



**MINISTRY OF SOCIAL
DEVELOPMENT**
TE MANATŪ WHAKAHIATO ORA

Inter-Parental Relationship Quality and its Effects on Children

**A literature review to support analysis and
policy**

April 2018



Authors

This report was prepared by Clare Dominick, Ministry of Social Development.

Acknowledgements

Dorian Gray and Kanchana Subedi prepared an earlier draft which informed the development of this report. Thank you to those who reviewed earlier drafts of this report including Ross Mackay, Barbara Collins, Moira Wilson, Michelle Bly, Dorian Gray, Amelia Gill and Professor David Fergusson.

Disclaimer

The views and interpretations in this report are those of the researcher and are not the official position of the Ministry of Social Development.

Published

April 2018

ISBN: Online 978-1-98-854117-4

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Glossary

Term/ acronym	Definition within this review that considers the relationship between IPRQ and children’s outcomes
Confounding	Confounding by factors may distort the estimation of the size and direction of the effect of IPRQ on children’s outcomes. Therefore it is important to identify potential confounding factors and take them into account in analysis. Factors may confound the relationship between IPRQ and children’s outcomes when they are associated with both IPRQ and children’s outcomes but are not factors on the causal pathway.
Emotional Security Theory (EST)	EST is a theory originally developed by Davies and Cummings (1994) to address the question of how and why conflict and hostility between parents is associated with children’s mental health trajectories.
Externalising behavioural problems	Externalising problems in children involve outward directed reactions including under-controlled acting out behaviours, for example, conduct difficulties, hyperactivity and impulsivity.
Growing Up in New Zealand (GUiNZ)	A longitudinal cohort study tracking the development of around 7,000 New Zealand children since before their birth (between March 2009 and May 2010). The study is based at the University of Auckland and government funding is administered by the Ministry of Social Development (www.growingup.co.nz)
Internalising problems	Internalising problems in children involve inward-directed reactions and experiences of distress for example, sadness, depression, worry or anxiety.
Inter-parental conflict (IPC)	For this report, inter-parental conflict may include disputes, disagreements or expressions of untoward emotions over everyday matters between the parents. This conflict may be characterised by aggression, withdrawal, and detachment (potentially destructive) or by cooperation, collaboration, and resolution (potentially constructive).
Inter-parental relationship quality (IPRQ)	In this review, IPRQ is viewed as the types and patterns of interactions between parents or primary caregivers
Inter-parental violence and/or intimate partner violence (IPV)	For this report, IPV refers to harmful aggressive, abusing, coercive and controlling behaviours between parents / primary caregivers of children. However, it should be noted that intimate partner violence includes partners or ex-partners who might or might not be parents. World Health Organisation (WHO) and Centers for Disease Control and Prevention definitions for intimate partner violence are detailed in section 3 of this report.
Mediator	A mediator is a factor that is on the causal pathway between IPRQ and children’s outcomes. Mediators may be referred to as explanatory mechanisms or processes, intermediary factors, or intervening factors.
Moderator	A factor may moderate the relationship between IPRQ and children’s outcomes where its presence affects the direction or strength of that relationship.
Outcome	Outcomes of interest in this literature review include children’s physiological and neurological development, social-emotional development, behavioural adjustment, cognitive development and health (physical and psychological
Post-Traumatic Stress Disorder (PTSD)	Refer to text for the definition used by particular authors

Executive Summary

Purpose and scope of report

The purpose of this narrative literature review is to strengthen the Ministry of Social Development's (MSD's) understanding of how inter-parental relationship quality (IPRQ) influences children's wellbeing and developmental outcomes. The review will inform MSD analyses of longitudinal data sets (including the Growing Up in New Zealand data¹) and provide evidence to support policy and practice.

The review sought to:

1. Identify the effects of inter-parental relationship quality on children
2. Identify how inter-parental relationship quality influences child outcomes (that is, identify the pathways of influence)
3. Consider the implications for data analysis and policy.

Inter-parental relationship quality (IPRQ) relates to interactions between parents

In this review, the term inter-parental relationship quality (IPRQ) includes consideration of the interactions between parents or primary caregivers of children but excludes parental relationship satisfaction or family structure. The review focuses on how IPRQ influences children's outcomes, but does not identify the risk and protective factors associated with the occurrence of positive or negative IPRQ, except for important correlates of IPRQ and related children's outcomes.

Early childhood development outcomes are prioritised

IPRQ influences children's development through to adulthood. However, for this review, literature addressing outcomes early in children's lives is prioritised as this information will better support an analysis of the available GUINZ data² and a prevention focus in policy. The dynamics of IPRQ's influence on outcomes may vary across different developmental stages. Therefore, generalising from one developmental stage to another is potentially problematic, as factors that are important earlier in a child's life may differ from those that are important during adolescence. The outcomes of interest include children's physical and psychological health, social-emotional and behavioural adjustment and cognitive outcomes.

Research in the field now seeks to understand causal relationships

Research in this field has moved beyond noting the associations between exposure to inter-parental conflict or violence and child adjustment problems and other outcomes. The contemporary approach considers particular mechanisms (mediating and moderating factors) through which differences in children's responses can be explained. More

¹ GUINZ is a longitudinal cohort study of approximately 6,800 children from before their birth (between March 2009 to May 2010) until they are young adults. The study is conducted by the University of Auckland and funded by a range of Government agencies and University of Auckland (www.growingup.co.nz).

² At the time of writing, the children participating in GUINZ were approximately 6 to 7 years old.

complex and sophisticated perspectives which consider the operation of multiple factors and influences over time are now being developed.

Parental interactions can be positive or negative for children's development

Nurturing, involved and responsive environments are associated with positive outcomes for children whereas environments characterised as unpredictable, hostile, psychologically aggressive, or physically violent are associated with poorer outcomes (Sturge-Apple et al. 2012).

Inter-parental interactions that are viewed as positive for children's development include parents': supportiveness of one another; positive feelings towards one another; ability to communicate; and ability to resolve conflict positively.

Increasing attention is being paid to the types of interactions that are categorised as inter-parental conflict or violence. Inter-parental conflict has been defined as "normal and unavoidable [in partnerships] especially if one defines conflict broadly to include any disputes, disagreements or expressions of untoward emotions over everyday matters between the parents" (Cummings & Davies, 2002). Many authors have noted that inter-parental conflict varies on multiple dimensions and these have differing effects on children. Inter-parental conflict dimensions include frequency of conflict, mode of expression, chronicity or duration, intensity, and degree of resolution.

Intimate partner violence has been variously defined.³ Recently the World Health Organisation & London School of Hygiene and Tropical Medicine defined intimate partner violence as: "behaviour within an intimate relationship that causes physical, sexual or psychological harm, including acts of physical aggression, sexual coercion, psychological abuse and controlling behaviours" (World Health Organization & London School of Hygiene and Tropical Medicine 2010, p. 11).

Definitions of children's exposure to IPRQ are developing

Definitions of children's exposure to inter-parental conflict and violence are developing rather than established and consistent across the literature. Children of all ages can be affected by inter-parental conflict or violence, with effects evidenced across infancy, childhood, and adolescence. Inter-generational transmission of negative behaviours and diminished life chances are also evident.

IPRQ influences children's outcomes but the level of effect is uncertain

There are now strong theoretical and empirical foundations underpinning the relationship between IPRQ and child outcomes (Harold et al. 2016). However, most of the available evidence investigates the effects of inter-parental conflict or violence rather than positive IPRQ. The negative impact of inter-parental violence/intimate partner violence (IPV) on children's adjustment has been established (Cummings & Davies 2002; Cummings et al.

³ In this review intimate partner violence and inter-parental violence are used interchangeably as some of the research on intimate partner violence incorporates consideration of its effects on children as well as adults.

2009). However, this review found that the size of the effect varies considerably across studies, which may be due to the differing levels and types of IPRQ exposure, types of outcomes being considered and developmental stages of the children. In addition, many studies are conducted with relatively small population groups within specific socio-cultural contexts.

Parents who engage in frequent, intense, violent and poorly resolved inter-parental conflicts increase the likelihood of negative impacts for their children. The influence of exposure to inter-parental conflict or violence extends across a wide range of outcomes including physiological, neurodevelopment, social-emotional development, cognitive development and health (mental and physical).

Multiple pathways between IPRQ and children's outcomes interconnect over time

Evidence supports the view that positive and negative IPRQ influences children's outcomes directly and indirectly through multiple pathways. Although the literature indicates that the relationship between negative IPRQ and children's outcomes has strong empirical support, there are gaps in understanding how positive and negative IPRQ influences outcomes. Several authors have noted that the processes that mediate the relations between IPRQ and children's outcomes and the variables that function as vulnerability or protective factors are still poorly understood (Cummings & Davies 2002; Cummings et al. 2009; Harold et al. 2016).

Several researchers consider that evidence indicates these factors operate as developmental cascades, whereby the exposure to childhood adversity during sensitive developmental periods interacts with maturational events, which in turn produces a cascade of linked consequences for children. These negative effects may influence multiple domains over time. For example, early neurobiological developmental consequences of exposure to inter-parental conflict or violence may influence later emotional and cognitive developmental trajectories. Other frameworks consider 'chains of risk' whereby a sequence of linked exposures raise the risk of an outcome because one negative experience or exposure tends to lead to another and then another. Cumulative risk frameworks have also been investigated particularly when the aim is to predict poor outcomes.

Pathways of influence include a range of mediators

The main factors operating as intermediaries or mediators between IPRQ and children's outcomes, supported by the available evidence, include:

- parenting practices/style and quality (includes both mother-child and father-child relationship)
- parent-child social-emotional attachments
- children's emotional security in inter-parental and family context
- children's cognitions, appraisals and attributions (including threat and self-blame)
- children's stress and trauma responses and subsequent neurophysiological developmental trajectories.

IPRQ influences these factors and in turn they influence children's outcomes. Research suggests that these intermediary factors do not fully account for the effects of IPRQ on

children’s outcomes and direct effects remain. This may be due to factors such as social learning whereby children model the behaviour of their parents.

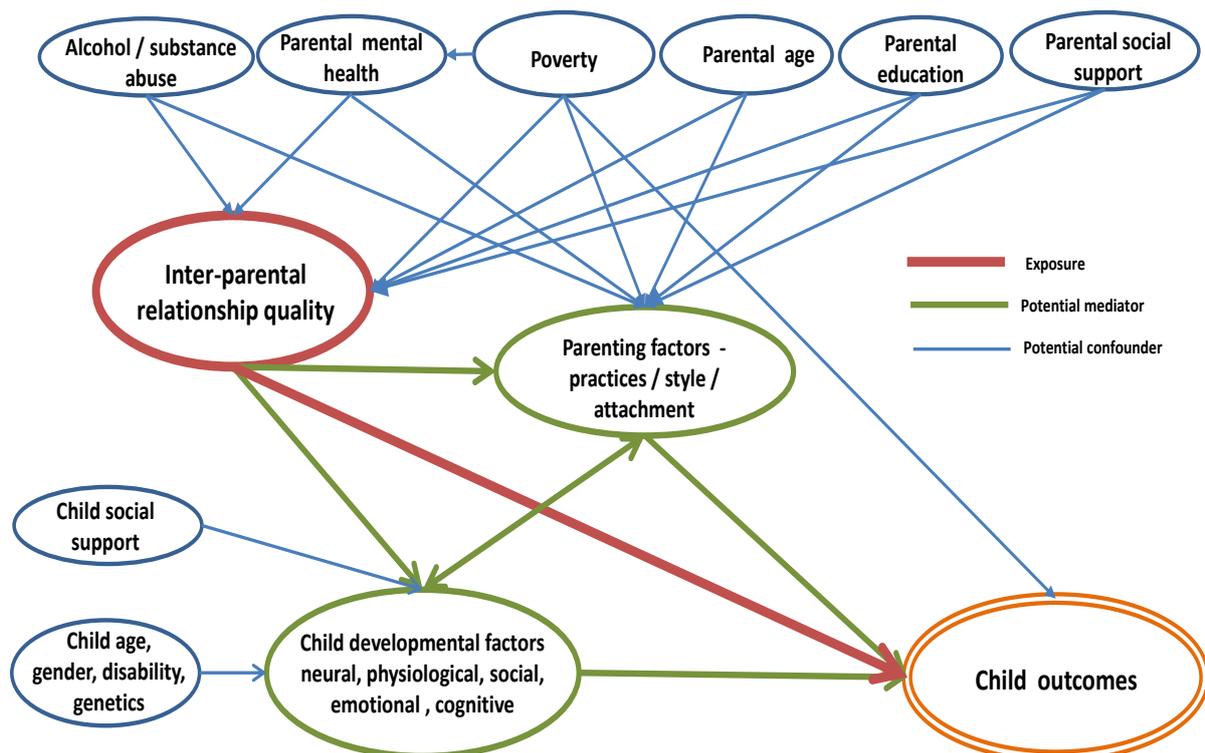
Contextual factors may mitigate or exacerbate outcomes

Parental health and behaviour and the wider family or community environment are important contextual factors that can mitigate or exacerbate child outcomes in response to exposure to inter-parental conflict/violence.

Evidence identifying these factors and how they are related to IPRQ, children’s outcomes and related mediators, is developing rather than definitive. Figure A outlines the potential pathways through which alcohol and substance abuse, parental mental health, poverty, parental education and social support influence child outcomes.

Evidence suggests that the relationships between IPRQ and parental mental health is likely to be bidirectional, that is, inter-parental conflict or violence might lead to poorer parental mental health or poorer mental health might lead to increased levels of inter-parental conflict. Similarly, inter-parental conflict or violence may lead to increased alcohol or substance use while the opposite may also occur, where alcohol or substance use leads to increased levels of inter-parental conflict or violence.

Figure A: Influences on IPRQ and potential mediators of IPRQs relationship with children’s outcomes⁴



⁴ Note that the factors depicted as influencing or associated with the types and levels of IPRQ are not comprehensive. The diagram incorporates factors highlighted in the literature that may operate as confounders in analyses of the relationship of IPRQ with maternal and child outcomes. Key parental socio-demographic and behavioural factors are incorporated but not biological factors. As such, parental genetic factors are not considered.

Developmental psychology notes that although parenting factors are critical for the developing infant, the parent-child relationship is bidirectional over time. Therefore both parent-related and child-related factors will influence each other over time.

The evidence suggests that poverty is directly and indirectly associated with IPRQ and children's outcomes. Poverty may influence children's outcomes indirectly through its influence on IPRQ, parental mental health, and parenting practices or more directly through an absence of opportunities that support healthy development.

Parental age is also associated with IPRQ and outcomes for children. However, some evidence suggests that the association of parental age with children's outcomes is not direct. Age may be a confounder. Younger parents are on average more likely to have fewer economic and material resources and have less developed parenting skills and social-emotional maturity. Evidence suggests it is these factors, rather than age, that influence children's outcomes.

Evidence indicates that social support operates as a protective factor for children exposed to IPV and for parents in some circumstances. However, overall further work is required to better understand how these factors influence children's outcomes in the context of positive or negative IPRQ.

Resilience factors can influence outcomes after exposure to negative IPRQ

Resilience research has considered several socio-ecological factors which appear to be protective for children exposed to negative IPRQ. These factors may lead to greater opportunities for children's positive development through moderating the influence of IPRQ. They are:

- provision of positive learning and developmental environments for the child
- social support for the children
- parental social support (in some circumstances)
- connections with positive community and cultural supports (Campo 2015; National Scientific Council on the Developing Child 2015).

Multiple adversity increases the likelihood of negative outcomes

Children exposed to inter-parental violence have a greater likelihood of being abused themselves and not just witnessing inter-parental conflict and violence. They might also be exposed to a range of other stressors which elevates their risk of negative outcomes. Where a range of risks co-occur, the ability to determine the relationship between IPRQ and children's outcomes is more challenging.

Several studies have considered the effects of reciprocal relationships among factors over time. However, this aspect of the field is not well developed from an empirical perspective.

Recent research suggests social factors strongly influence the association between IPRQ and children's outcomes

New findings suggest that associations between IPRQ and children's outcomes are strongly related to social factors. Previously it had been suggested that the common

underlying genetic factors that simultaneously affect both parent and child confounded the association of IPRQ and children's outcomes. However, recent research took this confounding into account by comparing the relationship of IPRQ with children's outcomes in genetically-related and genetically-unrelated parents and children. Similar pathways of influence and levels of association were found for genetically-related and genetically-unrelated parents and children (Harold et al. 2012; Harold et al. 2013).⁵

Opportunities for development of research

Although research in this field is increasing, there are relatively few longitudinal studies with large sample sizes across representative populations which enable robust analysis of causal relationships at a population level. Such longitudinal studies do provide the opportunity to identify pathways of influence over time.

Research in the field of IPRQ could be enhanced with further work on:

- Refining:
 - definitions of exposure to IPRQ
 - understanding of the relationship of different levels and types of exposure to particular outcomes
 - understanding of the nuanced relationships among potential risk and protective factors as some (for example, social support) may be protective in some circumstances but not in other circumstances.
- Expanding:
 - the focus of exposure variables to include positive as well as negative IPRQ
 - the investigation of the influence of father-child relationships.

Refining definitions of exposure and outcomes and identifying consequences of different types of exposure is needed

Uncertainty remains about how the timing of, and length and type of exposure to, positive and negative IPRQ differentially impacts children. Definitions of exposure to inter-parental conflict and violence are not fully established or consistent across the literature. These areas need further refinement, particularly given findings showing emotional development outcomes differ after exposure to, for example, physical inter-parental aggression versus verbal inter-parental aggression. There are two components to improving exposure definitions, first clearly defining the types of inter-parental interactions and second defining the levels and types of children's exposure to those interactions (for example, seen or heard the interactions, became involved in the interactions, saw the results of the interactions, or informed of the interactions by a third party).

A wide range of outcomes has been associated with negative IPRQ. As noted above, research indicates that exposure to different levels and types of inter-parental conflict or violence leads to different outcomes for children. Future research needs to more closely consider the outcomes in relation to different levels and types of exposure.

⁵ Note that the study did not attempt to quantify the influence of genetic versus social factors but took the confounding effect of genetic factors into account by comparing the relationship of IPRQ with children's outcomes in genetically-related and genetically-unrelated parents and children.

Expanding the focus of exposure variables to include positive as well as negative IPRQ would be useful

It might be useful to further expand research which identifies and considers positive inter-parental interactions alongside negative inter-parental interactions in analyses, rather than only an absence of negative inter-parental interactions. Resilience research focuses on identifying factors associated with positive development in the face of adversity. Further research on positive outcomes within adverse circumstances may shed further light on positive pathways and protective factors.

Father-child relationships need further investigation

In the past, research has concentrated on understanding how the mother-child relationship influences children's outcomes. However, increasingly research shows the importance of gaining a better understanding of the influence of the father-child relationship in the context of IPRQ. Authors have noted that the father's relationship with the child is as important as the mother's between early to middle childhood.

Factors may be protective in some circumstances but not in other circumstances

Research suggests that some factors operate as moderators of child outcomes within some environments, but not in others. For example, research within a resilience framework discussed in section 2, suggests that social support across a range of contexts, whether for the mother or child, is associated with positive child outcomes whereas other research indicates some social networks may negatively influence outcomes.

Implications for intervention and policy development

Primary prevention of negative IPRQ is needed as it has a direct effect

This review considered the effects of IPRQ on children's outcomes. Evidence clearly shows that IPRQ is associated with children's outcomes both directly and through several intermediary pathways. Primary prevention of negative IPRQ (whether inter-parental conflict or violence) is therefore a clear target for policy interventions. Several important correlates of negative IPRQ and children's outcomes were identified in this review and outlined below. However, reviewing research on all the factors associated with the incidence and prevalence of negative IPRQ was outside the scope of this report, but are the subject of research (for example, Fanslow & Gulliver 2015; Gulliver & Fanslow 2016) and current policy review/interventions.

Multiple potentially modifiable factors also need to be considered in policy

There is increasing evidence indicating multiple interacting (potentially) modifiable factors need to be considered in policy development including:

- parent-child relationships and type of attachment
- parenting behaviours and style
- children's exposure to a range of positive social environments to support positive development
- addressing children's trauma responses to negative IPRQ when they have been exposed, including very young children
- social networks and support available to the parents and child.

As research suggests that there are multiple indirect and direct effects of IPRQ on children's outcomes, interventions focusing on one or two of these pathways are unlikely to be fully successful as negative IPRQ may continue to affect outcomes directly or through alternative pathways. For example, just targeting the parent-child relationship is unlikely to lead to sustained positive outcomes for children. From a prevention point of view, findings suggest the need for integrative interventions that address the inter-parental relationship as well as their parenting behaviours and parents relationships with their children (Harold et al. 2016). Interventions that help parents deal well with conflict and that support good parenting practices may prevent negative outcomes for children.

Harold et al. (2016) noted that there are likely to be gaps in current programmes as few directly consider the influence of the couple relationship on children and few directly address specific mechanisms through which inter-parental conflict places children at elevated risk of negative outcomes. They consider therefore a more systematic and direct focus on the couple relationship, in particular, including couple relationship skills in interventions early in children's lives, at transition points, and in high-risk contexts is warranted.

Evidence shows that children of all ages may be negatively affected by inter-parental conflict or violence. Interventions that assist children cope with exposure to inter-parental conflict or violence may help prevent a cascade of negative developmental consequences for the children. Ensuring children's trauma responses are addressed, increasing their exposure to other positive social environments, and the development of a range of protective social networks and support for both parents and children are a potential focus.

Modifiable correlates influencing IPRQ also need to be addressed

A broader set of potentially modifiable correlates (such as poverty, mental health conditions, alcohol abuse and substance abuse) which may influence both the incidence of IPRQ and child outcomes also need to be addressed in any interventions as the effects of these factors may undermine the effectiveness of interventions.

This view is supported by recent advances in scientific understanding of the effects of toxic stress on children's development which have prompted researchers in the field to propose new approaches to early childhood policy and practice (Shonkoff & Fisher 2013; Shonkoff 2016). The Center on the Developing Child at Harvard University (2016) highlighted the importance of building the capabilities of all the important adults whom vulnerable children rely on. They stated that one set of initial implications from developmental science findings for improving outcomes of children and their caregivers is to:

- **reduce external sources of stress** (such as for example poverty, racism, living in dangerous neighbourhoods, domestic violence, substance abuse, mental health problems and involvement with child welfare systems)
- **create safer more predictable better regulated and less stressful environments** that better support healthy development, self-regulation and critical skill development
- **develop responsive relationships** that stimulate children's positive brain development and protect against negative experiences producing toxic stress effects

- **strengthen core life skills** that are the basic skills adults need to parent effectively and earn a living, and children need to develop. These self-regulation skills are built upon 'executive functions' primarily consisting of: inhibitory control; working memory; and mental flexibility.

They propose building a universal understanding of responsive caregiving and ask the question how can we help parents and other caregivers develop their capacity to provide responsive caregiving.

Conclusions

Overall, the evidence indicates strong theoretical and empirical foundations underpinning the relationship between IPRQ and child outcomes and the negative impact of inter-parental conflict and violence on children's adjustment. The size of the effect remains uncertain. It is likely to vary across differing levels and types of IPRQ exposure, types of outcomes being considered and developmental stages of the children. There are also gaps in understanding about how positive and negative IPRQ influences outcomes. Longitudinal research has the potential to address some of these information gaps.

Current literature indicates that effectively addressing the negative consequences of inter-parental conflict and violence on children's development requires policy and practice covering the spectrum of primary, secondary and tertiary prevention using integrated interventions which focus on a range of actors within a child's network of developmental relationships and a range of stressors within their environments. Evidence suggests the need for interventions that help parents deal well with their conflict and that support good parenting, and interventions that mitigate the effects of inter-parental conflict and violence on children and help them cope with the difficulties of inter-parental conflict or violence should they be exposed.

Section 1: Introduction

Strengthening understanding of the impact of inter-parental relationship quality (IPRQ) on child outcomes

Theory and evidence supports the view that the family environment is a primary influence on children’s development (for example, Bronfenbrenner, 1979). Nurturing, involved and responsive environments are associated with positive outcomes for children whereas environments characterised as unpredictable, hostile, psychologically aggressive, or physically violent are associated with poorer outcomes (Sturge-Apple et al. 2012).

A central relationship in many families is the inter-parental relationship. A wide range of developmental outcomes have been associated with the quality of the inter-parental relationship including neurodevelopment, externalising and internalising behaviours, academic performance, physical health, social and interpersonal relationships and overall life chances (Davies, Martin, et al. 2016; Harold et al. 2016; Artz et al. 2014). However, much of the research has been based on cross-sectional rather than longitudinal approaches, although the latter is increasingly available.

The purpose of this literature review is to strengthen the Ministry of Social Development’s (MSD’s) understanding of how inter-parental relationship quality (IPRQ) influences children’s wellbeing and developmental outcomes. The review will inform MSD analyses of longitudinal data sets (including the Growing Up in New Zealand – GUiNZ – data⁶) and provide evidence to support policy and practice.

The review sought to:

1. Identify the effects of inter-parental relationship quality on children.
2. Identify how inter-parental relationship quality influences child outcomes (that is, identify the pathways of influence).
3. Consider the implications for data analysis and policy.

The focus, scope and methods used for the review are described within this section. The following three sections (section 2 to 4) outline the:

- frameworks that underpin research on IPRQ and child outcomes, in particular which factors are seen as mediating the relationship between IPRQ and child outcomes
- evidence supporting the association of IPRQ with child outcomes and mediators identified in the literature
- factors correlated with IPRQ that may act as confounders or moderators of the relationship between IPRQ and child outcomes and which are therefore important to consider in analyses or policy.

The final section (5) discusses the findings of the review and considers the implications for analysis of longitudinal data and policy.

⁶ GUiNZ is a longitudinal cohort study of approximately 6,800 children from before their birth (between March 2009 to May 2010) until they are young adults. The study is conducted by the University of Auckland and funded by a range of Government agencies and University of Auckland (www.growingup.co.nz).

Patterns of interactions between parents are the focus for this review

The inter-parental relationship is often seen as the centre of family relationships although children's development is influenced by a range of family relationships. The effects of IPRQ on children's outcomes are the focus of this review.

Two main approaches have been taken in the literature to understanding IPRQ (Reynolds et al. 2014). The first considers patterns of interactions within families (for example, Goldberg and Carlson, 2014). The second considers intrapersonal assessments such as a person's satisfaction or happiness with their relationship (for example, Fincham & Rogge, 2010). A related area of enquiry with a long history of research within sociological literature has investigated how family structure, relationship stability/instability and changes in family structure including separation have been associated with children's wellbeing (for example, Mackay, 2005). Research on family transitions (for example, divorce) has shifted from a focus on structure to a focus on processes particularly inter-parental conflict and parent-child relations (Margolin et al. 2001).

Interactions between parents/caregivers (not relationship satisfaction or family structure⁷) are covered by this review. Research on **patterns of interactions** between partners has incorporated dimensions such as communication patterns, conflict behaviours, supportive behaviours and the length of time partners spend interacting with each other (Reynolds et al. 2014). These have been investigated within several frameworks which are outlined in section 2.

How does IPRQ influence children's outcomes?

This review aims to identify whether and how IPRQ influences children's outcomes and important correlates⁸ of IPRQ. It includes evidence investigating the association and the level of that association. It also considers the pathways (intermediaries) through which IPRQ influences children's outcomes and delineates correlates of IPRQ that may contribute to confounding or moderate the relationship between IPRQ and children's outcomes.

Identifying the causes of positive or negative IPRQ or the risk and protective factors associated with the occurrence of positive or negative IPRQ was beyond the review's scope. Readers are referred to the broad range of literature considering this topic. For example, Fanslow & Gulliver (2015) identified a range of factors associated with increased risk of current intimate partner violence (IPV) in New Zealand while Gulliver & Fanslow (2016) outlined frameworks for risk and protective factors for IPV. These authors concluded that there is no single causal factor for IPV as it is influenced by a constellation of socio-ecological factors.

Outcomes early in a child's life are prioritised

IPRQ influences children's development through to adulthood. However, for this review, literature addressing outcomes early in children's lives is prioritised as this information

⁷ Bradford & Barber (2005) noted that conflict between parents is a better predictor of child outcomes than is overall marital satisfaction or marital distress.

⁸ Correlates of IPRQ are important to consider in analyses as they may confound the relationship of IPRQ with children's outcomes.

better supports an analysis of the available GUiNZ data⁹ and a prevention focus in policy. The outcomes of interest include children's physical and psychological health, social-emotional and behavioural adjustment and cognitive outcomes.

The dynamics of IPRQ's influence on outcomes may differ across different developmental stages. That is, the factors that are important earlier in a child's life may differ from those that are important during adolescence. Therefore, generalising across developmental stages is potentially problematic.

Multiple factors are involved but greater clarity is needed about causal pathways

Research in this field has moved beyond noting the associations between exposure to inter-parental conflict or violence and child adjustment problems. The contemporary approach considers particular mechanisms (mediating and moderating factors) through which differences in children's responses can be explained. It is developing a more complex and sophisticated perspective which considers the operation of multiple factors and influences over time (Cummings & Davies 2002; Harold et al. 2016).

Current research suggests that IPRQ is associated with children's outcomes through a range of possible pathways. Therefore, literature that reported investigations of possible causal pathways was of particular interest for this review. A range of pathways described and investigated in the literature are discussed in section 2.

Methods used for this narrative literature review

The aims of this review were to identify:

1. the effects of inter-parental/primary caregiver relationship quality on children
2. how inter-parental quality influences child outcomes (that is, what are the pathways of influence)
3. the implications for analysis and for policy.

The intention is to deliver a narrative review of the literature not replicate existing systematic reviews. The literature search was conducted in two phases. The initial literature search protocol including search engines and search terms is detailed in Appendix 1. This initial search yielded 109 articles on parenting, child behavioural and health outcomes, and parental relationship quality and conflict. Of these, 31 articles were selected for the review.

As the literature obtained in the first search did not fully address the questions, further searches were conducted in June/July 2016 using EBSCO and Google to identify recent journal articles and review documents on "inter-parental relationship quality" inter-parental conflict" or "intimate partner violence" and "child outcomes". Child outcomes included physical or psychological health, social, emotional and behavioural adjustment, cognitive or educational outcomes. As noted above, early developmental stages were prioritised. Google searches were also conducted relating to specific authors specialising in the research topic.

⁹ At the time of writing, the children participating in GUiNZ were approximately 6 to 7 years old.

Priority was given to peer-reviewed journal articles reporting:

- meta-analyses
- systematic reviews
- studies with a clear theoretical basis addressing possible mechanisms of influence
- longitudinal studies or studies testing causality.

Working papers, book chapters, and summary reviews were also included where the research informed the aim of the review.

In total, 136 articles, reports, and book sections informed this narrative review and are referenced.

Section 1 summary

This narrative literature review will support the analysis of longitudinal data and inform policy. It aims to identify the effects of IPRQ on children; how IPRQ influences child outcomes; and the implications for analysis of data and policy.

IPRQ has been measured several ways. How patterns of interaction between parents influence child outcomes early in a child's life are the focus for this review. Multiple factors have been shown to be associated with IPRQ and research in this field is now focused on understanding causal relationships between exposure to different patterns of parental interactions and child outcomes. Research investigations are also considering possible mediators and moderators of the relationship between IPRQ and child outcomes.

Section 2: Frameworks that consider how inter-parental relationship quality affects children

The association of IPRQ with children's outcomes has been studied across several theoretical frameworks including family systems theory, social learning theory, the transmission of affect, cognitive theories, genetic transmission theories, and trauma theory (Margolin et al. 2001). These frameworks propose a number of distinct factors as salient mediators in the relationship between IPRQ and children's outcomes. In effect, these mediators explain 'how' IPRQ influences children's outcomes which addresses the second of the reviews objectives.

Where factors mediate the relationship between IPRQ and children's outcomes, then these pathways are referred to as 'indirect'. In contrast, other pathways are referred to as 'direct' where there are no mediators. For example, children enact behaviours modelled by their parents (social learning processes) from direct observation.

The main frameworks and associated mediators identified within the reviewed literature are briefly outlined below. The evidence supporting the role of these mediators is growing and is considered in section 3 within this report.

Although, this report's focus is IPRQ, much of the research literature considers inter-parental conflict and inter-parental violence/intimate partner violence (IPV)¹⁰ rather than positive IPRQ. Therefore, the review reflects this emphasis.

In this section, Attachment Theory is outlined first as it underpins several research frameworks that have considered the effects of IPRQ on children's developmental outcomes. It does not itself consider IPRQ but focuses on the primary care-giver relationship, which is viewed as an important mediator within other frameworks.

Developmental psychology – attachment theory

Bowlby's (1982) theory of attachment has been an influential theory in developmental psychology. Attachment theory posits that developmental processes are the product of interactions between a unique genetic endowment and a particular environment. An infant's emerging social, psychological, and biological capacities cannot be understood apart from its relationship with the mother. The process of forming an attachment to a caregiver provides an infant with a secure base from which to explore (Ainsworth & Bell 1970; Ainsworth et al. 1978) and is an important foundation for social-emotional development.

Theory and research have shown the importance of attachment for the social-emotional development of children (Tharner et al. 2012, refer to DeKlyen & Greenberg's, 2008 review) including emotion regulation, social attributions, socialisation and intergenerational transmission of behaviour (Gutmann-Steinmetz & Crowell 2006).

As noted above, the mother-child relationship is central to attachment theory. In summarising research findings on mothers' interactions with their infants, Gartstein & Iverson (2014) reported that mothers of secure infants are more involved with their

¹⁰ These terms are explained in section 3 and defined in the glossary.

infants, more positive, less negative, more responsive to infant signals, more appropriate in their responsiveness, and more appropriate in pacing of interactions.

From a neurological development perspective, the National Scientific Council on the Developing Child (2012, p.1) stated evidence shows that from birth “human well-being requires responsive environments and supportive relationships to build sturdy brain circuits, facilitate emerging capabilities, and strengthen the roots of physical and mental health. Through mutually rewarding, ‘serve and return’ interactions with the adults who care for them, young children are both initiators and respondents in this ongoing process. These reciprocal and dynamic interactions are essential for healthy development and literally shape the architecture of the developing brain.”

Overall, research has shown that secure attachment in infancy is related to social competence and resilience while insecure and particularly disorganised attachment is associated with the development of emotional and behaviour problems (for a review see Gutmann-Steinmetz & Crowell 2006). In particular, research indicates infants and children who are securely attached show greater positive affect when engaging in problem-solving, greater social competence, and higher levels of empathy and compliance. In contrast, insecurely attached infants show higher levels of dependency, anger, distancing, and hostility in relationships, and are more likely to have internalising and externalising problems as they mature (Gartstein & Iverson 2014).

Three different child attachment types were identified by Ainsworth et al. (1978): ‘securely attached’ (B); ‘anxious/avoidant’ (A); and ‘anxious/resistant’ (C). Main & Solomon (1986) added a fourth category ‘disorganized/disoriented’ (D). These categories are described in Table 1.

Table 1: Parent-child attachment types: Infant/child behaviours

Attachment types	Description
Anxious-avoidant (A)	The anxious-avoidant characteristic represents an infant or child who has an insecure attachment with their mother. This attachment type is characterised by children who avoid or ignore their mother or caregiver, and is cautious with strangers even when their mother is present.†
Secure (B)	Children with secure attachments can explore and play freely while a stranger is present provided their mother is also present. They will still get upset when their mother leaves but will be happy when she returns.†
Anxious-ambivalent / resistant (C)	Children with an anxious-ambivalent/resistant type of attachment with their mother showed distress even before their mother leaves, and are clingy and difficult to comfort when the mother returns. They can show resentment towards their mother/caregiver.†
Disorganised / disoriented (D)	The disorganised or disoriented child type was added to types A, B, and C by Mary Main and Judith Solomon. They classified children as disorganised if they showed dazed expressions, freezing up, incomplete or undirected movements and expressions, and simultaneous contradictory behaviours.‡

Source: †(Bretherton, 1992), ‡Main & Solomon as cited (Greenberg et al., 1993).

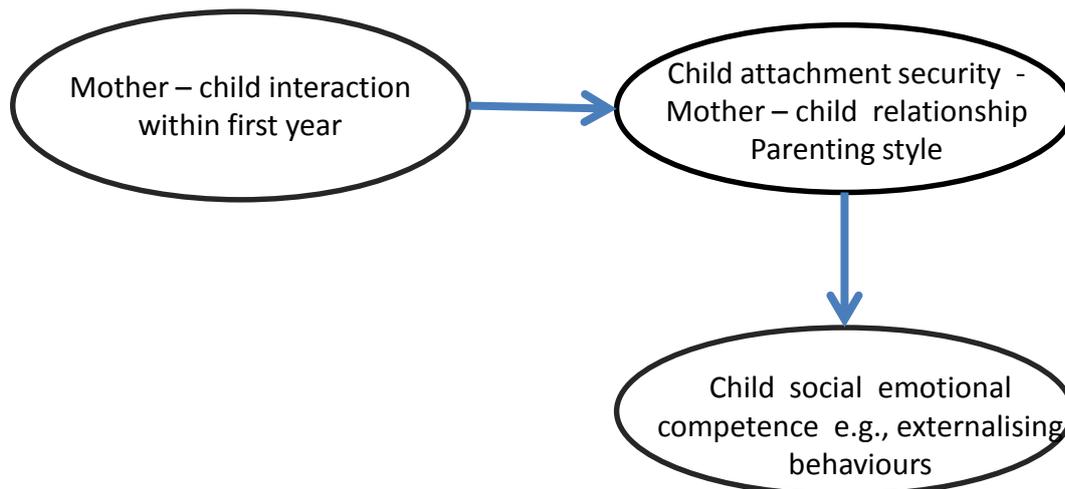
Although attachment theory has been influential in developmental research, Gutmann-Steinmetz & Crowell (2006) caution that attachment theory addresses specific aspects of the parent-child relationship and it is not the only way that parents exert positive or negative influence on their children’s development.

Tharner et al. (2012) noted that a meta-analysis of 5,947 participants from 69 studies confirmed that there is a modest but robust effect (combined effect size Cohen’s $d=.31$

which is a small effect size¹¹) of early attachment security on externalising problems. However, these authors also noted that the evidence for its association with internalising problems for children below 10 years of age is less certain.

Genetic studies on attachment have consistently found evidence of environmental influence on attachment as predicted by attachment theory, although the level of the variance does vary across different studies (Fearon et al. 2014). These inconsistencies may be due to the very different developmental stages of the children or measurement approaches used in the studies.

Figure 1: Development of child attachment and related child outcomes



Emotional security theory and approaches emphasising cognitive appraisals and attributions

Most attachment theorists assume that parenting style is the central mechanism linking the quality of parents' attachment and adaptation in their children (Cowan et al. 2009). However, a growing body of research demonstrates that many factors are directly linked with the quality of a parent's relationship with their child and their child's level of cognitive and social adaptation (Davies & Cummings 1994).

Emotional Security Theory (EST) is a model originally developed by Davies and Cummings (1994) to address the question of how and why conflict and hostility between parents is associated with children's mental health trajectories (Davies & Martin 2013). In this model, derived from attachment theory, an important goal for children is to maintain safety and security in the context of inter-parental conflict especially where there is repeated exposure to parental interactions containing hostility, violence, and unresolved endings.

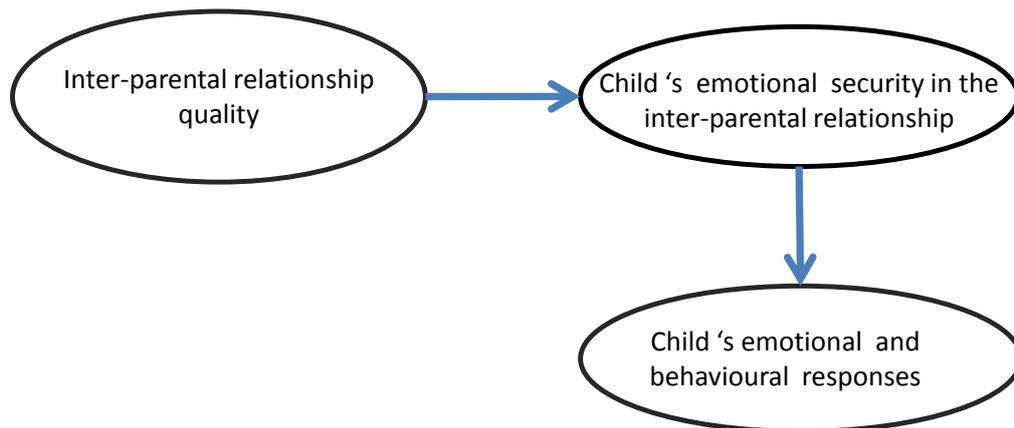
In this theory, the child's emotional security is conceptualised as a distinct behavioural system, and is a mediator between inter-parental conflict and child problems (Davies & Martin 2013; Davies, Hentges, Coe, et al. 2016). EST, and the reformulation of EST (EST-R), postulates that children have a specific goal of felt security beyond the parent-

¹¹ For a visual representation and explanation of Cohen's d refer to website <http://rpsychologist.com/d3/cohend/>

child relationship into other family subsystems (including the inter-parental system) and the family as a whole (Kouros et al. 2008). Inter-parental conflict influences children's development by threatening their emotional security which in turn motivates children's emotional and behavioural responses thereby mediating the effect of inter-parental conflict on children's adjustment.

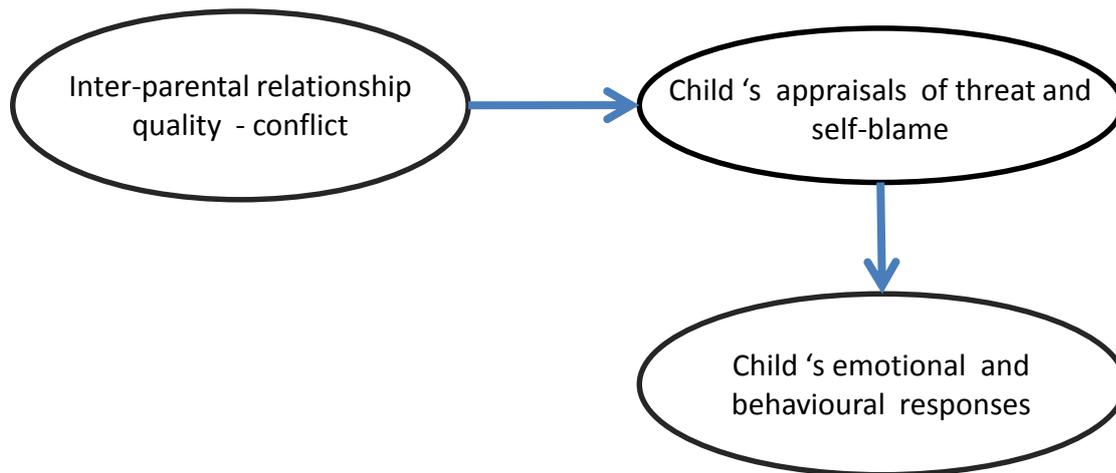
Figure 2 provides a generalised diagram of the relationship between IPRQ and child outcomes with the proposed mediator of the child's emotional security in the inter-parental relationship.

Figure 2: Emotional Security Theory, relationship of IPRQ with child outcomes



Grych and Fincham's cognitive-contextual framework argued that appraisals or evaluations of conflict are significant in determining the outcome of inter-parental conflict. This theory emphasises the cognitive aspect of the appraisal process. Perceived threat and self-blame are central appraisals linked with children's internalising and externalising problems (Grych et al. 2000; Grych et al. 2003). Children who believe their parents' conflict may be harmful to them are more likely to be distressed than children who view the conflict as not harmful. Children who believe they are the cause of the parental conflict (attributions of self-blame) may feel shame, guilt and a desire to resolve the conflict (Grych et al. 2000). Harold et al. (2016) noted that a number of hypotheses drawn from this theory have been supported. However, much of this research is conducted with children who are aged 10 years and over. Therefore, these types of mediators might be most relevant for older children and adolescents who are able to report their appraisals. Figure 3 identifies the main mediating factors within this framework.

Figure 3: Cognitive-contextual framework, the role of child appraisals as mediators



Contextual models including family systems and family risk

In contrast with traditional views that attribute child outcomes such as psychopathology to individual personality factors, the family systems perspective understands these outcomes as a reflection of family processes (Margolin et al. 2001).

Family systems theory proposes that children's development is intrinsically related to interactions among other members of a family (Goldberg & Carlson 2014). This ecological approach is derived from the work of Bronfenbrenner (1979) where interactions between and within systems are decisive influences on human development. Within an ecological framework outcomes are influenced by micro, meso and macro level systems. The family is a micro-level system and is seen as a complex, dynamic, and integrated whole, in which each member influences and is influenced by all other members.

The mother–father relationship is often seen as central to the family system, influencing all aspects of family functioning. Therefore, parents' ability to communicate effectively, generate emotional closeness, and support each other's decisions has implications for their children's wellbeing and development. Margolin et al (2001) noted that a family systems perspective is one where inter-parental conflict is a risk factor for children because it is accompanied by an intensification of either intimacy, rejection or both in the parent-child relationship. Poor inter-parental relationships can create problematic family dynamics where family members form coalitions against each other, use their children as scapegoats for their problems, or push their relationship problems away from themselves and onto their children. Parents can sometimes look for solace in their children when their relationship is unsatisfactory. Parents may withdraw from their children, leaving their children's emotional needs unattended. Following situations of inter-parental conflict a parent's emotions may range from frustration and anger to hopelessness. Therefore, they may provide: (a) less praise, encouragement or empathetic support to their children, (b) punitive commands and instructions, (c) inconsistent commands, and (d) poor monitoring (Nelson et al. 2009; Krishnakumar & Buehler 2000).

Similarly, family risk models assume that many family factors affect children’s adaptation, chief among them being couple relationship quality. Cowan et al. (2009) stated that research on IPRQ, parent-child relationship and children’s adaptation has found that unresolved inter-parental conflict is associated with negative developmental outcomes for children.

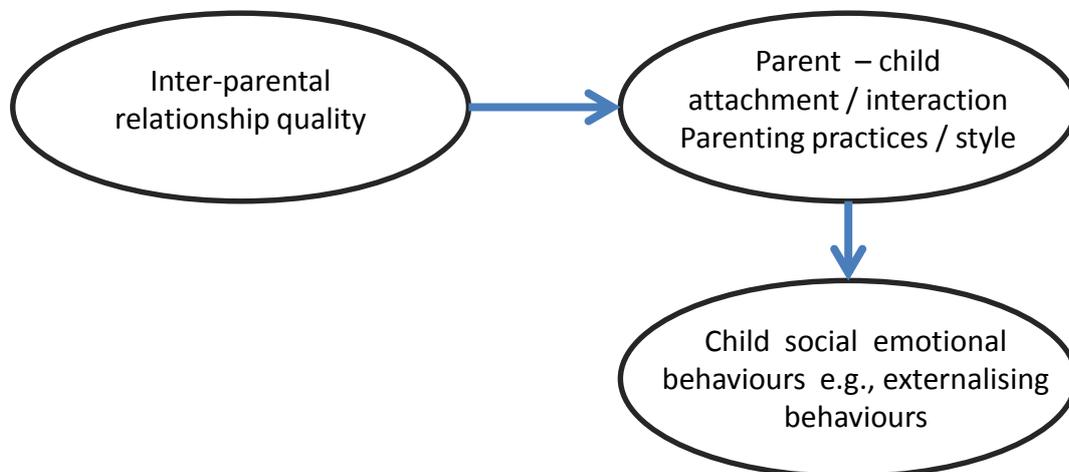
Spill-over hypothesis

The ‘spill-over hypothesis’ has been investigated by a range of researchers and it proposes that feeling or behaviour in one set of relationships transfers directly to another within a family system. As such, difficulties, stress or anger produced in the adult-adult relationship can carry over into the parent-child relationship, and disturbances in the parent-child relationship partially account for the influence of inter-parental conflict on child outcomes (Krishnakumar & Buehler 2000). A number of authors consider there is strong empirical support for the spill-over hypothesis (Bradford & Barber 2005; Harold et al. 2016; Krishnakumar & Buehler 2000).

In addition, Krishnakumar and Buehler (2000) suggested that if an adult has poor interpersonal skills these will also affect the inter-parental and parent-child relationship and therefore spill-over effects may be confounded by the poor interpersonal skills of the parents.

Figure 4 outlines the main mediating factors within the spill-over hypothesis where IPRQ is linked with children’s outcomes.

Figure 4: Spill-over hypothesis where the parent-child relationship and parenting quality mediate the influence of IPRQ on child outcomes



Bradford & Barber (2005, p.145) described the indirect effects of the inter-parental conflict (IPC) as two-fold and appear to have combined elements of the EST-R, cognitive appraisal and spill-over mechanisms. They identify the links as follows: “IPC constitutes a form of intrusion of the parental subsystem into the parent-child subsystem and into child adjustment, thereby creating at least a two-fold risk to children: first, through IPC’s **negative links to child cognitive and emotional processes such as sadness, fear, negative emotionality, and involvement** in IPC [references removed], and second, through IPC’s links to **ineffective parenting** [references removed] and **impaired parent-child relationships** [references removed]”.

Another issue to consider when conducting research in a developmental context is the direction of relationship among factors. Heinrichs et al.'s (2010) review of the link between child emotional and behavioural functioning and couple functioning from a family systems perspective emphasised the importance of bidirectional and recursive relationships within the family system and subsystems. Longitudinal research allows these potentially bidirectional / reciprocal relationships to be investigated through its inclusion of a temporal dimension. Where measured, the sequencing of factors over time allows the observation of factors that may mutually influence each other at different points in time.

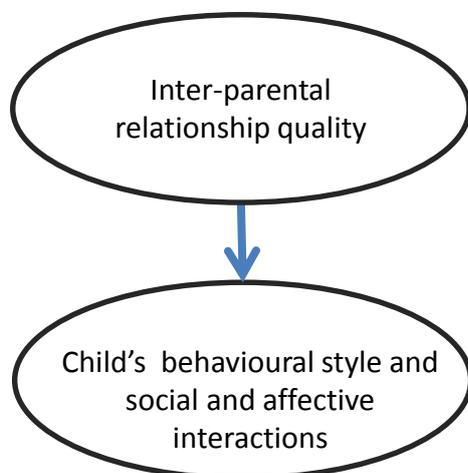
Social learning theory

Social learning theory proposes a direct relationship between IPRQ and children's behaviour. From a social learning perspective children's problematic behaviour results from observational learning, reinforcement of the behaviour within a social context and to a lesser extent biological factors that influence what individuals learn and what they can perform (Margolin et al. 2001). Bandura stated that both behaviour and emotion responses can be developed through observation of others, enabling the acquisition of "large, integrated units of behaviour" (Bandura 1977, p.2). Children model the behaviour and interactions of significant others, in particular their parents (Bandura 1978). Observing positive and low-stress interactions between parents may produce similar behavioural styles in children, whereas observing conflict and negative affect may produce similar behavioural styles in children (Goldberg & Carlson 2014).

Bandura's social cognitive theory considers that behaviour develops through a process of reciprocal causation where environmental influences and personal factors such as cognition, behaviour and biological factors all operate as interacting determinants that influence each other over time (Bandura 1989). These reciprocal influences may not be of equal strength and do not all occur simultaneously. In addition, it will take time for a causal factor to influence other factors and activate reciprocal influences (Bandura 1989).

Figure 5 outlines the direct relationship between IPRQ and children's outcomes from a social learning perspective.

Figure 5: Social learning has a direct relationship between IPRQ and child outcomes



Trauma theory: neurodevelopmental and other physiological consequences of exposure to conflict and violence

Chronic exposure to severe marital conflict and violence has been described as a form of child maltreatment and trauma (Margolin et al. 2001; Artz et al. 2014). However, research on the effects of children's exposure to IPV has been less extensive than on the effects of child abuse (Kitzmann et al. 2003).

Research findings on the neurodevelopmental consequences of early child maltreatment, including exposure to IPV, summarised by Artz et al. (2014), include that: early socialisation strongly influences the structural and functional development of the brain; the most important of all social interactions for an infant is their relationship with the primary caregiver; regular exposure to abusive, neglectful or stressful conditions within the parent-child relationship has long term consequences for physical and mental health. Their analysis was informed by the notion of cascading effects as individual categories of impacts were closely related to one another and influenced each other in multiple and interconnected ways over time.

Similarly, from a life-course perspective, Nusslock & Miller (2015) reported that children exposed to chronic stressors are vulnerable to a range of health and other problems across the lifespan covering the spectrum of mental and physical illnesses.

Research on whether exposure to inter-parental conflict and violence is associated with alterations in neurobiological development and regulation is a developing field but results from a number of studies support the association (Artz et al. 2014). A recent review, supports the contention that exposure to IPV can shape an infant's neurobiology such that it is characterised by enhanced sympathetic reactivity and reduced parasympathetic activity thereby generating a state of perpetual physiological readiness or sensitisation (Artz et al. 2014).

Similarly, Miller's (2015) review noted that a basic response to threatening stimuli has been observed in children as young as three months of age. It is considered that this vigilance toward threatening stimuli does serve some protective function for children in violent households. However, evidence suggests that chronic hyper-arousal is linked to post traumatic stress symptomatology in these children. Miller (2015) concluded from her review that there is strong evidence that threat detection emerges in infancy and is present throughout childhood and has meaningful links to child adjustment. A uniform finding across diverse methodologies is that children with higher threat attenuation are at increased risk for the development of anxiety disorders. This pattern of vigilance toward threat in key developmental periods may in part explain the increased risk of the development of anxiety disorders and post-traumatic stress disorder (PTSD) following exposure to violence.

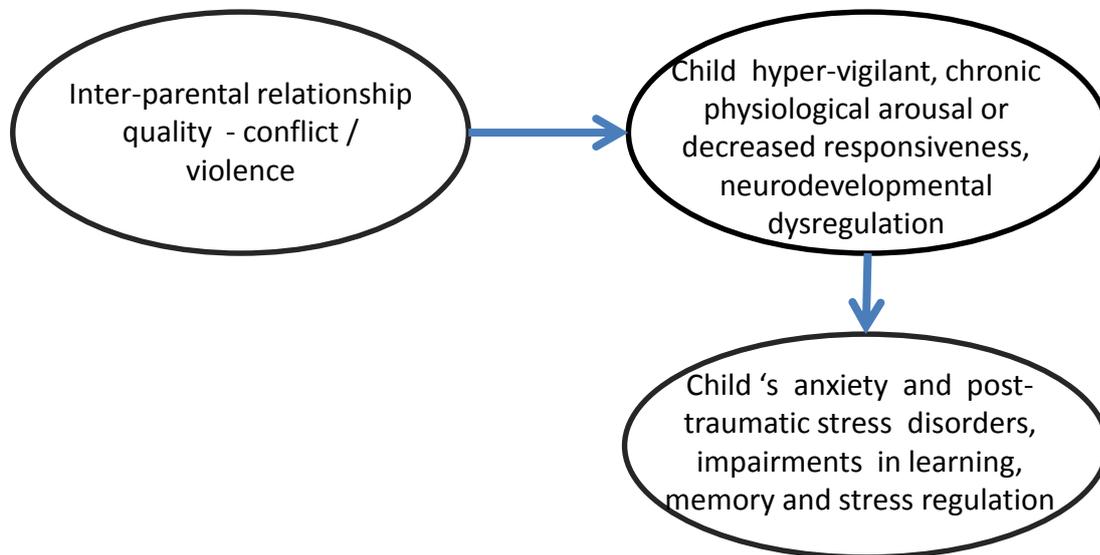
Harold et al. (2016) also reported that the effects of inter-parental conflict are present even in situations where parental separation/divorce and/or domestic violence are not evident and that, children as young as 6 months show higher physiological symptoms of distress to overt, hostile exchanges between their parents compared with non-parental adults. "Infants and children up to the age of 5 years show signs of significant distress by crying, acting out, freezing, as well as withdrawing from or attempting to intervene in

the actual conflict itself. Children between the ages of 6 and 12 years (middle childhood) and 13 and 17 years (adolescence) also show signs of emotional and behavioural distress when exposed to on-going, acrimonious exchanges between parents.” (Harold et al. 2016, p.20)

Campo (2015) noted that, over the past 20 years, much research on children exposed to domestic and family violence has focused on trauma and PTSD. Campo stated that the term trauma is often used to describe a broad range of disorders, symptoms and social problems not covered by the term PTSD. Psychological and behavioural symptoms that may be evident are an inability to manage internal states/emotions, alterations in attention or consciousness and alterations in self-perception. Trauma is associated with sustained or cumulative exposure to abusive interpersonal relationships in childhood.

Overall, despite debate over what constitutes a traumatic stressor, there is agreement over the types of symptoms associated with traumatic experiences (Margolin et al. 2001). Post-traumatic stress generally is recognized through symptoms of re-experiencing, avoidance, and heightened arousal. Heightened arousal, frequently reflected in emotional and physiological dysregulation, is experienced sometimes as hyper-vigilance and exaggerated startle and, other times, as numbing and decreased responsiveness to external stimuli. Both types of dysregulation can potentially impair concentration and attention in children. Similarly, the National Scientific Council on the Developing Child (2014) reported that sustained activation of the stress response system can lead to impairments in learning, memory, and the ability to regulate certain stress responses.

Figure 6: Inter-parental conflict/violence is mediated by threat detection, hyper-vigilance, physiological and neurodevelopmental dysregulation in its effects on children



Resilience frameworks and developmental success

Research has indicated that not all children respond in the same way to the same experience (Harold et al. 2016; Artz et al. 2014). The term 'resilience' has been used to refer to an individual characteristic/factor, a process or an outcome. Whichever way it is used, the National Scientific Council on the Developing Child (2015) consider the essence of resilience is a positive adaptive response in the face of significant adversity. Similarly,

Wright et al. (2013, p.17) define resilience as “positive adaptation in the face of risk or adversity or capacity of a dynamic system to withstand or recover from disturbance” and provide an example of resilience as a child from a violent family doing well in school, having friends, behaving well, and getting along well with the teacher.

Although risk factor approaches have advanced understanding of the problems children experience as a result of specific family risk factors, resilience research focuses on the processes or factors involved where children do not show negative outcomes when exposed to stressful events or experiences. More recent conceptualisations in resilience research use socio-ecological frameworks which emphasise systemic factors as opposed to an individual’s ability to cope under stress. (Ungar et al. 2013). Within ecological frameworks, the study of resilience focuses on the subset of processes in human development that enhance the experience of wellbeing among individuals who face significant adversity (Ungar et al. 2013). So rather than a question of ‘how has the child adapted?’ the question might be ‘how has the home or school environment adapted to meet the needs of the child?’ Ungar et al. (2013, p.349) in their review, state that research has shown that it is children’s interactions with “multiple reciprocating systems, and the quality of those systems, that account for most of children’s developmental success under negative stress”.

The National Scientific Council on the Developing Child (2015) noted that “Multiple lines of research have identified a common set of factors that predispose children to positive outcomes in the face of significant adversity. These factors encompass strengths that derive from the child, the family, peer and adult relationships, and the broader social environments that build and support sturdy brain architecture. When these positive influences are operating effectively, they ‘stack the scale’ with positive weight and optimize resilience. When these positive factors are absent, disrupted, or undermined, there is little to counterbalance the negative effects of significant adversity, thus creating the conditions for poor outcomes and diminished life prospects” (p.5).

Important positive factors identified by these authors include:

- at least one stable, caring, and supportive relationship between a child and the important adults in his or her life, who might be in the family or outside the family
- a child being helped to build a sense of mastery in their life circumstances
- the development of strong executive function and self-regulation skills
- the supportive context of affirming faith or cultural traditions (National Scientific Council on the Developing Child 2015).

Similarly, Campo (2015) identified several factors from the research literature that may mitigate the effect of exposure to inter-parental conflict or violence on children including:

- the extent of children’s peer and social support
- the relationship with their mother or other primary caregiver
- whether the violence is ongoing or short-term
- the age of the child when the domestic and family violence occurred
- whether the child received an adequate response/treatment following exposure to domestic or family violence.

Overall, resilience is seen as situation-specific and is not considered a trait.

Graham-Bermann et al. (2006) found several ecological predictors of traumatic stress symptoms following exposure to IPV. Results indicated that for “Caucasian” children the best predictors were the mother’s mental health and low self-esteem whereas for children from other ethnic backgrounds they were the amount of violence the child was exposed to, mother’s low self-esteem and low income. In contrast social support to the mother (friends, relatives and religion) was protective.

Much of this research is focused on individual level rather than ecological or system level factors. These latter factors may be an area future research.

Conceptualising the effects of exposure to inter-parental conflict

There are various ways to conceptualise exposure risk when considering outcomes across the life course (Kuh et al. 2003). Kouros et al. (2010) stated that empirical studies of inter-parental conflict suggest that it may be useful to conceptualise the effect of inter-parental conflict on children’s long-term socio-emotional outcomes as a ‘developmental cascade’.

Artz et al. (2014) used a similar conceptual framework in their review of the effect of IPV on a range of children’s outcomes. In general, the timing of stress exposure interacts with normal maturational processes to enhance vulnerability for behavioural and mental health problems. Cascade models theorise that early levels and changes in functioning in one domain influence later functioning across different domains.

For example, Andersen & Teicher (2009) investigated the likelihood of adolescent substance abuse as a consequence of childhood adversity. They stated that “the interaction of exposure [to childhood adversity which includes exposure to inter-parental violence] during a sensitive period and maturational events produces a cascade that leads to the initiation of substance use at younger ages, and increases the likelihood of addiction by adolescence or early adulthood” (Andersen & Teicher 2009, p. 516).

Kouros et al.’s (2010) longitudinal research indicated that changes in inter-parental conflict were associated with changes in externalising problems during childhood. Consistent with a developmental cascade model, early trajectories of externalising problems accounted for the longitudinal link between early trajectories of inter-parental conflict and children’s social problems in preadolescence.

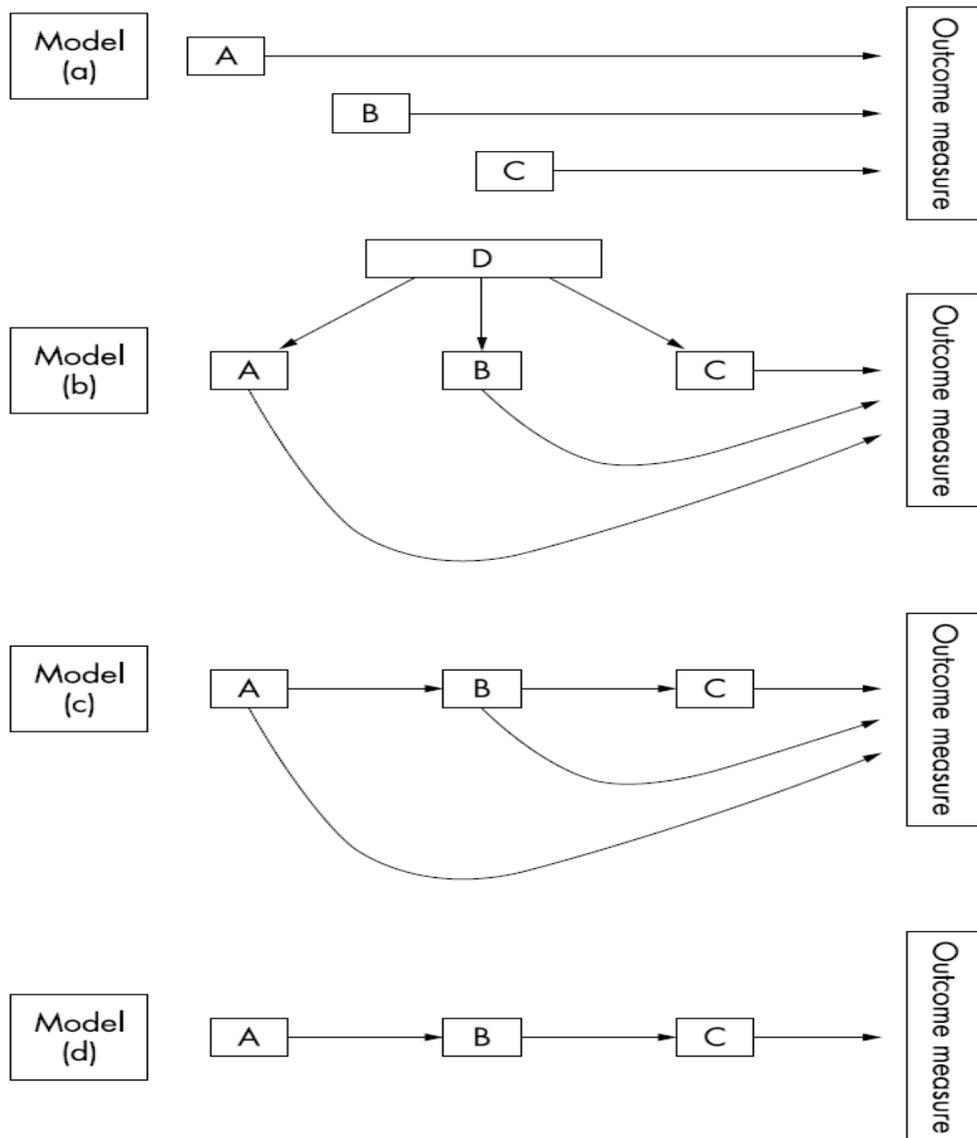
Cascade models are one of several different types of possible trajectories that have been articulated within life course epidemiology. In general, life course epidemiology provides a framework for considering the influence of a range of biological and social risk processes during the life course. Exposures at different life stages may operate in chains of risk (Kuh et al. 2003). A chain of risk model refers to a sequence of linked exposures that raise the risk of an outcome because one negative experience or exposure tends to lead to another and then another. Different types of chains can confer increased or decreased risk and explain links between earlier experiences and later outcomes. This is similar to ‘pathways models’ where social, biological, and psychological chains of risk are possible and involve ‘mediating factors’ and ‘moderating factors’.

In chains of risk each exposure may increase the risk of the subsequent exposures but also have an independent effect on the outcome. When each adverse experience

increases the risk of a specific negative outcome in a cumulative fashion this is called an 'additive effect' and may be a special case of an accumulation model. Alternatively, earlier exposures may not have any effect on the outcome without the final link in the chain that triggers the outcome (Figure 7).

There may be critical or sensitive periods of development where certain exposures may modify structures or functioning in a favourable or unfavourable direction that are not modified significantly by later experiences (Kuh et al. 2003). Another consideration relates to the concurrent exposure to multiple risk factors.

Figure 7: Examples of life course causal models¹



¹ Source: Kuh et al. (2003).

Single risk factor or cumulative risk model approaches to analysis

Evans et al. (2013) noted that developmental risk research initially focused on singular risk factors known or suspected to increase the probability of adverse child outcomes in

order to understand how exposure to childhood risk factors affected development. Now multiple risk factor metrics are sometimes used in developmental psychology as multiple relative to single risk exposures have worse developmental consequences.

Several authors (for example, Appleyard et al. 2005; Evans et al. 2013; Atkinson et al. 2015) have argued for the use of cumulative risk model approaches in developmental risk research. These models involve identifying a proven set of risk factors, dichotomising the score, and tallying them to form a score (Atkinson et al. 2015). Cumulative risk models assert that the accumulation of risk factors, independent of the presence or absence of particular risk factors, impacts developmental outcomes such that the greater the number of risk factors the greater the risk of clinical problems (Appleyard et al. 2005).

Cumulative risk models are useful for prediction of who might be at greater risk of poor outcomes, particularly in circumstances of high numbers of correlated risks. However, these models are potentially less useful when trying to identify effect sizes for specific exposures, mediators of the relationship of exposure to outcome, and moderators of the outcome (Greenland et al. 2016; Greenland & Pearce 2015). As with single risk factor models, cumulative models can produce misleading results (for example, Mishra et al. 2009).

Bidirectional / reciprocal relationships among variables over time

Causal relationships are considered to be linked from one factor to another in one direction. However, during the life course, relationships among factors may be reciprocal, in that they influence each other over time. Research therefore needs to consider the developmental stage at which factors are measured and their relationship with factors measured at previous stages.

Section 2 summary

Research investigating the link between inter-parental relationship quality and children's wellbeing includes a range of constructs and frameworks. From this brief review of the main frameworks referred to in recent literature, the main mediating factors include:

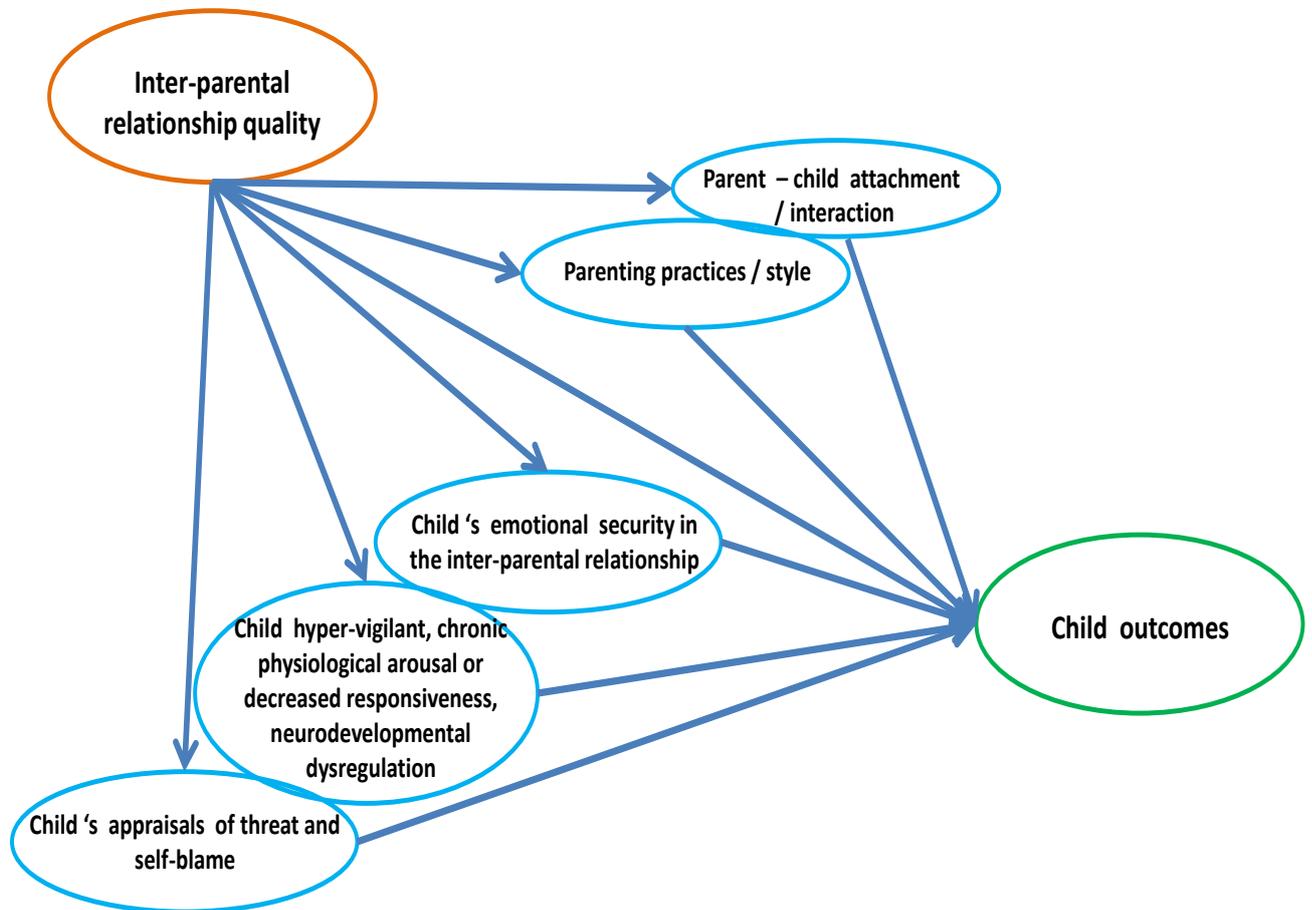
- parenting style and quality (includes both mother-child and father-child relationship)
- parent-child attachment relationships
- children's emotional security in inter-parental and family context
- children's cognitions, appraisals and attributions
- children's trauma responses and subsequent neurodevelopmental trajectories.

Social learning processes (through modelling) provide a direct relationship between IPRQ and children's outcomes. In addition, a range of social-environmental factors may act as protective factors mitigating the negative effects of IPRQ on children's outcomes.

Each of the frameworks has drawn on and contributes to an empirical base. Therefore, if each of the pathways between IPRQ and children's outcomes outlined above has empirical support, it is likely that multiple factors are operating to influence developmental trajectories of children. Figure 8 outlines the direct and indirect relationships diagrammatically. This is a simplified diagram and does not include a time dimension. Also excluded are a range of factors that might be associated with or

influence IPRQ and child outcomes, independent of the pathways identified in this section. This broader set of correlates is discussed in section 4.

Figure 8: Main mediating factors considered in the IPRQ literature for early developmental outcomes



A limitation of these frameworks is that most frameworks take a reductionist approach and concentrate on factors influencing the individuals or relationships within the immediate family (a micro-level system) and do not consider the influence of socio-ecological factors on family relationships at broader organisational, institutional, cultural or national policy (meso-level and macro-level factors). This is defensible when considering early developmental stages as the influence of these factors may be primarily mediated by family and parent-related factors, but potentially not defensible at later developmental stages.

There are several ways to conceptualise the influence of IPRQ on children's outcomes across developmental stages. Developmental cascades and accumulative risk models are two approaches evident in the literature.

The review concentrates on research that is likely to be relevant for earlier developmental stages. Certain mediators are potentially more salient for later developmental stages. For example, cognitive appraisal frameworks which use threat and self-blame as mediating factors may be more relevant for children aged approximately 10 years and older.

Section 3: Evidence of the relationship between IPRQ and child outcomes

This section considers the evidence of the relationship between IPRQ and child outcomes. It is broadly divided into three sections. The first considers evidence relating to children's exposure to positive inter-parental interactions, the second considers exposure to inter-parental conflict, and the third considers exposure to inter-parental violence including 'intimate partner violence'.¹² Evidence relating to the main mediators discussed in section 2 is also considered, where available.

An overview of the evidence is provided. Statistical results from studies that tested multiple pathways through complex modelling techniques have been excluded due to the level and amount of detail required to adequately explain these results. Readers are referred to the specific studies for these details.

As this is a narrative review, the strength of observed effects across studies has not been systematically determined within this review. However, evidence from meta-analyses is provided where available. The size of effects within individual studies needs to be treated with caution where these are estimated from small samples within non-representative populations.

Evidence: Positive inter-parental interactions

Few studies have considered how positive IPRQ influences children's outcomes

Authors have noted the relative paucity of research considering the relationship of positive inter-parental interactions with children's outcomes compared with the work on inter-parental conflict and violence (for example, Fincham & Beach 2010) and its effect on children (for example, Goldberg & Carlson 2014).

Goldberg & Carlson (2014) noted that despite the low number of studies, the dimensions of inter-parental relationships that have shown a positive association with children's wellbeing include parent's supportiveness, their positive feelings and their ability to communicate. These authors do caution however, that these findings were based on small and/or essentially cross-sectional samples.

Howard & Brooks-Gunn (2009) also noted that supportive relationships between parents have been associated with positive parenting behaviours among both married (Krishnakumar & Buehler 2000) and unmarried parents (Carlson & McLanahan 2006).

¹² The term 'domestic violence' has been used to refer to 'intimate partner violence'. However, it can also refer to violence among other family members, not necessarily inter-parental violence. Studies which use the term domestic violence have been included in the review where that term referred to inter-parental violence or intimate partner violence. In this review the terms inter-parental conflict/violence (between parents) and intimate partner violence (between current or ex partners who might be parents but not necessarily) are viewed as overlapping conceptually and operationally.

In recent years, the term 'intimate partner violence' has been refined with increasing agreement among authors about the behaviours and outcomes covered. For example, the definitions used by the World Health Organisation (WHO) and Centers for Disease Control and Prevention outlined below suggest that IPV refers to harmful aggressive, abusing, coercive and controlling behaviours. In contrast, research on 'inter-parental conflict' includes a much wider range of interactions between parents.

Supportive inter-parental relationships do vary over time particularly in response to stressors. For example, Howard & Brooks-Gunn (2009) found that, with the birth of a child, perceptions of inter-parental supportiveness were highest at the time of the birth of a child but steadily declined over time. Similar results were reported by Carlson & VanOrman (2013). Although the level of supportiveness on average varied depending on the initial relationship status, the patterns of change were the same. Covariates that were linked with relationship supportiveness were the length and stability of the relationship prior to pregnancy, relationship status at birth, and birth weight of the child. In related research, Robinson & Parker (2008) noted that based on studies of married couples, the core elements of a healthy relationship/partnership were:

- **Commitment:** *a long-term view of the relationship, perseverance in the face of difficulties; balancing couple and individual needs; a sense of "we-ness" and connection through friendship, shared values and history;*
- **Communication:** *positive and respectful; contains elements of humour and compromise;*
- **Conflict resolution:** *couples understand that some conflict is inevitable; they "fight fair" and learn to "pick their battles"; however, violence is unacceptable;*
- **Interaction and time together:** *quality and quantity are both critical, as is the balance of "couple time" and time spent on individual pursuits, enjoyment of each other's company and of the time together; and*
- **Intimacy and emotional support:** *physical and, in particular, psychological intimacy are core aspects of healthy relationships and are developed and strengthened over time, particularly through overcoming difficulties.* (Robinson and Parker, 2008: p. 4/5)

Research detailing the size of the effect associated with these dimensions of positive IPRQ with child outcomes was not found in the literature.

Evidence: Inter-parental conflict

Inter-parental conflict is consistently associated with negative outcomes but is it causal?

Research on IPRQ, parent-child relationship quality, and children's adaptation has found that high, unresolved marital conflict between parents is associated with negative indicators of development in their children and adolescents (Cowan et al. 2009; Davies, Martin, et al. 2016; Harold et al. 2016). In addition, situations with high levels of unresolved inter-parental conflict and where the child is the focus of the conflict are associated with poorer developmental outcomes (Cowan et al. 2009).

These associations between inter-parental conflict and children's functioning have been shown across infancy, childhood and adolescence including effects on cognitive, social and interpersonal, academic, psychological, biological and physical health (Cummings & Davies 2002; Davies, Martin, et al. 2016; Harold et al. 2016).

Although associations with a range of negative outcomes are consistent, research now seeks to identify causal relationships and mediating factors, while taking into account the multiple factors that influence children's outcomes.

Inter-parental conflict is part of family life and varies on multiple dimensions

Apart from the small number of studies that have focused on positive IPRQ, the research falls broadly into two categories. The first considers inter-parental conflict and the second considers inter-parental violence, including intimate partner violence. These concepts overlap but literature on inter-parental violence including 'intimate partner violence' focuses on violent, coercive or controlling forms of inter-parental interactions whereas the inter-parental conflict literature includes a broad range of conflict types and behaviours.

Cummings & Davies (2002) described inter-parental conflict as "normal and unavoidable in marriages especially if one defines conflict broadly to include any disputes, disagreements or expressions of untoward emotions over everyday matters between the parents".

Increasing attention is being paid to the types of interactions that are categorised as inter-parental conflict or violence. Authors (for example, Bradford & Barber 2005; Krishnakumar & Buehler 2000; Cummings & Davies 2002) have noted that parental conflict varies on multiple dimensions with differing effects on children. Krishnakumar & Buehler (2000) also observed that differences and disagreements over familial and non-familial issues are part of family life and that inter-parental conflict is a multi-dimensional construct which includes frequency, mode of expression, chronicity or duration, intensity, and degree of resolution.

El-Sheikh et al. (2008) also noted that inter-parental conflict can take many forms, for example, displays of both positive and negative emotions, and constructive (for example, problem-solving) and destructive (for example, physical assault) tactics. They considered inter-parental aggression typically involving physical and/or psychological abuse at the negative extreme of a continuum of inter-parental conflict.

Bradford & Barber (2005) reported five styles of inter-parental conflict: overt (including verbal and/or physical), covert, cooperative, avoidant, and withdrawn. Overt, covert and avoidant styles were considered hostile. Buehler et al 1994 (cited in Bradford & Barber 2005) described 'overt conflict' as open disagreement that used threatening, yelling, insults and name-calling behaviours. 'Covert conflict' was described as the use of passive-aggressive tactics, such as triangulating children into conflict or denigrating the other parent in the presence of the child. It might also include indirect behaviours not directly involving the children such as resentment and non-verbalised tension. They noted that where the child is directly involved in the conflict, it is particularly harmful to the child.

Although a wide range of behaviours have been associated with inter-parental conflict, the majority of studies have focused on hostile overt conflict (Bradford & Barber 2005; Krishnakumar & Buehler 2000).

Different types of inter-parental conflict have different effects on children

Although a range of inter-parental conflict types have been identified, researchers in the field do not always use consistent definitions. However, recent research does indicate that different types of inter-parental conflict are associated with different types and levels of effects on children.

Cummings et al. (2009) reported that their research programme has shown children perceive physical inter-adult conflict as more angering and distressing than verbal inter-parental altercations but all forms of inter-parental conflict, including physical, verbal, or covert (for example, silent treatment) evoke negative feelings and distress in children. Raver et al (2015) also reported differences in emotional outcomes for children who were followed from 6 to 58 months and exposed to physical versus verbal inter-parental aggression.

Recent research using a reformulated version of the emotional security theory (EST-R) also supports a differentiated view. Davies, Hentges, et al. (2016) distinguished three types of inter-parental conflict: inter-parental **hostility** which comprises parental expressions of anger, frustration, and aggression during conflicts; inter-parental **disengagement** which comprises parental withdrawal, detachment and avoidance behaviours; and **uncooperative** inter-parental conflicts which comprises low levels of warmth, support and collaborative problem solving. In their longitudinal study of 243 children, they hypothesised that these different types of inter-parental conflict influence children's levels of emotional security which in turn manifest in elevated fearful distress, avoidance and negative cognitions. Emotional insecurity would then lay the basis for future behaviour problems. Three annual measurement occasions using multi-method, multi-informant measurement approach were conducted with two age groups (preschool children and young adolescents).¹³ Their research showed that inter-parental hostility was a stronger predictor of the "prospective cascade" of children's insecurity and subsequent externalising problems than inter-parental disengagement or low levels of co-operation. Disengagement was a stronger predictor of insecurity and externalising problems than low inter-parental cooperation for adolescents.

Another study by Davies, Hentges & Sturge-Apple (2016) within an Emotional Security Theory framework focused on the child's reactivity to inter-parental conflict. They observed four profiles: the **secure** profile designed to efficiently address direct threat but supported by a confidence that parents will effectively manage the dispute; a **mobilising** profile which the authors propose serves the function of actively defending oneself while remaining vigilant to maintaining social ties (that is, vigilance to potential threat and social opportunities expressed through fear or distress, caretaking, submissiveness, ingratiation, and/or over-bright behaviour); a **dominant** profile designed to defeat the threat accompanying inter-parental conflict through use of domineering tactics with parents (that is directly defeat threat expressed through high vigilance, affective indifference, and demanding, coercive and controlling behaviours); and a **demobilising** profile designed to reduce the child's salience as a target of hostility

¹³ Important covariates in the first wave of data collection for this analysis were family income, child gender, paternal parenting quality and maternal parenting quality. Readers interested in the details of the results are referred to the original article as the multiple results are presented from structural equation modelling.

(that is reduce salience as a target of hostility through vigilance, quiet disengagement or freezing, submissiveness and dysphoria).

Kouros et al.'s (2010) study also found that inter-parental conflict was a robust predictor of children's externalising behaviour problems. Their longitudinal study of 235 children over three years beginning when the children were in kindergarten considered the trajectories of inter-parental conflict and early externalising problems during childhood and the early trajectories of externalising problems as a pathway by which inter-parental conflict impacts children's social competence in preadolescence. The results indicated that changes in inter parental conflict were positively associated with changes in externalising problems during childhood. Early trajectories of externalising problems accounted for the longitudinal link between early trajectories of inter-parental conflict and children's social problems in preadolescence.

Mannering et al. (2011) found that marital instability when the child was nine months predicted sleep difficulties at 18 months, but sleep difficulties did not predict marital instability. That is parental relationship difficulties influenced children's sleep difficulties.

Evidence suggests that parenting behaviour and parent-child relationship quality are partial mediators between IPRQ and children's outcomes

A number of authors consider there is strong empirical support for a spill-over hypothesis whereby inter-parental difficulties or stress affect the quality of the relationship between each parent and their child(ren) (Bradford & Barber 2005; Harold et al. 2016; Krishnakumar & Buehler 2000).

In their meta-analysis of the relationship between inter-parental conflict and parenting, Krishnakumar & Buehler (2000) found a medium-to-large effect size (Cohen's $d = -0.62$) between inter-parental conflict and negative parenting behaviours across 39 studies.¹⁴ High levels of conflict were associated with poor parenting, in particular, parents exercised more harsh punishment or showed a lack of acceptance of their child (Krishnakumar & Buehler 2000). Another large study of American families and households ($N = 2,541$) found that maladjustment in children aged 2 to 11 years was associated with harsh discipline and a lack of parental involvement as a consequence of parental conflicts but the independent effects of inter-parental conflict remained (Buehler & Gerard, 2002). However, there were differences across age groups and ethnicity of the parents (for young children).

Garriga & Kiernan (2014) used data from the UK Millennium Cohort Study (MCS) to examine the extent to which partners' relationship quality affected children's externalising problems and whether the quality of the mother-child relationship mediated and or moderated the effect. In addition they considered whether the effect of partners' relationship quality differed according to the sex of the child, parent's marital status, household income and mother's education level and ethnic background. Over, 13,000 families participated in the three waves of data collection used for this study when the children were between three and five years of age. The cohort is a nationally

¹⁴ For a visual representation of Cohen's d refer to website <http://rpsychologist.com/d3/cohend/>

representative sample of children from different ethnic and socio-demographic backgrounds

Garriga & Kiernan (2014) found that IPRQ was associated with children's externalising problems, even after controlling for prior behaviour problems and other potentially confounding factors. The effect on children's emotional wellbeing was not fully explained by the quality of the mother-child relationship, and a direct effect for parental relationship quality remained significant. Although maternal warmth and maternal conflict (with the child) mediated approximately 53 percent of the effects of IPRQ at age 3 years on externalising problems at age 5 years, the longitudinal direct effect of IPRQ on externalising problems remained significant. The authors noted that this indicates that both parental relationship quality and the maternal-child relationship have significant independent effects on children's externalising problems. From their analysis, having a mother who exhibits more warmth towards her child does not reduce the detrimental effects of parents' relationship problems on children's behaviour. However, where there is a high level of conflict in the mother-child relationship, the harmful effects of parents' relationship problems are stronger.

Garriga & Kiernan (2014) noted that their findings are similar to findings in other studies (Frosch & Mangelsdorf, 2001; El-Sheikh and Elmore-Staton, 2004; Buelher and Gerard, 2002). The authors stated that inter-parental and mother-child relationship problems are important and related, and policy that focuses on one to the exclusion of the other is likely to be less effective in improving children's wellbeing. In their study, poverty moderated the relationship between IPRQ and externalising behaviours where the effect of parents' relationship problems was greater for poorer children than for children living in wealthier families. Thus, having parents with good relationship quality was particularly protective for children living in poverty. The study did not find differences for mothers with different educational attainment or ethnic background or for families married or co-habiting.

Several studies cited above partially supported the hypothesis that IPRQ influences child outcomes through the parent-child relationship but not fully, suggesting that IPRQ and parent-child relationships also have independent effects. Bradford & Barber (2005) summarise research in this area stating that inter-parental conflict has direct links to children's wellbeing and also through inter-parental conflict's links to ineffective and intrusive parenting. They consider that research also suggests that covert conflict styles are particularly intrusive – and potentially coercive – to children due to inter-parental conflict's linkages with parental psychological control. Research findings therefore point to the need for integrative interventions that address the components of the spill-over model; that is, interventions that help parents deal well with conflict and that support good parenting, and interventions that assist children in coping with the difficulties of inter-parental conflict.

The influence of inter-parental conflict on father-child relationships differs from its influence on mother-child relationships

Several studies have shown that parental gender is differentially associated with the extent to which IPRQ spills over to parenting practices. Parent-child relationships potentially mitigate or aggravate the effects on children. Harold et al. (2013), noted that while both the mother-child and father-child relationships offer indirect mechanisms

through which inter-parental conflict influences children's behaviour problems, their study found associations between inter-parental conflict and parent-to-child hostility were significantly stronger for fathers compared to mothers. They considered that this finding adds to emerging research suggesting that the father-child relationship is at least as important as the mother-child relationship in accounting for family process influences on children's psychopathology (Harold et al. 2013).

Davies et al.'s (2009) study also examined the spill-over hypothesis in particular the conditions and mechanisms underlying the transmission of distress from the inter-parental relationship to parenting difficulties over a two year period in a sample of 233 mothers and fathers of kindergarten children. Their findings indicated that parent gender moderated associations between inter-parental conflict and parental psychological control and insensitivity to children's negative emotion. Pathways between inter-parental conflict and parenting difficulties over the two year period were significant for fathers, but not mothers. Analysis of insecurity and depressive symptoms as psychological mechanisms of the spill-over from inter-parental conflict to parenting revealed that adult relationship insecurity was a significant mediator in the pathway for fathers.

Attribution processes such as appraisals of threat and self-blame influence adolescent outcomes

As indicated in section 2, attribution processes such as appraisals of threat and self-blame have been investigated particularly in relation to older children and adolescents. Harold et al. (2016) noted that research has supported appraisals of threat and self-blame as mediators of inter-parental conflict with children's outcomes.

A meta-analysis of studies considering the relationship between cognitions and adjustment problems (internalising, externalising and overall adjustment behaviours) for children aged 5 to 19 years found an overall aggregated effect size between children's cognitions and adjustment problems of $r=0.18$ ($p<0.001$).¹⁵ Threat and self-blame cognitions had greater effect sizes ($r=0.21$ to $r=0.40$, $p<0.001$) than other cognitions considered.

In another study, Harold et al. (2007) considered the influence of inter-parental conflict on children's low academic attainment among a sample of 230 school children (aged 11 to 13 years). They controlled for children's initial levels of aggression (observation Time 1). The proposed theoretical model linked parent and child reports of inter-parental conflict at Time 1 (1999) to children's perceptions of negative parent-child relations, appraisals of self-blame for marital conflict and teacher reports of children's aggressive behaviour at Time 2 (2000), which in turn were linked to children's performance on standardized academic tests (English, Math, Science) at Time 3 (2001). Support was found for the role of children's self-blaming attributions for parents' marital arguments, not negative parenting behaviour, as a mechanism through which variation in their academic attainment is explained.

These authors state that findings suggest that attribution processes generated in children who live in households with high levels of inter-parental conflict and hostility have important implications for their long-term academic success.

¹⁵ The effect size measure r is a weighted aggregate effect size (correlation).

Negative effects of IPRQ are mitigated by parents resolving conflicts and not having children as the conflict focus

Cummings & Davies (2002) cited research showing that children's distress is diminished where parental conflicts are resolved and distress is related to the degree of conflict resolution. In addition research indicates that providing children with further information about resolution benefits children. Inter-parental conflict that is about the children and child rearing is especially distressing for children and is related to higher levels of externalising problems.

A recent longitudinal study by Jouriles et al. (2014) examined whether child involvement in inter-parental conflict predicted child externalising and internalising problems in violent families. Results indicated that children's involvement in their parents' conflicts was positively associated with child adjustment problems. These associations were evident for child externalising as well as internalising problems. In addition, child involvement in parental conflicts predicted later child reports of externalising problems, but child reports of externalising problems did not predict later involvement in parental conflicts.

Recent research suggests social factors strongly influence the association between IPRQ and children's outcome

Harold et al. (2016, p.35) noted that "a fundamental challenge to the hypothesis that specific child-rearing experiences (including inter-parental conflict) impact children's psychological outcomes is that associations between such experiences and their psychological symptoms may be explained by genetic factors passed on from parents to children, more so than specific features of the child-rearing environments provided by parents".

Recent research has used novel designs with genetically related and genetically unrelated parents and children to test the hypothesis. In one study, Harold et al. (2013) examined the relationship between inter-parental conflict, hostile parenting, and children's externalising problems. Indirect associations were found from inter-parental conflict to child externalising problems through mother-to-child and father-to-child hostility, for both genetically related and genetically unrelated parents and children.¹⁶ Findings from such studies (Harold et al. 2012; Harold et al. 2013) provide greater confidence that associations cannot be explained by shared genetic makeup alone.

Evidence: Inter-parental violence / Intimate partner violence (IPV)

A number of studies have specifically considered the effects on children of exposure to inter-parental violence, including intimate partner violence (IPV). Literature indicates that work on definitions relating to IPV and children's exposure to IPV is continuing.

¹⁶ Note that the study did not attempt to quantify the influence of genetic versus social factors but took the confounding effect of genetic factors into account by comparing the relationship of IPRQ with children's outcomes in genetically-related and genetically-unrelated parents and children.

Definitions of intimate partner violence are becoming more consistent but debate continues

The definition of intimate partner violence detailed by the World Health Organisation & London School of Hygiene and Tropical Medicine is: "behaviour within an intimate relationship that causes physical, sexual or psychological harm, including acts of physical aggression, sexual coercion, psychological abuse and controlling behaviours" (World Health Organization & London School of Hygiene and Tropical Medicine 2010, p. 11).

These authors make the point that research in this field has not sufficiently differentiated the nature or the outcome of the violence. They also noted that IPV occurs mainly from adolescence and early adulthood onwards, more frequently in the context of marriage or cohabitation, and usually includes physical, sexual and emotional abuse as well as controlling behaviours (World Health Organization & London School of Hygiene and Tropical Medicine 2010).

The Centers for Disease Control and Prevention's definition of IPV used for population monitoring purposes is similar to the definition described above and is: "Intimate partner violence includes physical violence, sexual violence, stalking and psychological aggression (including coercive tactics) by a current or former intimate partner (i.e., spouse, boyfriend/girlfriend, dating partner, or ongoing sexual partner)." (Breiding et al. 2015, p. 11)

Within this definition physical violence is defined as the intentional use of physical force with the potential for causing death, disability, injury, or harm. Sexual violence is defined as a sexual act that is committed or attempted by another person without freely given consent of the victim or against someone who is unable to consent or refuse. Stalking is defined as a pattern of repeated, unwanted, attention and contact that causes fear or concern for one's own safety or the safety of someone else (for example, family member, close friend). Psychological aggression is defined as the use of verbal and non-verbal communication with the intent to harm another person mentally or emotionally and/or exert control over another person. This definition also explicitly includes both current and former partners.

Kelly & Johnson (2008) described four types of violence differentiated on the basis of partner dynamics, context and consequences. In this typology, coercive control is central to distinguishing between 'coercive controlling violence' from 'situational violence' (Hardesty et al. 2015). However, Johnson's typology has not been fully replicated (for example, Gulliver & Fanslow 2015).

Internationally, there is considerable debate about the type and level of violence perpetrated within relationships by perpetrator gender. The World Health Organization & London School of Hygiene and Tropical Medicine commented on findings from surveys that men and women perpetrate IPV at the same rate stating that:

Despite findings (mainly from the United States), based on self-reports, that men and women perpetrate intimate partner violence at approximately the same rate (Archer, 2000, 2006; Currie, 1998; Strauss, 1998, 2009), women are over-represented in terms of deaths and severe injuries due to intimate partner and sexual violence, and in emergency room and clinical populations (Anderson, 2005; Archer 2000, 2006; Straus 1999, 2009). The findings of sex symmetry primarily concern the less-severe

forms of physical intimate partner violence and appear to apply mainly to high-income western countries (Archer, 2006). (World Health Organization & London School of Hygiene and Tropical Medicine 2010, p. 9)

Not all authors agree with this interpretation of evidence about the nature and level of partner violence perpetration by gender (for example, Johnson et al. 2014; Johnson 2011; Hamel et al. 2015; Hamel 2009). Overall, greater specification of the population groups and characteristics included in data collections and analyses, the types of violence perpetrated, the outcomes of the violence, and the nature of the relationships (for example, former or current partners) and the timeframes covered in the data collection, may help clarify this debate.

Definitions of children's exposure to IPV vary across studies

Evans et al. (2008) noted that there has been little agreement in how to define exposure to IPV whether it includes children actually seeing it or not, seeing particular violent acts, being aware that it occurs or hearing about it through others. Dimensions of violence are not always assessed such as the type and extent of the violence, whether it is unidirectional or bidirectional, and the severity and frequency of the violence.

Artz et al. (2014) reported that children living in homes where IPV occurs might be exposed to such violence through witnessing, seeing its effects, hearing about it, or otherwise being made aware that violence is happening.

IPV and child abuse often co-occur and each influences children's outcomes

Children exposed to inter-parental violence are often also the victims of child abuse (Artz et al. 2014; Bedi & Goddard 2007; Holt et al. 2008). Holt et al. (2008) reported that estimates of the prevalence of co-occurrence between IPV and child abuse vary but report on results of several studies with results ranging from 30 to 70 percent. Bedi & Goddard (2007) also noted the wide variance in estimates from studies. Overall, children exposed to IPV have a greater likelihood of being abused themselves not just witnessing abuse (Cummings et al. 2009) and current research might under-estimate the extent of co-occurrence (Bedi & Goddard 2007).

Murphy et al. (2013) in their review of the co-occurrence of IPV and child maltreatment reported that the United States National Survey of Children's Exposure to Violence (NatSCEV) is the most comprehensive attempt to measure exposure to violence in the home, school and community for children and young people aged 0 to 17 years. This study showed that exposure to IPV was significantly associated with child maltreatment and exposure to other forms of family violence. A third (34 percent) of the children who had witnessed IPV had also been abused (including physical abuse, psychological abuse, neglect, custodial interference, and sexual abuse by a known adult) in the past year, compared to nine percent of those who had not witnessed IPV. Over their lifetime, more than half of those (57 percent) who had been exposed to IPV had also been maltreated, compared to 11 percent of those who had not been exposed to IPV. Two thirds (68 percent) of children witnessed IPV by men only.

Children exposed to IPV and other traumas are likely to have increased rates of negative outcomes beyond exposure to IPV only and differentiating the effects of exposure to IPV

from other trauma may be difficult. Graham-Bermann et al.'s (2012) study of 120 preschool children (aged 4 to 6 years) exposed to IPV in the previous two years, indicated that 38 percent were exposed to additional traumatic events, including sexual assaults by family members, physical assaults, serious accidents, and/or life-threatening illnesses. Compared with exposure to IPV alone, exposure to both IPV and additional traumatic events was associated with higher rates of PTSD diagnoses, traumatic stress symptoms (Cohen's $d = .96$), and internalising (Cohen's $d = .86$) and externalising behaviour (Cohen's $d = .47$) problems.¹⁷

Gustafsson et al. (2014) reported that children exposed to IPV are at risk from physical abuse by the perpetrator of IPV but they may also be at risk of abuse from the parental victim as well. A study of 581 American families, from predominantly low-income rural communities, found that father-perpetrated partner violence was associated with child-directed physical aggression from the mothers of pre-school children. IPV perpetrated by the father when the children were three years old was associated with mother perpetrated aggression and violence when their children were five years old. While controlling for a number of demographic covariates, Gustafsson et al. (2014) found that both IPV and child-directed violence resulted in child behavioural problems independently, and both forms of violence were equally detrimental.

Research on IPV has methodological challenges

Since the 1980s, empirical research on the effects of children's exposure to IPV has been reported (Evans et al. 2008) but initially this research was criticised for severe methodological limitations (Evans et al. 2008; Artz et al. 2014; Holt et al. 2008). There is now a growing body of research that has considered the effects of IPV on children's behaviour and development with increasing methodological sophistication. However, authors acknowledge continuing methodological challenges in determining the effects of exposure to IPV including distinguishing between the effects of exposure to IPV and other forms of child abuse and neglect.

IPV is associated with a range of negative effects which interconnect over time

Overall, children's exposure to IPV is associated with a wide range of negative physical health, behavioural, emotional, cognitive problems and academic outcomes for children of all ages (Artz et al. 2014; Miller 2015; Wolfe et al. 2003). Reviews and meta-analyses include: Artz et al. 2014; Chan & Yeung 2009; Evans et al. 2008; Kitzmann et al. 2003; Wolfe et al. 2003.

Kitzmann et al.'s (2003) meta-analysis of 118 early empirical studies (1978 to 2000) found that 67 percent of children exposed to domestic and family violence were at risk of a range of developmental and adjustment problems and fared worse than other children, in terms of academic success, cognitive ability, mental health and wellbeing. Evans et al. (2008) examined the relationship between childhood exposure to domestic violence and children's internalising, externalising, and trauma symptoms. Results from 60 reviewed studies resulted in 'moderate' mean weighted effect size Cohen's d values of .48 and .47

¹⁷ For a visual representation of Cohen's d refer to website <http://rpsychologist.com/d3/cohend/>

for the relationship between exposure to domestic violence and childhood internalising and externalising symptoms, respectively.

Other studies have indicated smaller effects. Results from Wolfe et al.'s (2003) meta-analysis of 41 studies indicated that children's exposure to IPV was related to emotional and behavioural problems, translating to a small overall effect ($Zr = .28$).¹⁸ They also reported that where the children also experienced abuse, this was associated with an increased level of emotional and behavioural problems above and beyond exposure to IPV alone, based on four available studies. Similar to Wolfe et al. (2003) and Kitzmann et al. (2003), Chan & Yeung (2009) found that the effect was somewhat small ($Zr = .201$). There was significant dispersion in effect sizes among different types of child adjustment outcomes so aggregating across different types of outcomes is problematic. These authors themselves noted that their results were similar to those of Kitzmann et al. (2003) and Wolfe et al. (2003).

Artz et al.'s (2014) review covered the relationship of IPV exposure to neurological disorders; physical health outcomes; mental health challenges; conduct and behavioural problems; delinquency, crime, and victimization; and academic and employment outcomes of children and young people. They observed that individual categories of impacts were closely related and influenced each other in multiple and interconnected ways over time. Overall, these authors stated that research shows that children who are exposed to IPV are at significant risk for lifelong negative outcomes.

Sturge-Apple et al.'s (2012) study of parents and their toddler, who were from impoverished backgrounds and had higher levels of IPV, showed that IPV and the mother's emotional unavailability were differentially associated with children's adrenocortical stress reactivity. Their results indicated that different aspects of family contexts differentially influence children's physiological regulatory capacities. They suggested that disruptions to homeostatic set-points in biological stress response systems in young children may underpin long-term difficulties across a variety of outcomes including emotion regulation, social development, as well as physical and mental health difficulties.

Exposure to IPV in utero and before school is associated with a range of outcomes for mothers and children

IPV experienced during pregnancy is associated with a range of adverse pregnancy outcomes and with later effects on children's developmental outcomes. These associated outcomes include low birth weight, preterm labour/delivery, infection, miscarriage, unsafe abortion, placental abruption, foetal injury and perinatal death. Mental health consequences for the mother include depression, anxiety disorders, post-traumatic stress disorder, suicide (attempts), difficulties or lack of attachment to the child (World Health Organisation 2011; Van Parys et al. 2014). Associated behavioural risks include delayed entry into prenatal care, poor maternal nutrition and use of tobacco, alcohol and illicit drugs (Van Parys et al. 2014; World Health Organisation 2011). These associated outcomes are aside from the physical injuries that are sustained.

¹⁸ Zr refers to Fisher's transformation of r , which was used to standardise effect sizes.

Campo (2015) cited evidence of similar associations with IPV during pregnancy including: complications in pregnancy and birth; low birth weight; premature labour and miscarriage; foetal stress and/or trauma; maternal substance abuse and smoking; maternal depression/anxiety/post-natal depression; and sexually transmitted infections. Neurobiological research suggested that new-borns exposed to domestic and family violence in utero are born with high levels of stress-related hormones.

Children's cognitive development is affected by IPV

A study by Gustafsson et al. (2013) investigated the relationship between IPV and children's memory. Mother-reported IPV when the children were 30 months old was a significant predictor of children's short-term, working, and deliberate memory at 60 months of age, even after controlling for the children's sex and race, the families' income-to-needs ratio, the children's expressive vocabulary, and maternal harsh intrusive parenting behaviours.

Similarly, Raver et al. (2015) found that higher levels of exposure to inter-parental physical aggression was associated with lower levels of ability to identify emotions at 58 months of age. This finding was in accord with findings that children exposed to inter-personal violence had problems in encoding, processing and retrieving emotional information. In contrast, children exposed to higher levels of verbal aggression but not physical aggression was associated with higher, not lower levels of emotional literacy. These authors also found that higher levels of verbal aggression were associated with higher levels of emotion regulatory difficulty at 58 months once other factors were taken into account. Overall, the authors concluded that exposure to greater levels of inter-parental conflict, more chaos in the household, and a higher number of years in poverty can be empirically distinguished as key contributors to 58-month-olds' ability to recognize and modulate negative emotion.

The factors that mediate the relationship between IPV and child outcomes are still poorly understood

Cummings et al. (2009) consider that the negative impact of IPV on children's adjustment has been established. However, they stated that the processes that operate as mediators between IPV and children's outcomes and the variables that function as vulnerability or protective factors are still poorly understood. They also noted that there is little longitudinal research examining these associations. Further work is needed to better understand the processes by which IPV affects children's development across multiple domains of functioning. There is uncertainty about how the timing of, and length of exposure to, IPV differentially impacts children. The scarcity of longitudinal studies means understanding of children's developmental trajectories in the context of IPV is still developing.

Mental health consequences of IPV for mothers influences children's outcomes

Howell et al. (2016) observed that evidence indicates that one way IPV exposure is linked with children's outcomes is through the mental health consequences experienced by their mothers. A mother's level of distress during pregnancy affects parental warmth, caregiving and the development of healthy attachment patterns. They also stated that continued IPV exposure is likely to interfere with infants' and toddlers' attachment relationships, particularly with their mother. They report on research indicating the

attachment style and levels of attachment were associated with the mother's IPV exposure. Lower levels of IPV were associated with more stable attachment relationships.

Evidence from inter-parental conflict studies supports the association. A large longitudinal study of 14,514 British parents found that higher levels of conflict between parents and depression, at both antenatal and postnatal stages, had direct effects on emotional and conduct problems in young children (Hanington et al. 2012). Higher levels of marital conflict partially mediated the relationship between postnatal depression in both mothers and fathers and child outcomes, and acted as an independent risk for adverse outcomes. Parental depression (maternal and paternal) and higher levels of marital conflict in the antenatal period were both associated with adverse effects which persisted even when postnatal stresses were taken into account.

Traumatic stress as a partial mediator

Miller et al. (2012) found, in their investigation of the mediating role of traumatic stress between IPV and children's adjustment, that traumatic stress symptoms partially mediated the relationship of IPV exposure on externalising problems and fully mediated the effects for internalising and total adjustment difficulties. They stated that traumatic stress symptoms and child adjustment are related but distinct constructs.

Influence on the parent-child relationship

As noted above, Gustafsson et al. (2014) investigated the longitudinal linkages between IPV and physical aggression directed toward the child, in addition to their relative contribution to child behavioural functioning at school entry. Bidirectional relationships across time were found, such that father-perpetrated IPV at 36 months was associated with increases in maternal physical aggression toward the child at 60 months old and maternal physical aggression directed toward the child at 36 months was also associated with increases in IPV at 60 months. Longitudinal associations between father-perpetrated IPV and mother-perpetrated child-directed physical aggression showed that both IPV and mother perpetrated aggression contributed to child behaviour problems at school entry.

Section 3 summary

The evidence cited above indicates that IPRQ influences children's developmental outcomes and future life chances both directly and indirectly. That is, how parents communicate and relate to each other is important for their children's development because it directly affects children through, for example, social learning processes. It also affects children indirectly through, for example: its influence on parenting practices; the parent-child relationship; social-emotional attachments with caregivers; emotional security in the inter-parental relationship; and an infant's physiological and neural development.

Recent studies that take into account the potential confounding effect of the shared genetic makeup of children and their parents suggest that indicate that associations between IPRQ and children's outcomes cannot be explained by shared genetic makeup alone and that the social environment plays a central role in influencing children's outcomes.

Most of the available evidence investigates the effects of inter-parental conflict or violence rather than positive IPRQ. Inter-parental behaviours that are considered positive for children's development include parents' supportiveness of one another, positive feelings towards one another, ability to communicate, and ability to resolve conflict positively.

Definitions of exposure to inter-parental conflict and violence are developing, rather than established and consistent across the literature.

Children of all ages can be affected by inter-parental conflict or violence, with effects evidenced across infancy, childhood, and adolescence. Parents/couples who engage in frequent, intense, violent and poorly resolved inter-parental conflicts increase the likelihood of negative outcomes for their children. These negative outcomes cover biological, psychological and social domains and include cognitive, social and interpersonal, academic, psychological, biological and physical health outcomes.

Exposure to IPV can have neurobiological developmental consequences which influences emotional and cognitive developmental trajectories. Similarly, IPV exposure affects socio-emotional development (such as children's 'attachment' and emotional security in the inter-parental relationship) which again influences later developmental trajectories.

Research suggests that IPRQ influences parenting practices and the quality of the relationship between the parent and the child. Inter-parental conflict can adversely influence both the mother-child and father-child relationships, with some evidence suggesting that the association between inter-parental conflict and negative parenting practices may be stronger for the father-child relationship compared to the mother-child relationship. Parenting may be affected in a number of ways, such as highly intrusive and hostile parenting through to lax, disinterested parenting, all of which are associated with negative developmental outcomes for children.

IPV may influence the mental health and security of parents which in turn influences their relationships with their children. IPV and child abuse co-occur in a relatively high proportion of families (although estimates are not yet definitive) and both can independently and negatively influence children's outcomes.

The wider family or community environment is an important context that can mitigate or exacerbate child outcomes in response to exposure to inter-parental conflict/violence. The evidence for several of these factors will be considered in the next section.

Section 4: Important correlates of IPRQ that may act as confounders in analyses

This section briefly considers evidence about a range of factors that are associated with inter-parental conflict or violence and related child outcomes, outside of the main mediating factors considered in section 3. These correlated factors may be important to consider in any analysis of outcomes or practice/policy interventions because of their potential to distort estimates of effect sizes in analyses (Greenland et al. 2016; Greenland & Pearce 2015; Harold et al. 2016; Vandembroucke et al. 2007). If they are not considered, results may misidentify effect sizes and potential areas for intervention.

Several of the factors considered in this section may moderate (whether mitigate or exacerbate) the effects of inter-parental conflict or violence on a child's developmental outcomes. Other factors may confound the relationship by being associated both with inter-parental conflict and children's outcomes but may not be on the causal pathway. In contrast, a range of other factors may also be independently associated with the outcomes and need to be taken into account separately in analyses.

Correlates of inter-parental conflict or violence include a broad range of factors. They might be parental socio-demographic factors such as age, gender, ethnicity, and socio-economic position (for example, educational attainment, occupation, income, or material deprivation); parity of child; child factors such as developmental stage (age), gender, birth weight, and temperament; inter-parental relationship factors such as relationship length or commitment; parental physical and mental health (such as depression or long term health conditions); other parental factors such as job stressors, substance or alcohol abuse and the parents own social-emotional developmental experiences; social environment factors such as social support (whether parent or child's and whether instrumental or emotional) from friends, relatives, community organisations or religious groups; and positive developmental opportunities/exposures for the child inside and outside the home.

Several authors have commented on the fact that children's exposure to inter-parental conflict or violence does not necessarily occur in isolation and often occurs in tandem with many other risk factors, such as parental substance abuse, poverty, family dysfunction, other forms of child abuse and neglect, poor mental and social isolation (for example, Campo 2015; Holt et al. 2008). Holt et al. (2008) considered that "the presence of multiple stressors in a child's life may both elevate the risk of negative outcomes and possibly render indistinct the exact relationship between domestic violence and those negative outcomes" (p. 803).

This section discusses some of the evidence for several important correlates of IPRQ. However, the coverage is not exhaustive. Further work is required to understand the relationship among a number of correlates particularly across different developmental stages.

Parental socio-demographic factors are important considerations in the analysis

Age is associated with a range of factors influencing outcomes

Younger parental age has been associated with poorer outcomes for children (Sutcliffe et al. 2012; Tearne et al. 2016). Younger parental age is also associated with higher levels of intimate partner violence (for example, Fanslow & Gulliver 2015). Age may also be associated with potentially important mediating factors such as parenting skills and social-emotional maturity (Bradbury 2011; Stewart 2003). As parental age is associated with poorer outcomes for children and with inter-parental conflict or violence then age may operate as a confounder in analyses.

In general, older maternal age is associated with more positive social emotional outcomes for children with some exceptions (Tearne et al. 2016). Sutcliffe et al. (2012) showed that increasing maternal age was associated with children having fewer hospital admissions and unintentional injuries, a greater likelihood of having all their immunisations, better language and fewer social and emotional difficulties, in the early years of a child's life. For example, at three years the risk of unintentional injuries was 36.6 percent for children with mothers aged 20 and 28.6 percent for mothers aged 40 years while hospital admissions were 27.1 percent for children with mothers aged 20 years, and 21.6 percent for children with mothers aged 40 years. Immunisation rates at nine months increased with maternal age from 94.6 percent for mothers aged 20 years to 98.1 percent for mothers aged 40 years.

Although there is considerable evidence that childbearing at a young age is associated with poorer outcomes for both mother and child, Bradbury (2011) noted that international research suggests that much of this association is not causal and might be due to other factors associated with being young parents. An analysis of the Longitudinal Study of Australian Children (LSAC) after controlling for a range of factors found there was some evidence of an impact of mother's age at birth on social/emotional outcomes of young children, but this might have been due to parental expectations at different ages as these measures were reported by parents. Bradbury (2011) noted that in modern societies, having children when young may have a serious impact on the mother's human capital development. Educational attainment might be reduced and entry into rewarding labour market careers disrupted. In turn, this might mean fewer economic resources and skills available to be transferred to the child. In addition, younger mothers may have less personal social development and hence have poorer parenting skills than more mature mothers. Related to this, they are less likely to marry the child's father – which in turn reduces the economic resources of the family and reduces the likelihood of stable relationships between the child and father-figures. There is extensive evidence that women from socio-economically disadvantaged backgrounds are more likely to become young mothers (for example, Stewart 2003). If their children have poorer outcomes, this might be due to the impact of these background factors, rather than to young motherhood per se.

Jaffee et al. (2001) in their longitudinal study found that maternal characteristics and family circumstances together accounted for approximately 39 percent of the effect of teen childbearing on offspring outcomes while maternal characteristics accounted for

approximately 18 percent of the effect. Consistent with a social-influence hypothesis, family circumstances accounted for 21 percent of the teen childbearing effect after controlling for maternal characteristics. In contrast, Levine et al. (2001) found that the association of early motherhood with child academic outcomes was explained by pre-birth individual and family background factors, whereas problem behaviours among adolescents were still associated with early motherhood.

Gender

As noted in previous sections, inter-parental conflict or violence can spill over to parenting practices and strong positive parent-child relationships may mitigate the effects of inter-parental conflict. Research suggests that gender moderates the association of inter-parental conflict and parenting behaviour as several studies have found that inter-parental conflict has a greater association with the parenting behaviours of fathers than mothers (Davies et al. 2009; Harold et al. 2016; Kouros et al. 2010; Krishnakumar & Buehler 2000).

For example, Davies et al.'s (2009) test of the spill-over hypothesis analysed results by parent gender. They also tested whether adult depressive symptoms and attachment insecurity are mediators of one another in models of parenting difficulties. Their findings indicated that "interparental conflict predicted increases in parental psychological control and insensitivity to child distress for fathers but not mothers. Moreover, in supporting the moderating role of parent gender, interparental conflict was a significantly stronger predictor of increases in parental psychological control and insensitivity to child distress for fathers than for mothers. Mediation analyses further revealed that fathers' susceptibility to experiencing increases in adult relationship insecurity explained why interparental conflict was associated with their greater parenting problems over time." (p. 1764).

Garriga & Kiernan (2014) found that both parental relationship quality and maternal warmth have significant independent effects on children's externalising problems and that they work additively. From their analysis, having a mother who exhibits more warmth towards her child does not reduce the detrimental effects of parents' relationship problems on children's behaviour. However, where there is a high level of conflict in the mother-child relationship, the harmful effects of parents' relationship problems are stronger.

Ethnicity

Harold et al. (2016) noted that although some studies have found that there may be differences in the strength of the association between ethnicity, inter-parental conflict, parenting and child outcomes, other studies have not found such differences. Overall, these authors concluded that there are more similarities than differences across cultures in relation to the effects of inter-parental conflict on children's outcomes. Although the overall relationship is likely to be similar, potential moderators or mediators may vary across different population groups. Further work is required to consider the influence of contextually important factors.

Socio-economic position

Family poverty is strongly associated with children's outcomes including poor infant health, infant mortality, overall level of child wellbeing and development, cognitive development, social-emotional development, school achievement, parental ill health, parental conflict, teenage pregnancy, and crime (Barber, 2011; Boden, Fergusson, & Horwood, 2008; Boden et al., 2013; Cooper & Stewart, 2013; Dickerson & Popli, 2012; Duncan et al., 2011, 2010; Gershoff, Raver, Aber, & Lennon, 2007; Mayer, 2002; Poulton & Ramrakha, 2012; Statistics New Zealand, 2012; Weightman et al., 2012).

Poverty appears to have a direct and indirect link with child outcomes. Several factors related to IPRQ may mediate the indirect relationship. For example, Cooper & Stewart's (2013) systematic review found evidence showing that poorer children have worse cognitive, social-behavioural and health outcomes in part because they are poorer, and not just because poverty is correlated with other household and parental characteristics. They considered the evidence relating to cognitive development and school achievement is the clearest followed by social and behavioural development. Evidence supported two indirect pathways. The first was stress and anxiety caused by low income (the Family Stress Model) and the second was parents' ability to invest in goods and services that further child development (the Investment Model). Mediators linked to the Family Stress Model, including maternal mental health and parenting behaviour and to a lesser extent mediators linked to the Investment Model such as the physical home environment were linked with the poor outcomes.

As noted in section 3, Raver et al. (2015) found that exposure to greater levels of inter-parental conflict, more chaos in the household, and a higher number of years in poverty can be empirically distinguished as key contributors to a 58-month-old child's ability to recognise and modulate negative emotion.

There is evidence suggesting that wealth might moderate the relationship between IPRQ and externalising behaviours. Garriga & Kiernan (2014) in their analysis of Millennium Cohort data found the effect of parents' relationship problems was greater for poorer children than for children living in wealthier families. The authors consider that the findings suggest "that policies that promote parents' relationship quality are likely to be beneficial for children from different family contexts, but especially for those from poor families".

Measures of poverty and its duration would need to be included in any analysis to adequately take account of the multiple influences on outcomes.

Education level

Research has indicated that the education levels of women and men are associated with IPV. The educational level of parents is also associated with a range of children's outcomes.

Internationally, lower educational levels and disparity in educational level between partners (particularly where the female partner has higher educational level than the male) are associated with higher levels of IPV (García-Moreno et al. 2005). In general, higher education levels are associated with lower levels of reported IPV. However, García-Moreno et al. (2005) noted it is not clear whether the association between violence and education is confounded with age and socio-economic position. Cultural

norms also play an important role in cross-country differences in population levels of IPV as indicated in pooled multivariate analysis.

Education level of parents is also associated with a range of factors influencing children's outcomes (for example, Dickson et al. 2013; Harding et al. 2015; Magnuson et al. 2009). For example, Dickson et al. (2013) examined the UK Avon Longitudinal Study data and found that "increasing parental education has a positive causal effect on children's outcomes that is evident at age 4 years and continues to be visible up to and including the high stakes exams taken at age 16 years. Children of parents affected by the reform [higher age of compulsory education] gain results approximately 0.1 standard deviations higher than those whose parents were not impacted. Focusing on the lower educated parents where we would expect there to be more of an impact, the effect is larger: children of affected parents gaining results approximately 0.2 standard deviations higher." (pp. 1-2)

Evidence suggests that maternal education influences children's academic and educational outcomes through a range of parenting practices (for example, Harding et al. 2015) such as the interactions between parents and children that lead to learning. For example Sylva et al. (2004) operationalize the quality of the home learning environment as including reading together, teaching songs and nursery rhymes, painting and drawing playing with letters and numbers as well as other activities (Children's Commissioner 2013; Sylva et al. 2004). Sylva et al. (2004) noted in their study on early childhood education that "the quality of the home learning environment is more important for intellectual and social development than parental occupation, education or income. What parents do is more important than who parents are." (p. ii)

Therefore, as parental education has been found to be associated with both IPV and parenting practices, it would need to be included in any analysis to adequately take account of the multiple influences on outcomes.

Parental physical and mental health influence and are influenced by IPRQ

Much of the research relating to parental mental health relates to depression. The relationship between inter-parental conflict and parental depression is complex (Harold et al. 2016). It is likely that reciprocal influences between parental depression and inter-parental conflict operate over time. That is, evidence suggests that parental mental health influences inter-parental conflict and the parent-child relationship (Hanington et al. 2012; Laurent et al. 2009; Shelton & Harold 2008; Ehrensaft et al. 2006) while other research suggests that inter-parental conflict influences depression (Laurent et al. 2009; Howell et al. 2016). Depression has also been found to have an independent influence on child outcomes (Hanington et al. 2012). In addition, Harold et al. (2016) stated that there are potentially genetic and environmental factors to consider.

Laurent et al. (2009) noted that much evidence indicates that stress within couples' relationships is a potent cause and effect of depression and, further, that the overlap between relationship distress and personal distress is particularly great for women. However, the specific processes by which aspects of couples' interactions fuel depression over the course of the relationship, and which of these are gender-specific, remain inadequately understood.

Influences in the opposite direction were described by Shelton & Harold (2008), who cited research that showed individuals with high levels of depressive symptoms are more likely to consider other family members as hostile and also to withdraw from social interaction. They stated that when one or both parents have depressive symptoms, their exchanges are more likely to have heightened hostility, tension, and discord. Depression is also linked with attachment insecurity in partners. Insecurity in close relationships is also associated with partner conflict.

Shelton & Harold (2008) examined the relationship of parental depressive symptoms, adult relationship insecurity, inter-parental conflict, negative parenting, and children's psychological adjustment (internalising symptoms and externalising problems) in a three-wave longitudinal research design. Inter-parental and parent-child relationships were found to be mechanisms through which the effects of adult psychological health were linked to children's internalising symptoms and externalising problems. In addition, child gender differences were found for links between appraisals of parent-child rejection and adjustment problems such that mother-child rejection was associated with girls' externalising problems and father-child rejection was associated with boys' externalising problems.

Similarly, Hanington et al. (2012) found that marital conflict partially mediated the relationship between postnatal depression in both mothers and fathers and child outcomes, and acted as an independent risk for adverse outcomes. Parental depression (maternal and paternal) and marital conflict in the antenatal period were both associated with adverse effects which persisted even when postnatal stresses were taken into account.

Kouros et al. (2008) noted that the relationship between inter-parental conflict, parental depression and children's outcomes is complex and there are several pathways through which depression influences children's outcomes. In their study, paternal depression influenced children's outcomes by moderating the effect of marital conflict on children's emotional security, whereas maternal depression was directly related to children's emotional security. In particular, they found that inter-parental conflict was a stronger predictor of children's emotional insecurity for children whose fathers had more severe symptoms of depression compared with children whose fathers had lower levels of symptoms. That is inter-parental conflict was associated with greater child emotional insecurity two years later in the context of paternal depression.

In relation to physical health, Mensah & Kiernan (2011) observed that mothers often experience physical and psychological difficulties during the post-natal period and these may continue through the early years of raising children and have negative effects on engagement and caregiving. In a longitudinal analysis within the Millennium Cohort Study maternal general health and psychological wellbeing were assessed when their children were 9 months and 3 years old. Socio-demographic characteristics were assessed at 9 months, engagement and caregiving were assessed at 3 years and children's learning and development and behaviour at age 5 years. This study found associations between maternal general health and children's development (learning, and behaviour). The effects were reduced when maternal psychological distress was included in the analysis but remained as a predictor for children's subsequent development. Important potential mediating factors included engagement and caregiving, while underlying socio-demographic disadvantage was also important. General maternal health

as well as psychological wellbeing during the early years of raising children may be influential for children's development. This study suggests the need for a broader recognition of maternal health as well as psychological wellbeing as a foundation for family wellbeing, and the need to provide

support for mothers in maintaining engagement and caregiving for their children during periods of ill health.

Child related factors need further research

Child age

Children's responses to inter-parental conflict/violence may vary across age groups due to maturational processes. Harold et al. (2016) notes that the role of age is an emerging area of research, and state that, while children of all ages are negatively affected by inter-parental conflict, the specific mediators (mechanisms) may differ between younger and older children. Many studies restrict the age range of children or do not report analyses that include child age as a predictor or covariate (Rhoades 2008).

From a developmental perspective, the younger the age at which children are exposed to inter-parental conflict, the greater the potential for effects on their developmental and maturation processes. Bedi & Goddard (2007) found that the younger the age of the children during an onset of inter-parental violence in a family, the more negative later outcomes. As noted in previous sections, research has supported the notion of 'developmental cascades' (Davies, Martin, et al. 2016; Artz et al. 2014; Andersen & Teicher 2009; Kouros et al. 2010) where exposure to inter-parental conflict or violence during early or sensitive periods of a child's development influences development across a range of domains.

However, research is not consistent and this may be due to differences in the type and levels of exposure to inter-parental conflict or violence, the measured outcomes, and the age groups included in the research outcomes. For example, Rhoades (2008) meta-analysis considered the effect of exposure of children and young people aged 5 to 19 years to inter-parental conflict on cognitions, emotional responses, behavioural responses and physiological responses. This study found larger effect sizes for older children. Reynolds et al. (2014) noted that identifying the role of age is complex and younger children might not have the cognitive ability to appraise and report their responses to inter-parental conflict.

Child gender

Both boys and girls are affected by inter-parental conflict, but they may respond differently leading to different types of outcomes. Several authors report divergent findings on whether and how outcomes for boys and girls differ after exposure to family violence (Holt et al. 2008; Bedi & Goddard 2007).

Holt et al. (2008) noted that any differences between boys and girls might change across different developmental stages. However, authors also note that differential responses might also be affected by differing parental responses to male and female children (Holt et al. 2008; Harold et al. 2016). As noted above, Shelton & Harold's (2008) study of 11 to 13 year old children found gender differences for links between appraisals of parent-

child rejection and adjustment problems such that mother–child rejection was associated with girls’ externalising problems and father–child rejection was associated with boys’ externalising problems. These authors speculated that the same-sex effect may be due to children modelling the behaviours they experience in their relationship with the same sex parent or be due to children trying to re-engage the parent they identify with most closely. Krishnakumar & Buehler (2000) argued that more research is needed to understand how the gender of children is related to outcomes and this continues to be the case.

Social support networks are protective in some circumstances

Although the role of social support has been investigated in a range of contexts, as with several other correlates of inter-parental conflict and violence, evidence for the role of social support in this context is developing rather than definitive. Research in this field has considered social support that is available to a mother while other research considers support available to the child. There are also different aspects of social support, such as size of the network, the type of relationship with members of the network, and support type (instrumental or emotional).

Resilience frameworks and research discussed in section 2 suggest that social support across a range of contexts, whether for the mother or child, is associated with positive child outcomes (for example, National Scientific Council on the Developing Child 2015; Campo 2015; Miller et al. 2014) whereas other research indicates some social networks may negatively influence outcomes (Wright 2015).

Miller et al. (2014) noted that research has linked larger social network size in adults with a number of positive outcomes for individuals across the lifespan. It is also associated with increased frequency of other social contacts, number of close relationships, emotional support, satisfaction in relationships, educational attainment, and subjective wellbeing. Miller et al. (2014) stated that evidence suggests social support may act as a potential protective factor for psychological maladjustment. Larger in-home networks for children were associated with fewer child internalising and externalising problems. Mother’s education level was found to moderate the relationship between total in-home network size and child adjustment, such that that when mothers had low levels of education, children had fewer overall adjustment problems as network size increased. When mothers had high levels of education, child adjustment did not significantly vary as network size increased. The authors consider that their findings suggest that the presence of extended family members in the home can positively influence child functioning following exposure to male-to-female IPV.

Wright (2015) noted that social support has been recognised as a protective factor which is associated with reduced levels of IPV. Wright’s study investigated whether the separate effects of support from friends and family members on partner violence were influenced by neighbourhood disadvantage. Social support from family was associated with significantly reduced prevalence and frequency of IPV but support from friends was associated with higher frequencies of IPV. The influence of both forms of social support was reduced in neighbourhoods with higher levels of disadvantage.

Graham-Bermann et al. (2006) examined several ecological predictors of traumatic stress symptoms among children exposed to IPV. Results indicated that, for “Caucasian” children, the best predictors were the mother’s mental health and low self-esteem whereas for children from other ethnic backgrounds the best predictors were the amount of violence, mother’s low self-esteem and low income. In contrast, social support to the mother, whether from friends, relatives or religious affiliations, was protective for children from other ethnic backgrounds.

Alcohol or substance abuse and antisocial behaviour influence and are influenced by IPV

Alcohol and substance abuse have been associated with increased levels of IPV (for example, Caetano et al. 2001; Stanley 2011; Foran & O’Leary 2008; Fanslow & Gulliver 2015) and child maltreatment (World Health Organisation 2014). These behaviours can also be a consequence of IPV.

Stanley (2011) found considerable evidence for an association between alcohol and ‘domestic violence’ stating that alcohol provides a context for domestic violence and the risk of domestic violence increases when the perpetrator has been consuming alcohol. Foran & O’Leary’s (2008) meta-analysis examined the link between alcohol use/abuse and male-to-female partner violence as well as female-to-male partner violence. They found a small to moderate effect size for the association between alcohol use/abuse and male-to-female partner violence and a small effect size for the association between alcohol use/abuse and female-to-male partner violence. Moderators were examined for men only, a larger association was found for those with severe alcohol problems.

Harold et al. (2016) reported that parental alcohol and substance misuse are associated with increased risk of poor child adjustment. Parental alcohol misuse is associated with increased risk of child internalising and externalising problems through mediators of inter-parental conflict and parenting difficulties. Inter-parental conflict also influences adult alcohol and substance misuse. Paternal substance abuse has been associated with increased levels of children’s emotional and behavioural problems through children witnessing inter-parental conflict and from physical violence where a substance-abusing parent lived in the home.

The World Health Organization (2006) summarised the relationship between alcohol and intimate partner violence stating that there is evidence that:

- alcohol use directly affects cognitive and physical function, reducing self-control and leaving individuals less capable of negotiating a non-violent resolution to conflicts within relationships
- excessive alcohol consumption by one partner can exacerbate financial difficulties, childcare problems, infidelity or other family stressors which can create tension and conflict increasing the risk of violence
- individual and societal beliefs that alcohol causes aggression can encourage violent behaviour after drinking and the use of alcohol as an excuse for violent behaviour
- experiencing violence within a relationship can lead to alcohol consumption as a method of coping or self-medicating
- children who witness violence or threats of violence between parents are more likely to display harmful drinking patterns later in life.

Fals-Stewart et al. (2004) in their US study of 120 families, with an 8- to 12-year-old child, found that children with drug-abusing fathers experienced more internalising and externalising symptoms than children with alcoholic or non-substance-abusing fathers. Inter-parental conflict and parenting behaviour mediated the relationship between family type (alcohol or substance abuse or not) and children's adjustment.

Jaffee et al. (2003) analysed data from an epidemiological sample of 1,116 5-year-old twin pairs and their parents. They found that the less time fathers lived with their children, the more conduct problems their children had, but only if the fathers engaged in low levels of antisocial behaviour. In contrast, when fathers engaged in high levels of antisocial behaviour, the more time they lived with their children, the more conduct problems their children had. Behavioural genetic analyses showed that children who resided with antisocial fathers received an increased negative effect of genetic and environmental risk for conduct problems.

Section 4 summary

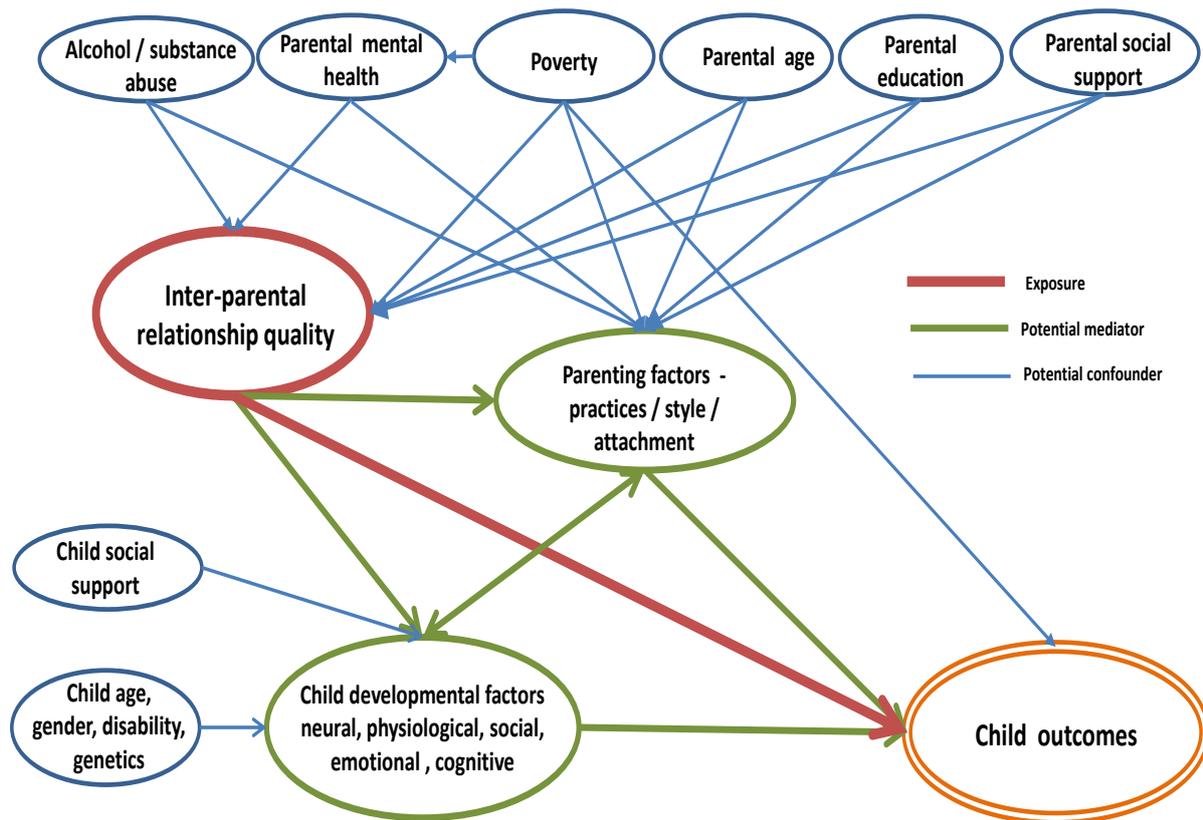
Factors associated with IPRQ and child outcomes, aside from the main mediating factors reviewed in sections 2 and 3, were identified to inform the analytic approach as these factors have the potential to modify estimates of effect sizes (Greenland et al. 2016; Greenland & Pearce 2015; Harold et al. 2016; Vandembroucke et al. 2007). If these factors are not considered, analysis results may distort effect sizes. They are also important to consider within policy and service development as they influence outcomes and therefore may modify the success of any intervention policies.

Evidence identifying these factors and how they are related to IPRQ, children's outcomes and related mediators, is developing rather than definitive. Figure 9 outlines the potential pathways through which alcohol and substance abuse, parental mental health, poverty, parental age, parental education, and social support influence child outcomes.

Evidence suggests that the relationship between IPRQ and parental mental health is likely to be bidirectional, that is, inter-parental conflict or violence might lead to poorer parental mental health or poorer mental health might lead to increased levels of inter-parental conflict. Similarly, inter-parental conflict or violence may lead to increased alcohol or substance use while the opposite may also occur, where alcohol or substance use leads to increased levels of inter-parental conflict or violence.

Developmental psychology notes that although parenting factors are critical for the developing infant, the parent-child relationship is bidirectional over time. Parenting factors and child-related factors will influence each other over time.

Figure 9: Important correlates influencing IPRQ, mediators or outcomes¹⁹



The evidence suggests that poverty is directly and indirectly associated with IPRQ and children’s outcomes. Poverty may influence child outcomes indirectly through IPRQ, parental mental health, and parenting practices or more directly through an absence of opportunities.

Parental age is associated with differential outcomes for children. However, the evidence suggests that this may be due to its association with other factors such as poverty, parenting skills, and social-emotional maturity that are also associated with age of parenting and children’s outcomes. Parental education is also associated with IPV, parenting practices and children’s outcomes.

Evidence indicates that social support operates as a protective factor for children exposed to IPV and for parents in some circumstances. However, overall further work is required to better understand how these factors influence children’s outcomes in the context of positive or negative IPRQ.

¹⁹ Note that the factors depicted as influencing or associated with the types and levels of IPRQ are not comprehensive. The diagram incorporates factors highlighted in the literature that may operate as confounders in analyses of the relationship of IPRQ with maternal and child outcomes. Key parental socio-demographic and behavioural factors are incorporated but not biological factors. As such, parental genetic factors are not considered.

Section 5: Conclusions and future directions

This narrative literature review aimed to support MSD analyses of longitudinal data (including GUiNZ data) and inform policy by identifying the effects of IPRQ on children and how IPRQ influences child outcomes.

Research investigating the influence of IPRQ early in a child's life was prioritised. Multiple factors have been shown to be associated with IPRQ. Research in this field is now focused on understanding causal relationships between exposure to different patterns of parental interactions (positive and negative IPRQ) and child outcomes.

IPRQ and children's outcomes are associated although the level of effect is uncertain

There are now strong theoretical and empirical foundations underpinning the relationship between IPRQ and child outcomes (Harold et al. 2016). Similarly, the negative impact of IPV on children's adjustment has been established (Cummings & Davies 2002; Cummings et al. 2009). However, the size of the effect varies considerably across studies, which may be due to the differing levels and types of IPRQ exposure, types of outcomes being considered and developmental stages of the children. In addition, many studies are conducted with relatively small population groups within specific socio-cultural contexts.

Processes that mediate or moderate the relationship are poorly understood

Although the literature indicates that the relationship between negative IPRQ and children's outcomes has strong empirical support, there are gaps in understanding how positive and negative IPRQ influences outcomes.

Several authors noted that the processes that mediate the relations between IPRQ and children's outcomes and the variables that function as vulnerability or protective factors are still poorly understood (Cummings & Davies 2002; Cummings et al. 2009).

Further research using longitudinal data is needed

There is relatively little longitudinal research with large samples across representative population groups that have examined these associations and further work is needed to better understand the processes by which positive and negative IPRQ affects children's development across multiple domains of functioning.

The relative scarcity of longitudinal studies means empirical support elucidating children's developmental trajectories in the context of positive or negative IPRQ is still developing. Given the complexity of the relationships among factors, sophisticated research and analytic approaches are now being applied to improve understanding of the relationships among different factors over time.

Multiple pathways interconnect over time

Evidence supports the view that positive and negative IPRQ influences children's outcomes directly and indirectly through multiple pathways. Several researchers

consider that evidence indicates these factors operate as developmental cascades, whereby the exposure to childhood adversity during sensitive developmental periods interacts with maturational events, which in turn produces a cascade of linked consequences for children. Other frameworks consider 'chains of risk' whereby a sequence of linked exposures raise the risk of an outcome because one negative experience or exposure tends to lead to another and then another.

Pathways of influence

The main mediating factors operating as intermediaries between IPRQ and children's outcomes that are supported by the available evidence include:

- parenting style and quality (includes both mother-child and father-child relationship)
- parent-child attachment relationships
- children's emotional security in inter-parental and family context
- children's cognitions, appraisals and attributions
- children's stress and trauma responses and subsequent neurophysiological developmental trajectories.

IPRQ also influences children's outcomes directly through social learning. Research has found that even after identifying the effects through mediating pathways, direct effects remain.

Other factors influencing outcomes

Resilience research has considered several socio-ecological factors which appear to be protective for children exposed to negative IPRQ. Evidence suggests that some factors may lead to greater adversity for children while others may lead to greater opportunities for children's positive development through their influence on IPRQ. These are:

- provision of positive learning and developmental environments for the child
- social support for the children
- parental social support (in some circumstances)
- parental risk behaviours including alcohol and substance abuse
- parental physical and mental health
- parental substance abuse.

Cascades or chains of risk

The potential for cascade effects from early exposure to inter-parental conflict or violence has considerable consequences for developmental trajectories across a range of domains.

Children exposed to inter-parental violence have a greater likelihood of being abused themselves and not just witnessing abuse. They might also be exposed to a range of other stressors which elevates their risk of negative outcomes. Where a range of risks co-occur, the ability to determine the relationship between IPRQ and children's outcomes is more challenging.

Several studies have considered the effects of reciprocal relationships among factors over time. However, this aspect of the field is not well developed from an empirical perspective.

Social factors are very influential for children's outcomes

New findings suggest that associations between IPRQ and children's outcomes are strongly related to social factors. Previously it had been suggested that the common underlying genetic factors that simultaneously affect both parent and child confounded the association of IPRQ and children's outcomes. However, recent research took this confounding into account by comparing the relationship of IPRQ with children's outcomes in genetically-related and genetically-unrelated parents and children. Similar pathways of influence and levels of association were found for genetically-related and genetically-unrelated parents and children (Harold et al. 2012; Harold et al. 2013).²⁰ Harold et al (2016) note that these new findings provide greater confidence in the role of hostile inter-parental relations and negative parenting practices as substantive influences on child outcomes.

Opportunities for development of research

Although research in this field is increasing, there are relatively few longitudinal studies with large sample sizes to consider causal relationships among factors. Such longitudinal studies provide the opportunity to investigate pathways of influence over time.

Refining definitions of exposure and outcomes

Uncertainty remains about how the timing of, and length and type of exposure to, positive and negative IPRQ differentially impacts children. Definitions of exposure to inter-parental conflict and violence are not fully established or consistent across the literature. These areas need further refinement, particularly given findings showing emotional development outcomes differ after exposure to, for example, physical inter-parental aggression versus verbal inter-parental aggression.

Clearly defining different types of inter-parental interactions needs to be differentiated from the different levels and types of children's exposure to those interactions (for example, seen or heard the interactions, became involved in the interactions, saw the results of the interactions, or informed of the interactions by a third party).

A wide range of outcomes have been associated with negative IPRQ. As noted above, research indicates that exposure to different levels and types of inter-parental conflict or violence leads to different outcomes for children. Future research needs to more closely consider the outcomes in relation to different levels and types of exposure.

Expanding the focus of exposure variables to include positive as well as negative IPRQ

Although this review considered whether and how positive and negative interactions between parents influences children's outcomes, most of the available research focused on inter-parental conflict or inter-parental violence.

It might be useful to further expand research which identifies and considers positive inter-parental interactions alongside negative inter-parental interactions in analyses, rather than only an absence of negative inter-parental interactions.

²⁰ Note that the study did not attempt to quantify the influence of genetic versus social factors but took the confounding effect of genetic factors into account by comparing the relationship of IPRQ with children's outcomes in genetically-related and genetically-unrelated parents and children.

In addition, resilience research focuses on identifying factors associated with positive development in the face of adversity. Further research on positive outcomes within adverse circumstances might shed further light on positive pathways and protective factors.

Father-child relationship research is sparse and needs further investigation

In the past, research has concentrated on understanding how the mother-child relationship influences children's outcomes. However, increasingly research shows the importance of gaining a better understanding of the influence of the father-child relationship in the context of IPRQ. Harold et al (2013) noted that, in designing interventions, it is important to consider the differences between the father-child and mother-child relationships. The father's relationship with the child is as important as the mothers' between early to middle childhood.

Factors may be protective in some circumstances but not in other circumstances

Research suggests that some factors operate as moderators of child outcomes within some environments, but not in others. For example, research within a resilience framework discussed in section 2, suggests that social support across a range of contexts, whether for the mother or child, is associated with positive child outcomes (National Scientific Council on the Developing Child 2015; Campo 2015; Miller et al. 2014) whereas other research indicates some social networks may negatively influence outcomes (Wright 2015).

Implications for policy and practice development

This review has considered the effects of IPRQ on children's outcomes. Evidence clearly shows that IPRQ is associated with children's outcomes both directly and through several intermediary pathways. Primary prevention of negative IPRQ (whether inter-parental conflict or violence) is therefore a clear target for policy interventions.

The factors associated with the incidence and prevalence of IPRQ which might be helpful in developing this type of policy were outside the scope of this review. However, they are the subject of research (for example, Fanslow & Gulliver 2015; Gulliver & Fanslow 2016) and current policy review/interventions (for example, Ministerial Group on Family Violence and Sexual Violence²¹).

There is increasing evidence that supports a conceptual framework of multiple interacting factors influencing IPRQ and related child outcomes. Those factors that are potentially modifiable will be important to consider in policy development including:

- parent-child relationships and type of attachment
- parenting behaviours and style
- children's exposure to a range of positive social environments to support positive development

²¹ The Ministerial Group on Family Violence and Sexual Violence initiated in 2014 aims to co-ordinate governmental response and ensure alignment of legislation, policy and services that address family violence and sexual violence. Refer to www.msd.govt.nz/about-msd-and-our-work/work-programmes/initiatives/action-family-violence/ministerial-team/ for further information.

- addressing children's trauma responses to negative IPRQ when they have been exposed including very young children
- social networks and support available to the parents and child.

As research suggests that there are multiple indirect and direct effects of IPRQ on children's outcomes, interventions focusing on one or two of these pathways are unlikely to be fully successful, as negative IPRQ may continue to affect outcomes directly or through alternative pathways.

For example, just targeting the parent-child relationship is unlikely to lead to sustained positive outcomes for children. From a prevention point of view, findings suggest the need for integrative interventions that address the inter-parental relationship as well as parenting behaviours and parents relationships with their children (Harold et al. 2016). Interventions that help parents deal well with conflict and that support good parenting practices may prevent negative outcomes for children.

Evidence shows that children of all ages may be negatively affected by inter-parental conflict or violence. Where children are exposed to inter-parental conflict or violence, interventions that assist children in coping with this exposure may help prevent a cascade of negative developmental consequences for the children. Interventions might focus on ensuring children's trauma responses are addressed, increasing their exposure to other positive social environments, and the development of a range of protective social networks and support for both parents and children.

A broader set of potentially modifiable correlates which may influence IPRQ and child outcomes such as poverty, mental health conditions, alcohol abuse and substance abuse would also need to be addressed in any interventions as the effects of these factors may undermine the effectiveness of interventions.

The focus of interventions in New Zealand

The question could be asked whether New Zealand interventions address these factors. However, it is beyond the scope of this literature review to evaluate interventions in New Zealand, based on the evidence cited in this report. Internationally, authors have considered the implications of the evidence for interventions and two recent reports identified gaps in programmes currently available (refer to the next two sub-sections for a brief summary of their views).

New Zealand has a number of existing programmes for supporting children in hardship and reducing child maltreatment. Services purchased through MSD in 2016 included: statutory interventions to promote the wellbeing of children, young persons, and their families and family groups; intensive support services; and early intervention services. These services focus on vulnerable populations.²²

As noted above, the Ministerial Group on Family Violence and Sexual Violence initiated in 2014 aims to co-ordinate governmental response and ensure alignment of legislation, policy and services that address family violence and sexual violence. MSD's focus includes primary prevention of adult-to-adult family violence such as prevention campaigns and community based initiatives. It also includes a focus on the identification

²² The responsibilities for child protection and youth offending transferred to the Oranga Tamariki: Ministry for Vulnerable Children in April 2017.

and initial response to family violence through, for example, population based initiatives for at risk families and parenting programmes. MSD programme funding for addressing adult-to-adult violent and abusive behaviour in families covers crisis response and recovery services, intensive support services, early intervention services and prevention services.

In 2016, MSD's Community Investment Strategy focused on improving results for vulnerable children and youth, and reducing family violence and sexual violence.²³ In particular it aimed to:

- support vulnerable children, children in hardship, and reduce child maltreatment
- support vulnerable young people, including youth offenders, and reduce youth crime
- support adult victims/survivors
- address perpetrators' behaviour
- reduce violent crime (family violence and sexual violence).²⁴

Interventions that enhance inter-parental relationships also improve child outcomes

Harold et al. (2016) conducted a rapid review, using peer-reviewed evidence, of interventions aiming to enhance inter-parental relationships (or components that targeted couple relationships) and of the impacts for their children (up to 18 years of age). The primary outcomes of interest were the couple/inter-parental relationship and children's outcomes (where they were measured and reported). Most of the reviewed interventions were group programmes with preventative as well as therapeutic aims. Positive outcomes for inter-parental relationships and children were found in a number of programmes.

These authors noted that there are likely to be gaps in current programmes as few directly consider the influence of the couple relationship on children and few directly address specific mechanisms through which inter-parental conflict places children at elevated risk of negative outcomes. They consider therefore a more systematic and direct focus on the couple relationship and couple relationship skills is required in interventions early in children's lives, at transition points, and in high-risk contexts is warranted.

They summarised their findings as follows:

Within the context of the strengths and limitations of this review, the following key insights have been reached:

- *Programmes that target conflict management and communication for couples suggest improved outcomes for children.*
- *Programmes that target couple relationship communication and conflict management skills at key transition points (e.g. becoming a parent, children's school transition) evidence improved long-term outcomes for children.*

²³ The responsibilities for child protection and youth offending transferred to the Oranga Tamariki: Ministry for Vulnerable Children in April 2017.

²⁴ Ministry of Social Development (2016) *Investing in Services for Outcomes: Community Investment Strategy Update 2016*. Ministry of Social Development.

- Programmes that target couple relationship communication and conflict skills management suggest concomitant improvements in parenting and positive outcomes for children (even when parenting skills are not directly targeted).
- Programmes that target the inter-parental relationship in high-risk contexts (e.g. divorce, domestic violence) suggest improved outcomes for children (with implications for reducing the intergenerational transmission of negative family conflict processes and perpetration of future relationship violence).
- Supporting the couple relationship early in children's lives may have long-term impacts on children's mental health, future life chances, and patterns of positive relationship behaviour across generations.

An additional observation is that, whilst some of the interventions reviewed recognise the importance of the inter-parental relationship as an influence on child outcomes, few presently incorporate consideration of the couple relationship as a direct source of influence on children, with fewer still targeting specific mechanisms through which inter-parental conflict places children at elevated risk for negative outcomes. This is reflected in the fact that only some of the evaluations reviewed measured child outcomes. However, existing intervention evidence reviewed does find that a number of inter-parental relationship programmes improve outcomes for children. As a number of these evaluations involved random assignment to treatment and control conditions, this provides strong support of the causal relevance of the inter-parental relationship on child outcomes. (Harold et al. 2016; p.65-66)

Taking a broader perspective and addressing the multiple contributors to 'toxic stress'²⁵

Recent advances in scientific understanding of the effects of toxic stress on children's development have prompted authors to propose new approaches to early childhood policy and practice (Shonkoff & Fisher 2013; Shonkoff 2016).

The Center on the Developing Child at Harvard University (2016) highlighted the importance of building the capabilities of all the important adults whom vulnerable children rely on. They stated that one set of initial implications from developmental science findings for improving outcomes of children and their caregivers is to:

- **reduce external sources of stress** (such as for example poverty, racism, living in dangerous neighbourhoods, domestic violence, substance abuse, mental health problems and involvement with child welfare systems) and create safer more predictable better regulated and less stressful environments that better support healthy development, self-regulation and critical skill development
- **develop responsive relationships** that stimulate children's positive brain development and protect against negative experiences producing toxic stress effects
- **strengthen core life skills** that are seen as the basic skills adults need to parent effectively and earn a living and children need to develop. These self-regulation skills

²⁵ Shonkoff (2016) stated that, in 2005, "the National Scientific Council on the Developing Child, working in collaboration with the Frame Works Institute, introduced the term 'toxic stress' to describe excessive or prolonged activation of stress response systems in the absence of buffering protection from adult caregivers". Shonkoff noted that "This differentiates toxic from positive and tolerable stress responses, which do not produce lasting biological consequences."

are built upon 'executive functions' primarily comprising inhibitory control, working memory, and mental flexibility.

They propose building a universal understanding of responsive caregiving and ask the question how can we help parents and other caregivers develop their capacity to provide it. They consider that it usefully directs attention toward social norms and practices and learning and improvement.

Shonkoff (2016) and others stated that the evidence implies four shifts in thinking about policy and practice, including that:

(1) early experiences affect lifelong health, not just learning; (2) healthy brain development requires protection from toxic stress, not just enrichment; (3) achieving breakthrough outcomes for young children facing adversity requires supporting the adults who care for them to transform their own lives; and (4) more effective interventions are needed in the prenatal period and first 3 years after birth for the most disadvantaged children and families. (Shonkoff, 2016: p.2252)

Similarly, Shonkoff & Fisher, (2013) proposed an integrated approach to the highly inter-related needs of young children and their caregivers. They suggest among other recommendations that substantially better outcomes for vulnerable young children could be achieved by a greater focus on strengthening the resources and capabilities of caregivers instead of primarily providing child-focused enrichment, parenting education and informal support. They consider programs and policies with a two-generation focus will better recognise the highly inter-related needs of both young children and their caregivers and that this should shift policy and practice "beyond the simple co-ordination of separate programs to focus on the transactional impacts of risk and protective factors on the developmental trajectories of both children and their parents over time" (Shonkoff & Fisher 2013; p.1644).

Conclusions

Overall, the evidence indicates strong theoretical and empirical foundations underpinning the relationship between IPRQ and child outcomes and the negative impact of inter-parental conflict and violence on children's adjustment. The size of the effect remains uncertain. It is likely to vary across differing levels and types of IPRQ exposure, types of outcomes being considered and developmental stages of the children. There are also gaps in understanding about how positive and negative IPRQ influences outcomes. Longitudinal research has the potential to address some of these information gaps.

Current literature indicates that effectively addressing the negative consequences of inter-parental conflict and violence on children's development requires policy and practice covering the spectrum of primary, secondary and tertiary prevention using integrated interventions which focus on a range of actors within a child's network of developmental relationships and a range of stressors within their environments.

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Appendix 1: Review method

The literature review was conducted in two stages. The protocol for the first stage is outlined below. The second stage involved further searches conducted in June/July 2016 using EBSCO and Google to identify recent journal articles and review documents on “inter-parental relationship quality” inter-parental conflict” or “intimate partner violence” and “child outcomes”.

Child outcomes included physical or psychological health, social, emotional and behavioural adjustment, cognitive or educational outcomes. However, as noted above early developmental stages were prioritised. Google searches were also conducted relating to specific authors specialising in the research topic. Priority was given to peer reviewed journal articles of:

1. meta-analyses,
2. systematic reviews
3. studies with a clear theoretical basis addressing possible mechanisms of influence
4. longitudinal studies or studies testing causality.

Working papers, book chapters, and summary reviews were also included where the research directly addressed the question of inter-parental relationship quality and its effects on children.

Protocol for first stage

Table 2: First stage literature search protocol

Domain	Specification
Context	<ul style="list-style-type: none"> - Parents of young children - Longitudinal studies - Studies from Australia, United Kingdom, United States, Canada, Europe, New Zealand - Studies with policy implications and applications - Purposive search based on existing literature cited in our application form - Socio-economic status, ethnic setting, age of parents (mother) - Spill-over and compensatory hypotheses - Parenting behaviours, relationship conflict, child outcomes
Inclusion criteria	<ul style="list-style-type: none"> - Research since 1995; all relevant GUINZ references - <u>Ebsco Discovery search engine</u>: Academic OneFile, Academic Search Complete, Academic Search Index, Australia/New Zealand Reference Centre, Business Book Summaries, Business Source Complete, Business Source Premier, Center for Research Libraries, Digital Access to Scholarship at Harvard (DASH), Directory of Open Access Journals, EconLit, ERIC, General OneFile, Library - Information Science & Technology Abstracts, MasterFILE Premier, Publications New Zealand Metadata, Publisher Provided Full Text Searching File, Regional Business News, Research Starters, ScienceDirect, SocINDEX with Full Text, Supplemental Index, Swedish National Bibliography - <u>Other search engines</u>: Google Scholar, Austrom, Social Care Online,

Domain	Specification
	<p>PubMed, Cochrane Library, Campbell Collaboration, PsychINFO, PubPsych</p> <ul style="list-style-type: none"> - meta-analysis/systematic reviews; peer reviewed journal articles; book chapters; dissertations; GUINZ references - title, abstract, and full text search were available via search engines
Exclusion criteria	<ul style="list-style-type: none"> - <u>Known search engines excluded:</u> Business Book Summaries, OLISnext, Te Aka Maori-English, CLC: Corporate Leadership Council, Index New Zealand, PILOTS: Published International Literature on Traumatic Stress, TableBase, Hansard, Contemporary Women's Issues, New Zealand Libraries Catalogue, Internet search engines except Google Scholar

Domain	Specification
Search strings	<p><u>Topic 1: Inter-parental relationship quality</u> [[\`marital\` OR \`interparental\` OR \`interparental\` OR \`interpartner\` OR \`interparnter\` OR \`interadult\` OR \`inter-adult\`] AND [\`relation*\`]] AND [\`quality\`, \`satisfaction\`, \`discord\`, \`conflict*\`, \`tension\`, \`coalition\`, \`cohesion\`, \`domestic violence\`] (all terms)</p> <p><u>Topic 2: Early nurturant parenting behaviours</u> [[\`parenting\` OR \`parental\` OR \`child-rearing\` OR \`maternal\` OR \`paternal\` OR \`parent-child relation*\` OR \`parent-child interaction\`] AND [\`quality\`, \`behavio*\`, \`nurtur*\`, \`attachment\`, \`style\`]] (all terms) AND [\`early child*\`, \`infant\`, \`infancy\`] (all terms)</p>