child well-being and functioning assessments, information on treatment, living arrangements, and contact with the perpetrating parent and family members.

Third, research should be both quantitative and qualitative to allow robust findings and statistical power on the one hand and depth of understanding on the other. In terms of quantitative data, we would propose the extraction of data from case files as well as the use of structured clinical interviews to measure mental health outcomes and questionnaires to measure quality of life and family functioning. Both the children (from about eight years of age) and their caregivers should be asked to participate. The same applies to qualitative data collection, in which the participants' perspectives on the decisions made for or with them should be solicited, as well as any other topics that they find important to share. Combined, the qualitative and quantitative data can cover all elements of the conceptual model.

It is important to keep an open mind in future studies. For example, it is possible that, even though we suspect large groups of affected children to show severe mental health and wellbeing difficulties, this may not be the case. We were surprised by the amount of interpretation and speculation in the original articles, for example when a child did not show stress reactions (e.g., interpreted as 'dissociation' in Kocourkova & Koutek 1998) and when a child did not want to eat (e.g., interpreted as 'rejects new caregivers' in Gaensbauer et al. 1995). Future research will need to work towards unbiased, standardized assessment of responses, while allowing children and their caregivers to contribute their own views on their responses and trajectories.

Acknowledgements

We would like to thank Dr Peter Sidebotham and three anonymous reviewers for their valuable comments on previous versions of the manuscript. Dr Alisic has been supported by the Netherlands Organisation for Scientific Research (Rubicon Fellowship 446-11-021) and the Australian National Health and Medical Research Council (Early Career Fellowship 1090229).

Disclosure Statement

The authors declare that they have no conflict of interest.

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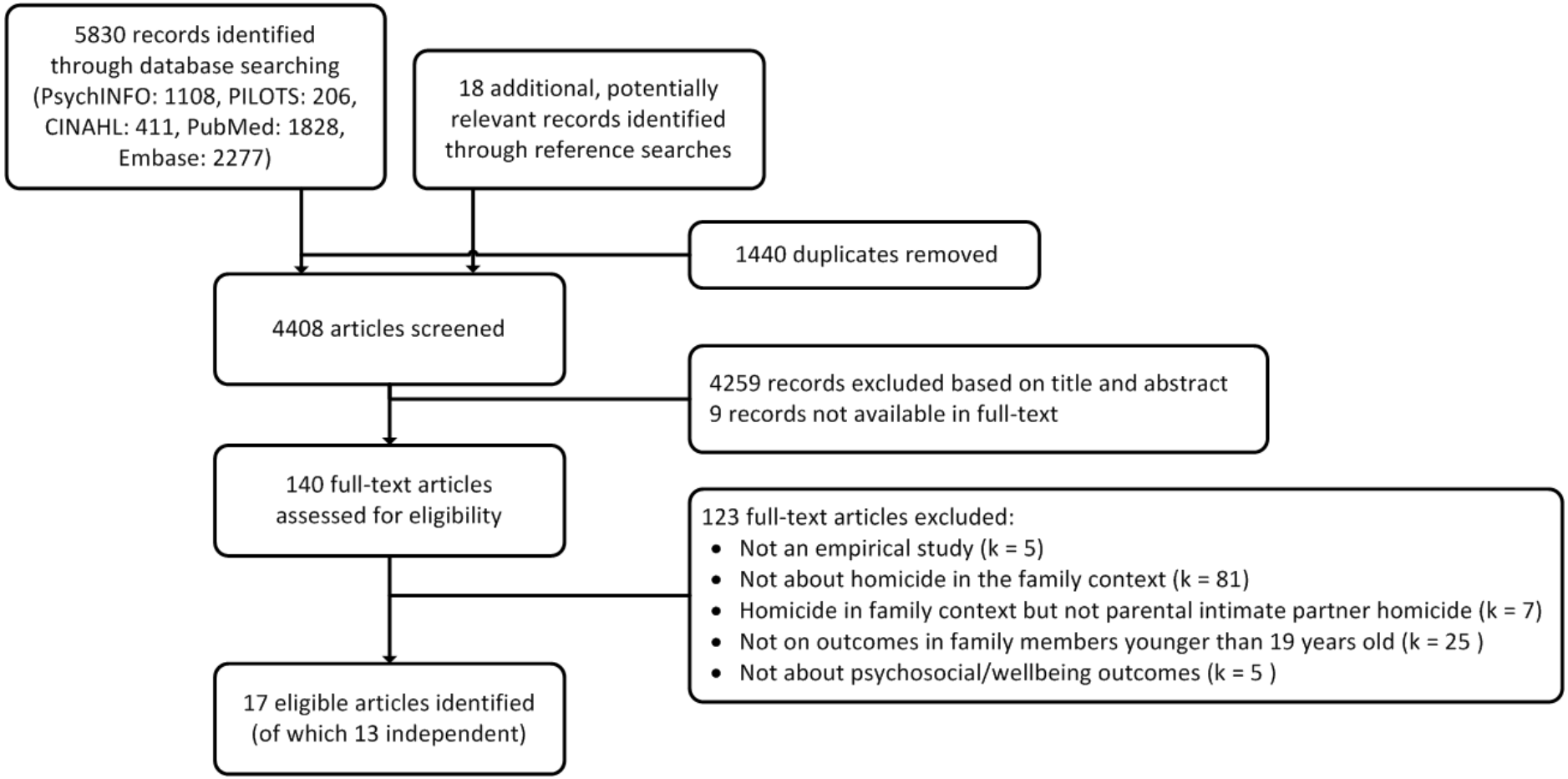

Figure 1. *Flow-chart of selection of studies*

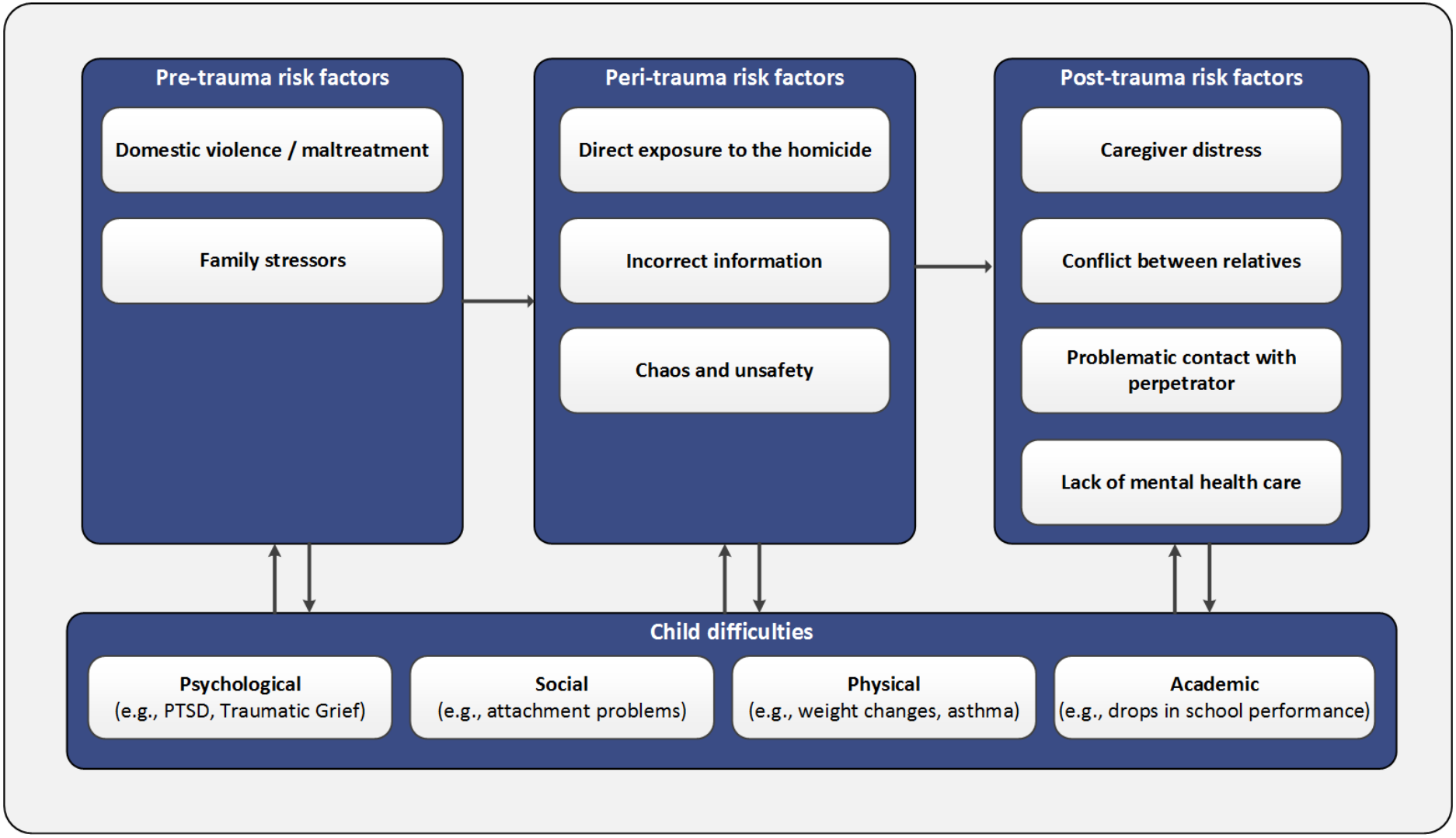

Figure 2. *Conceptual model: key risk factors for child difficulties after parental intimate partner homicide*

Table 1. *Studies included in the systematic review*

Study	Theoretical background, aims, and hypotheses *guiding* the study	Design and measures
1. Black & Kaplan (1988)[a] United Kingdom *N*=28 (14 fam); 1-14 years old at referral; 43% male; 0 – 11 years since homicide.	No explicit theory, aims or hypotheses.	Case series of children of 14 families, referred to a child psychiatric team after father killed mother. No standardized measures reported.
Black et al. (1992) United Kingdom N=8 (5 fam); 3 – 6+ years old at referral; 25% male; a few days + since homicide.	No explicit theory, aims or hypotheses.	Case series of children of 5 families, referred to a child psychiatric team after father killed mother (4 families) or mother killed father (1 family). No standardized measures reported.
Black (1998) United Kingdom N=6 (2 fam); age unknown, at least 4 were under 5 years old at referral; gender unknown, between 50 and 83% male; unknown time since homicide.	No explicit theory, aims or hypotheses.	Case vignettes of 6 children of 2 families, referred to a child psychiatric team after father killed mother. No standardized measures reported.
Kaplan et al. (2001) UK N=95 (45 fam); demographics unknown (descriptions suggest wide age range and wide range of time since trauma; follow-up	No explicit theory. Aim: to determine any associations between these factors (placement effects, frequency of contact with surviving parent, referrer's view of difference	Follow-up study with 33 referrers of 61 children (33 families) of whom father had killed mother (58 children) or mother had killed father (3 children).

was 18 months to 15 years post initial assessment which was days to years post homicide).	intervention made, view on child's adjustment) to help us understand the difficulties these children face and to aid clinical decisions. Hypotheses embedded in results; traumatically bereaved children, placed either families (victims or perpetrators') would fail to make secure attachments and would be more prone to develop disorders of attachment.	Questionnaire (12 items) developed for this occasion.
2. **Burman & Allen-Meares** (1994) USA N=2 (1 fam); aged 6 & 10 at referral; both male; 2 years since homicide.	Theory of psychosocial development (Erikson); Theory of social learning (Bandura & Walters). No explicit aim or hypotheses.	Case study; description of the assessment and treatment of 2 boys, referred after father killed mother. No standardized measures reported.
3. Eth & Pynoos (1994) USA N=35 (26 fam); aged 3-16 years at interview; 57% male; 1 day – 14 years since homicide.	No explicit theory, aims or hypotheses. Reference to theory of 'flashbulb memory'(Brown & Kulik 1977) in discussion.	Case series of children of 26 families, referred clinically (23 mothers killed by father/(ex)partner, 3 fathers killed by mother) Clinical interview yielding qualitative data from notes.
4. Gaensbauer et al. (1995) USA N=1; aged 4 at referral; female; 3 years since homicide.	No explicit theory, aims or hypotheses. Reference to theory in discussion (e.g., 'internal working models'; Bowlby 1969).	Case study of a girl who was referred clinically after her mother was killed by her ex-partner. Had received counselling 1 year earlier but not trauma-focused.

		Kaufman Assessment Battery for Children, McCarthy Scales of Children's Abilities & language testing mentioned without test name.
5. Kaplow et al. (2006) USA N=1; 11 years at referral; female; 10 years since homicide.	No explicit theory, aims or hypotheses. Trauma focused cognitive behavioral therapy and trauma systems therapy frameworks guided treatment. Discussion of memory systems.	Case study of a girl who was referred clinically after an event had triggered flashbacks of when her father killed her mother. Trauma Symptom Checklist for Children (TSCC), UCLA PTSD Index, Child Dissociative Checklist.
6. Kocourkova & Koutek (1998) Czech Republic N=1; 11 years at time of homicide; male; assessment shortly after homicide ('during criminal investigation').	No explicit theory, aims or hypotheses. Implicitly refers to a psycho-analytic framework ('object relations', 'defense mechanisms').	Case study of a boy who was referred during the criminal investigation of the homicide of his mother by his father. No standardized measures reported.
7. Lewandowski et al. (2004) USA N= 146 (73 fam); age at homicide from 0 to 18; 53% boys; time since homicide unknown.	No explicit theory. Aim: to present descriptive data regarding some of the sociodemographic characteristics of children who have experienced actual or attempted femicide of their mother at the hands of an intimate partner (review considered actual femicides only). No hypotheses.	Quantitative survey among 'informants (knowledgeable of the victim)' after femicide. Extensive sociodemographic profile of IPH cases and exposure of children but no standardized measures on child outcomes except on how many children in a home received counseling.
Hardesty et al. (2008)		

USA N=31 (10 fam); 0 – 18 years at time of homicide; 55% male; interviews 5 weeks to 5 years post-homicide.	Family stress theory (Hill 1949). Study aims to use family stress theory to explore caregivers' and children's adjustment. No explicit hypotheses.	Case series of 10 families, selected from a larger study on risk factors for intimate partner femicide (i.e. in all cases, mother was killed). Qualitative interview with 20 questions.
8. Lovrin (1999) USA N=1; 9 years at referral; female; several weeks post homicide.	Used Terr's description of trauma types traumatic stress in children as framework for describing the case. Used some theoretical background in discussion (e.g., model linking the stage of awareness of death to approximate chronological ages; Nagy). Aim: provide a historical overview of PTSD in children in general and to discuss a case study in particular. No explicit hypotheses.	Case study of a girl who was referred after her father shot her mother and committed suicide. No standardized measures reported.
9. Malmquist (1986) USA N=16 (N fam unknown); age unknown (at least 6 were 5-10 years old at time of the homicide, all were pre-adolescent[b]); at least 25% boys; assessment within 1 year post homicide[b].	No explicit theory. Aims: 1) evaluate psychiatric consequences of witnessing a parent being murdered in terms of meeting diagnostic criteria and 2) assess the impact on the affective and cognitive functioning of the children. No explicit hypotheses.	Case series of children who witnessed parental murder (in at least 6 cases, mother was killed by (ex)partner, unclear whether any cases of father killed by mother). Impact of Event Scale.
10. Van Nijnatten & Van Huizen (2004) Netherlands N=60 (25 fam); age unknown; 48% male; time since homicide unclear.	No explicit theory. Aims: to understand how the child protection board maps developmental features of the child by investigating the history of the family and its	Qualitative study of documents and accounts of social workers regarding child protection decisions after parental intimate partner homicide (in 22 of the 25 cases, mother was killed by the father).

	current dynamics, with a particular interest in the criteria used. No explicit hypotheses.	No standardized measures reported.
11. Payton & Krocker-Tuskan (1988) USA N= 2 (2 fam); aged 6 and 8 at referral; 50% male; both 3-4 years post-homicide.	No explicit theory, aims or hypotheses.	Two cases (2 children from 2 families; father killed mother and both parents killed each other) out of a larger case series on loss of a parent through violence. No standardized measures named.
12. Rupa et al. (2013) India N=1; aged 7 at referral; male; appr. 3 months post-homicide.	No explicit theory, aims or hypotheses.	Case study of a child whose father killed his mother. No standardized measures reported.
13. Zeanah & Sax Burk (1984) USA N=1; aged 4 at referral; female; referral was 1 month post-homicide.	No explicit theory, aims or hypotheses guiding research but theory described when discussing the case (e.g., psychoanalytic views on mourning, Anna Freud).	Case study of a child whose father killed her mother. No standardized measures reported.

Note: [a] Black and colleagues saw in total "nearly 400 such children from 186 families" (Black 1998). In the review, we have included the 95 children for whom at least some demographics or outcomes were reported. [b] Personal communication by Dr Malmquist.

Table 2. *Children's symptoms and difficulties after parental intimate partner homicide*

Psychological outcomes	
Fears / anxiety	*Anxious, fearful* *Fear of loss of control* *Afraid of the dark, afraid of sleeping alone* *Afraid of being alone / going into rooms alone (e.g., bathroom)* *Fear father would 'come and get them'/ counter retaliation* *Fear of being kidnapped by relatives* *Fear that new caregiver may be next to die* *Fear of monsters, fear of dying* *Tremble & shake violently when afraid*
Intrusive memories	*Flashbacks, vivid memories* *Daydreaming* *Shocking images/thoughts/memories*
Dissociation/illusions	*Dissociation, disconnected* *Spacy* *Hearing voices*
Traumatic play	*Traumatic drawing* *Reenactment* *Obsessive fascination towards guns & violence* *Tells everyone what happened, obsessive recounting of event*
Sleep problems	*Sleep disturbances* *Inability to sleep alone* *Nightmares* *Sleep walking*
Avoidance	*Denial, avoidance* *Avoidance of things that are red* *Avoiding eye contact* *Inability to discuss the event* *Avoidance of relatives of deceased because of physical resemblance*
Aggressive behavior	*Aggressive behavior, fighting, anger* *Temper tantrums, intense screaming* *Delinquency incl. stealing, destructive behavior* *Foul language, verbally abusive, provocative, bullying* *Hateful thoughts, violent fantasies, revenge fantasies*
Self-destructive behavior	*Self-hitting* *Self-destructive acting out, victim behavior* *Suicidal behavior*
Hyperarousal	*Erratic behavior in the classroom*

	Hyperactive
	Restlessness, difficulty concentrating, impulsiveness
	Jumpiness, sensitivity to loud noises
	Suspiciousness, hypervigilance
Negative cognitions/mood	*Feelings of depression, hopelessness*
	Guilt, self-blame, shame, loss of self-esteem
	Bitterness, irritable
	Vacillation between sociable & withdrawn
	Morbid thoughts
	Persistent disturbance in mood
	Suicidal ideation
Numbing	*Emotional numbing, pseudo-adult behavior*
	Bland facial expression
	Bored
	Difficult to please
	Inhibited, passive
Grief symptoms	*Sad, tearful, grieving*
	Protracted grief, aborted grief
	Misses parent(s) (mentioned for victim and perpetrator)
	Constant thoughts of mother
	Reunion fantasies
Regressive symptoms	*Enuresis*
	Regression (e.g., language deterioration)
	Separation anxiety
	Decrease in verbal expressiveness & articulation problems
	Renewed eating problems
	Selfstimulation, rocking
Social outcomes	
Attachment difficulties	*Not willing to accept new caregivers*
	Dislike of cuddling, hugging
	Insecure attachment
	Avoidant attachment
Other social difficulties	*Stigmatization*
	Altered perspective on future relationships (‘no marriage’)
	Withdrawn
	Sexually precocious
	Problems with peers

	Missing siblings who had been placed elsewhere
Physical outcomes	
Eating/feeding issues	*Weight and appetite changes (obese/anorectic)* *Eating and feeling problems* *Filling mouth until gagging* *Nausea*
Other physical symptoms	*Fever* *Headaches* *Stomachaches, diarrhea* *Mute* *Asthma symptoms* *Pain in chest, heart palpitations*
Academic outcomes	
Academic underperformance	*Poor grades* *Placement in special classrooms for emotional/learning difficulties* *Dropping out*

Table 3. *Risk and protective factors mentioned in the articles included in the systematic review*

Factors	Risk or protective factor?*
Pre-trauma	
• Child characteristics	
○ Child age/developmental stage	Depends on age group: different vulnerabilities
○ Child gender	Girls are slightly more at risk for posttraumatic stress
○ Child ethnicity	Risk factor for minority children
• Family characteristics	
○ Ethnicity/culture of the family	Risks associated with certain cultural norms
○ Pre-event domestic violence / abuse / child maltreatment	Risk factor
○ Parental substance abuse	Risk factor
○ Unstable living environments	Risk factor
○ Financial strains	Risk factor
Peri-trauma	
• Homicide characteristics	
○ Gender/parental role of the victim and perpetrator	Unclear
○ Suicide by the perpetrator?	Risk factor
○ Whether the child was present (‘proximity’ to the event)	Risk factor
○ Whether the child tried to prevent the killing	Unclear (guilt feelings seen as risk factor)
○ Whether the child was attacked as well	Risk factor
• Crisis intervention characteristics	
○ When and what the child was told about the homicide	Incorrect information seen as a risk factor
○ Early psychological assessment/intervention for the child	Protective factor
○ Whether the child has possessions (e.g., pictures) of the deceased	Protective factor
○ Broader services/help; financial, practical etc.	Protective factor

- Farewell characteristics
  - Did the child have the opportunity to see the body of victim? — Protective factor
  - Did the child participate in/go to funeral? — Protective factor

Post-trauma

- Placement characteristics
  - Placement with relatives victim side, perpetrator side or neutral — Unclear
  - Caregivers' own mental health / attachment / responsiveness — Caregiver distress seen as a risk factor
  - Whether the homicide, victim and perpetrator are talked about freely — Protective factor
  - Breaking down of placement / changes of caregiver — Risk factor
  - Whether siblings were split — Risk factor

- Child's coping strategies
  - Connecting with supportive others — Protective factor
  - Staying busy — Unclear
  - Using rituals — Protective factor
  - Developing religious thoughts — Unclear
  - Denial/detachment — Risk factor
  - Splitting parents in 'good' and 'bad' — Risk factor
  - Degree of reflection — Unclear

- Mental health care characteristics
  - Whether children's symptoms are acknowledged by caregivers and followed up by initiating mental health care — Protective factor
  - Whether the child/family has received mental health care — Protective factor
  - Type and duration of the care — Unclear

- Contact with the perpetrating parent
  - Confrontation in legal process; having to give evidence in court — Risk factor
  - Contact arrangements with parent in prison — Risk factor when conflicting with child's

	wishes/problematic contact
• Support context	
○ Conflict between family of victim and family of perpetrator	Risk factor
○ Social environment apart from placement	Protective factor when social support available
○ Financial strains / other live events (e.g., illness of support figures)	Risk factor

* *Note:* The direction of the effects is hypothesized based on the reviewed literature and the general literature on trauma and loss in children (see the introduction for references). Further research will need to provide information on the conditions, directions, and strength of the effects.