Contact with mothers for children in out-of-home-care: Group-based trajectory modelling from the Pathways of Care Longitudinal Study (POCLS)

Aino Suomi [a,b,*], Nina Lucas [b], Dave Pasalich [c], Morag McArthur [b]

[a] Centre for Social Research and Methods, Australian National University, Australia
[b] Institute of Child Protection Studies, Australian Catholic University, Australia
[c] Research School of Psychology, Australian National University, Australia

A B S T R A C T

Background: Good quality contact with birth parents is considered important to successful out-of-home care (OOHC) placements.
Objective: There is, however, an absence of empirical evidence about contact needs of children in the OOHC system and how these needs change over time.
Participants and setting: The current analysis analyzed four waves of data from the Pathways of Care Longitudinal Study in Australia relating to 1507 children on yearly frequency of contact with mothers, relationship quality with mothers, and the extent that contact met the needs of the child.
Methods: Group-based trajectory modelling was used to examine in what ways frequency of contact, child-mother relationships and child's needs for maintaining family contact were associated over time.
Results: The analysis showed a positive association between these three outcomes that also held true as the children aged, with five distinct patterns: (1) low frequency and poor relationship (*low poor*) (14.5 % of the sample); (2) moderate frequency and poor relationship (*moderate poor*) (30.3 %); (3) increasing frequency and improving relationship (*improving*) (19.8 %); (4) declining frequency and declining relationship (*declining*) (19.5 %); and (5) high frequency, good relationship (*high good*) (15.9 %). Care type, child demographics, child socioemotional wellbeing and unsupervised contact arrangements were significantly associated with trajectory group membership.
Conclusions: These results can be used to inform policy and practice around contact and to better match the heterogenous contact needs for children in OOHC.

The attachment theory posits that experiences with primary caregivers provide the basis to develop internal models about the self, the world, and relationships that are foundational for healthy child outcomes (Bowlby, 1978). When children are removed from their family of origin by the child protection system, contact visits[1] with family of origin are implemented to maintain a child's sense of self and the continuity of these early attachment relationships, where appropriate (Sen & Broadhurst, 2011; Suomi et al., 2020; Taplin &

Mattick, 2014). Children can have face-to-face contact visits and/or indirect contact (audio and video calls, email, SMS) with family – in particular, parents, siblings and grandparents – that vary in frequency, duration and location (Suomi et al., 2020; Taplin et al., 2021; Taplin & Mattick, 2014). While literature on what constitutes 'good quality' contact is scarce, some studies suggest that positive experiences of contact are related to placement stability, child wellbeing and more positive outcomes for young people when they exit the child protection system (Fuentes et al., 2019; Moyers et al., 2006; Sen & Broadhurst, 2011). Negative, poorly planned, or inadequately supported contact visits may even be harmful, and prevent children developing a sense of psychological permanence, particularly where there is a history of abuse (Morrison et al., 2011; Sen & Broadhurst, 2011; Sinclair, 2005). In Australia, where the Pathways of Care study is being conducted, legislation and policy assume that contact will take place where it is safe to do so. Contact arrangements are put into place when the child first enters OOHC and they can be reviewed by case managers as children develop, although this is rarely done (Taplin et al., 2021). Other factors to consider in planning contact arrangements can include the child or young person's views, their experience in care, changing developmental needs, safety and case plan goal.[2] Courts can also decide that contact be supervised when there are child safety concerns (Taplin et al., 2021; Taplin & Mattick, 2014; Wilson et al., 2004). Carers may be required to implement contact schedules formulated by the child protection system, which can be onerous to everyone involved, and many want help managing contact (Austerberry et al., 2013; Humphreys & Kiraly, 2011; Saini et al., 2012). Caseworkers may also facilitate contact schedules and both carers and caseworkers can find organizing and scheduling visits to be disruptive and stressful for both children and adults involved (Nesmith, 2013). There is, however, very little research evidence about when contact succeeds in creating safe and positive relationships, and how to take the varied circumstances of children in OOHC into consideration when planning contact (Bullen et al., 2017; Sen & Broadhurst, 2011; Suomi et al., 2020; Triseliotis, 2010). Furthermore, there is a lack of clear guidance about ways to create optimum contact conditions, and recent research has called for improvement of many aspects (Fuentes et al., 2019).

1. Contact frequency

Arguably, one of the most contentious issues in contact planning is the frequency of visits: infrequent contact visits are linked to child difficulties, but contact that is too frequent can also be harmful and burden the child and carer (Fossum et al., 2018; Humphreys & Kiraly, 2011). Some factors considered in making plans about contact frequency include the quality of the parent–child relationship, parental responsiveness to children's needs, children's age and developmental stage, as well as emotional and physical safety (Atwool, 2013; Prasad, 2011). Empirical studies show that, in general, more frequent contact is positively related to child wellbeing, the quality of parent-child relationships and reunifications rates (Cashmore & Taylor, 2017, 2021; McWey et al., 2010; McWey & Cui, 2021). While few studies have examined whether these patterns persist over time in the OOHC context, a recent study (Grotevant et al., 2019) on birth family contact in the context of adoption showed multiple patterns of contact, where some children saw their birth parents more frequently after adoption and some stopped contact altogether. However, this study was not on adoptions from foster care so the study population was significantly different to the one considered in the current study. Children with more contact were more satisfied in their relationships with birth parents and extended family over time, and those who did not have contact grew progressively more unsatisfied. The Care Pathways and Outcomes Study from Northern Ireland (McSherry et al., 2016) used qualitative data to show that while contact frequency generally decreased over time, for those in stable placement the frequency tended to increase. These few studies suggest a considerable heterogeneity in patterns of contact visits: more longitudinal evidence from larger-scale datasets is needed to inform how contact policy and practice could better consider the variable needs of children in the OOHC system and how the needs evolve over time.

2. Parents and contact

Another common challenge with birth family contact affecting contact frequency involves parents cancelling or not attending scheduled visits. While evidence is scarce around reasons for cancellations, it is likely that parents have limited resources (time, money for transport) to attend contact that may have not been considered when developing contact schedules. In addition, research shows that they are more likely to cancel contact visits when contact is supervised and when the parents are on psychiatric medication (Taplin et al., 2021). Parents often have little input into contact schedules, location, time or duration, which can be highly stressful for parents with limited mental and material resources (Nesmith, 2015; Suomi et al., 2020; Taplin et al., 2021; Triseliotis, 2010). Moreover, parents may find it difficult to engage with their children during contact visits, particularly under supervised conditions with restrictions on behaviours and conversation topics (Bullen et al., 2017; Höjer, 2009). Parental distress around contact can also be attributed to the profound trauma from losing care of a child that is exacerbated each time they have contact with the child (Broadhurst & Mason, 2013; Ross et al., 2017). Given that current child protection policy and practice do not adequately address these difficulties, inconsistency in parents' attendance to contact visits is relatively common, with flow-on negative impacts on children's wellbeing and the child-parent relationship (Nesmith, 2015; Suomi et al., 2020).

---

[2] https://www.facs.nsw.gov.au/families/permanency-support-program/paths/chapters/family-preservation/contact-arrangements

3. Children's experiences of contact

Children in OOHC generally want to see their parents, and they often spend a lot of time worrying about their families of origin (Moyers et al., 2006; Sen & Broadhurst, 2011). This can manifest as externalising behaviours, both before and after contact visits (Haight et al., 2002; Morrison et al., 2011; Sen & Broadhurst, 2011). These challenges can be exacerbated when contact schedules make it difficult for the parents to attend reflecting the considerable psychological harm to children associated with visit cancellations (Haight et al., 2002). While most carers value contact with birth parents, some are keen to reduce or stop contact because of these adverse impacts on the child and complex logistical issues (Cashmore & Taylor, 2017, 2021; Järvinen & Luckow, 2020). McSherry et al. (2016) reported that children who were removed due to domestic violence and parental drug and alcohol use reported feeling emotionally confused about face-to-face contact, suggesting that these at-risk children may need additional and targeted supports around family contact.

4. Relative/kinship and foster care placements and contact

Another factor known to be associated with contact experiences is the type of placement. Children placed with family members in relative/kinship care tend to have more frequent and unsupervised contact compared with children in foster care (Vanschoonlandt et al., 2012). Relative/kinship care is expected to create more optimal circumstances for birth parent contact, as it contributes to greater acceptance of the placement by parents (Farmer & Moyers, 2008; Montserrat, 2006). Contact visits in relative/kinship care are generally considered more positive, although some studies show that kinship carers can be more burdened than foster carers due to the lack of formal boundaries, particularly if the relationship with the birth parents is negative and involves the carer's own child (Kiraly & Humphreys, 2016). A literature review on relative/kinship care refers to family tensions and conflict, particularly in the carer-parent relationship, which contribute to difficulties in contact arrangements (Kiraly & Humphreys, 2013). Kinship carers also generally receive less formal support from the child protection system leaving them to navigate the difficult family relationships on their own (Kiraly & Humphreys, 2016).

5. Aboriginal and Torres Strait Islander considerations

In Australia where the current study was conducted, maintaining connections with family, community, culture and Country is particularly important for Aboriginal[3] children who are highly overrepresented in the OOHC system (Australian Institute of Health and Welfare, 2020). The Aboriginal and Torres Strait Islander Child Placement Principles (ATSICPPs) stem from a widely recognised and deep-rooted cultural disconnection and intergenerational trauma associated with the treatment of Aboriginal families by the Australian child protection system (Kiraly et al., 2015).[4] Specific to contact, the ATSICPPs require that when an Aboriginal child is removed from their family of origin, consideration must first be given to placement within their family network, and that any non-Aboriginal placements can ensure contact with family, community, and culture (Human Rights and Equal Opportunity Commission, 1997). When kinship placement is not possible, family contact becomes particularly important for Aboriginal children and young people to stay connected with community, culture and Country (Collings et al., 2019; Davis, 2019). These principles are also echoed in a recent Australian report that make multiple recommendations for Aboriginal family contact to have a special kin and cultural element in planning contact arrangements (Davis, 2019).

6. Current analysis of the Pathways of Care Longitudinal Study data

Taken together, the previous literature suggests that there is considerable heterogeneity in children's contact needs that are also likely to evolve over time. There is very little empirical evidence of these varied needs, meaning that current policy and practice may not serve the needs of families in OOHC in an optimal way. To better support contact in these families, more empirical data is needed on how visit arrangements, frequency of contact, child-parent relationship and the child's needs are related and change across development. Such analysis can point to particular groups where needs may not be adequately met by current policy and practice. To address existing knowledge gaps and improve understanding of contact for children in OOHC, the current analysis involved a longitudinal examination of contact with birth mothers in the NSW Pathways of Care Longitudinal Study (POCLS) data. We focused on mothers because, in the current dataset, carers in Wave 1 reported that most children had contact with their mothers whereas contact with other family members (fathers, siblings, grandparents) were reported for just over half of the children (Australian Institute of Family Studies et al., 2015). Mothers in the POCLS are the primary parent the child has contact with, although contact with fathers and other relatives and kin important to the child should continue to be encouraged at a systems level. We explore longitudinal trajectories of contact on three outcomes identified in the literature associated with children's experience of contact with their mothers with the

---

[3] 'Aboriginal' is used throughout this paper and is inclusive of Aboriginal and Torres Strait Islander peoples.

[4] The principle is broader than the hierarchy of placement and it recognises the importance of connections to family, community, culture and Country in child and family welfare legislation, policy, and practice, and asserts that self-determining communities are central to supporting and maintaining those connections. The ATSICPP has five core elements – prevention, partnership, placement, participation, and connection – that work across the continuum of the child protection system to protect and realise the rights of Aboriginal and Torres Strait Islander children, families, and communities. https://www.snaicc.org.au/understanding-applying-aboriginal-torres-strait-islander-child-placement-principle/

main aims to:

(1) Explore longitudinal patterns of yearly frequency of contact with mothers, quality of relationship between the mother and child, and the extent to which contact arrangements meet the needs of the child.
(2) Identify sociodemographic, child protection, placement and wellbeing factors predicting any specific longitudinal patterns.
(3) Examine contact-related problems associated with patterns of contact identified in the data.

7. Method

7.1. The study sample

This study is based on the December 2020 version of the POCLS Wave 1–4 unweighted data. The population cohort for the POCLS study is a census of all children and young people who entered OOHC for the first time in NSW over the 18-month period between May 2010 and October 2011 ($n = 4126$). A subset of those children and young people who went on to receive final Children's Court care and protection orders[5] by 30 April 2013 ($n = 2828$) were eligible to participate in the interview component of the study. Interviews were conducted with children, the current carer, parents of restored children, caseworkers, and childcare workers or teachers, and these data were linked with administrative datasets regarding child protection, education, health and juvenile justice. Interviews with carers and children were conducted 18–24 months apart, yielding four waves of data by 2018.[6] Of the 2828 eligible children for the interview cohort, 1507 children and/or their carers were interviewed in at least one of the four waves. Further details of the sample methodology are available elsewhere (Australian Institute of Family Studies et al., 2015).

7.2. The current analysis

The current analysis uses child and carer interview data at Waves 1 to 4 ($n = 1507$) where these data were available at any wave. The sample includes children who were adopted or placed on guardianship orders between Waves 1 and 4 as they generally continue to have contact under these care orders. Children who were restored to their parents in Waves 2, 3, and 4 or who aged out of care were treated as missing data at each wave they were in the care of their family and not in an OOHC placement. In addition to interview data, we used NSW child protection administrative data regarding the protection and placement history of the children.

7.3. Group-based trajectory modelling

The group-based approach for modelling developmental trajectories was used to provide a flexible method for identifying distinctive clusters of individual trajectories within the population and for profiling the characteristics of individuals within the clusters. Group-based trajectory modelling (GBTM) is a device for approximating the unknown population distribution of trajectories. Using the values of all entered outcomes, trajectory parameters are derived by a latent class analysis through maximum likelihood estimation (Nagin & Odgers, 2010). The analysis yields latent trajectory groups as clusters of individuals following approximately the same trajectory; the objective of GBTM is to identify the distinct features of the data that can be thought of as longitudinal latent strata.

Finding the best fitting GBTM is an iterative process that involves determining the optimal number of trajectory groups and identifying the shape of their trajectories. Model selection is based on a combination of factors including statistical measures (ie posterior probabilities and odds of direct classification), visual inspection of the predicted trajectories, and the Bayesian Information Criteria (BIC). The model that is ultimately retained is that in which each group's parameters for level and trend are statistically significant ($p < .05$), their trajectory appears distinct from those of other trajectory groups, and their prevalence (sample size) is sufficient to allow for interpretation and generalisability to other units following the same trajectory (Linden, 2018).

7.4. Measures

7.4.1. Trajectory variables

Three variables relevant to children's contact experiences across four waves were entered in the GBTM:

(1) *Frequency of contact* with mother was measured by 'yearly contact': number of times the child had contact with their mother, as reported by carers and on a five-point scale: 0 "no contact" (0 yearly contact), 1 "less than monthly" (contact <12 times a year), 2 "less than weekly but at least monthly" (12–51 times a year), 3 "at least weekly" (52 or more times a year), 4 "most days" (360 or more a year). Contact included face-to-face contact as well as other forms (telephone, email, social media etc);
(2) *Quality of child's relationship* with their mother – carers answered 'yes/no' to whether the child had a good relationship with their mother; and.

---

[5] A final order refers to a ruling by the Children's Court to allocate all or some aspects of parental responsibility for a child to the Minister or another party until permanent restoration, guardianship or adoption is arranged, or until they reach 18 years of age (NSW Department of Communities and Justice, 2020a, 2020b).
[6] Wave 5 was conducted in 2019–2020, achieving a 10-year longitudinal study.

(3) *How well the child's need to maintain family contact was being met,* as rated by carers with response options ranging from 1 "very well" to 4 "not at all well".

7.4.2. Trajectory predictors

To describe the distinctive features of each trajectory group, we used variables relating to demographics, child socio-emotional wellbeing, child protection history, OOHC placements, family contact and carer characteristics.

7.4.2.1. Child characteristics. Linkage with the NSW DCJ administrative data provided information about the child including: child's age in years at entry to care, Aboriginal background, gender and whether they were from a culturally and linguistically diverse (CALD) background. Child socio-emotional wellbeing was reported by carers using standardised measures. For children aged 12–35 months of age in Wave 1, socio-emotional wellbeing was assessed via the 42-item Brief Infant Toddler Socio-Emotional Assessment (BITSEA) problem score, and dichotomised into typical/atypical using published norms (Briggs-Gowan et al., 2004; Briggs-Gowan & Carter, 2006). In Wave 1, socio-emotional wellbeing of children aged 3–17 years was assessed using the Child Behaviour Checklist (CBCL) Total Problems Score and categorised into clinical, borderline and normal using published norms (Achenbach et al., 2001; Achenbach & Rescorla, 2000). The clinical and borderline categories were then combined into a single 'atypical' group for ease of comparison with BITSEA scores. The single 'typical/atypical' variable across all ages was used at Waves 1.[7] Child vocabulary was assessed using a short form of the Picture Peabody Vocabulary Test for children aged 3–17 years and categorised into typical or atypical according to published guidelines (Australian Council for Educational Research (ACER), 2000; Dunn & Dunn, 2007). These standardised scales were chosen for the study as they are widely used and tested, with excellent psychometric properties including validity and reliability (for details, see technical report NSW Department of Communities and Justice, 2020a, 2020b).

7.4.2.2. Child protection history and OOHC placement characteristics. The data linkage from administrative data also provided information about the child's placement type (foster care, relative/kinship care or residential care) and number of care placements until 30 June 2018 (corresponding to Wave 4 data collection); and risk of significant harm issues which had been verified by a child protection worker through a field assessment prior to entry into OOHC in yes/no format including physical, sexual and emotional abuse, neglect, domestic violence, carer drug and alcohol use, child and young people risk and, prenatal and other issues. Carers reported whether the child lived with a sibling (yes/no).

7.4.2.3. Birth family contact. Information about contact visits at wave 1 were used to predict the trajectories over time, and they included carers report whether the child had face-to-face contact with a sibling not living with them (yes/no) and whether contact was unsupervised with their mother (yes/no) at Wave 1. Carers rated the child's behaviour after the last contact visit with their mothers at Wave 1 on a five-point scale ranging from 1 "positive and showed no distress" to 5 "negative and was anxious or typically showed signs of distress". Where no contact was recorded, this variable was treated as missing.

7.4.2.4. Problems with contact. We used carer ratings of problems with contact at Wave 1 and 4. Carers answered "yes" or "no" to a series of potential contact problems including: time and distance, hostility between birth family and carer, parent's behaviour, impact of contact on the child, the child not wanting contact and parents cancelling or not showing up.

7.4.2.5. Carer characteristics. One carer per child was interviewed and it was requested that the carer who know the child best completed the survey if possible. Carers reported their age group (<40, 41–50, 51–60, 61+ years, dichotomised into <50/51+) and gender (male/female) at Wave 1. They also rated their own general health at Wave 1 on a six-point scale ranging from 1 "excellent" to 6 "very poor". Carer mental health at Wave 1 was assessed using the K10 scale of psychological distress (Kessler et al., 2002; Kessler et al., 2003). Scores ranged from 10 to 50 with higher scores indicating more distress. Children aged 7–17 years rated their current carer's emotional responsiveness using the Parenting Style Inventory II (Darling & Toyokawa, 1997) at Wave 1. Scores ranged from 5 to 25 with higher scores indicating more responsive parenting.

7.5. Analytic approach

The first stage of the analysis employed GBTM to explore patterns across all four waves of data to identify multivariate trajectory subgroups based on carer report of: (1) frequency of yearly contact; (2) quality of child's relationship with the mother; (3) how well the child's need to maintain family contact was being met. To determine the optimal number of trajectory groups and choose the number and order of regression parameters, we followed Nagin's procedure for model selection (Nagin & Tremblay, 2005). First, we fitted a 2-group models, testing zero-order, linear, quadratic specifications for the trajectory shapes. Extra groups were added (2-, 3-, 4- and 5-groups) until the best fitting model was established. This procedure to augment the number of trajectories was repeated until there was

---

[7] BITSEA is a screening tool that identifies children who may require further assessment to identify clinically significant social/emotional and behavioural problems and/or delays/deficits. The CBCL is one component of the Achenbach System of Empirically Based Assessments (ASEBA) that enables you to obtain standardised ratings on functioning to identify children who may benefit from additional support (Achenbach et al., 2001; Achenbach & Rescorla, 2000).

no longer evidence for improvement in model fit (evidenced by BIC values). At a second step, we tested the shape of the trajectories (cubic, quadratic, linear, intercept) for the selected model in Step 1 by evaluating the statistical significance of the terms (Louvet et al., 2009). After confirming the number and shape of the trajectories, we checked the posterior probabilities of members belonging to each group (0.7 as a criterion) and checked the odds of correct classification (5 as a criterion). 48.7 % of the sample had four waves completed. Additional 18.1 % had 3 waves, 14.9 % had 2 waves and 18.2 % had only 1 wave completed, and data was missing at random. The missingness did not impact on the analysis, given that GBTM uses Full Information Maximum Likelihood (FIML) methodology for dealing with missing data.

The second stage of the analysis employed a multinomial regression analysis to examine the associations of child, placement and carer characteristics at Wave 1, or the DJC administrative data where available, with trajectory membership using multinomial logistic regression model, with the categorical trajectory group as the dependent variable. Variables showing univariate association ($p < .05$) on trajectory membership were entered into a multivariate model. Multinomial logistic regression was chosen over ordinal *logistic* multinomial models because the latter models require an order or ranking to the outcomes (Gelman & Hill, 2007). Missing data points were declared missing and not included in the analysis.

The third stage of the analysis examined specific problems related to contact associated with the subgroups. We used McNemar's test of significance to compare problems between Waves 1 and 4 to examine potential changes in problems related to contact over time within trajectory groups (identified at the first stage of the analysis) and graphically depicted the 'problem profiles' for each trajectory group. All analyses were conducted using Stata statistical software version 14.2 (StataCorp., College Station, TX). Group-based trajectory groups were estimated using the 'traj' package for Stata (Jones & Nagin, 2012).

8. Results

8.1. Sample population

Table 1 shows the baseline characteristics of the sample. Children had a median age of 2.0 years (mean of 3.4 years) upon entry to care, around half were female, more than a third were Aboriginal and around 14 % were from a culturally and linguistically diverse background. Just under a third of children had clinical levels socio-emotional difficulties at Wave 1. Just under half were in relative or kinship care and more than half lived with one or more siblings. More than half had >3 care placements. Just under half the children at Wave 1 had face-to-face contact with one or more sibling. A small proportion had unsupervised contact with their mother at Wave 1. Prior to entry to care, parent drug and alcohol issues were identified for a majority of children, and around a quarter had physical abuse and neglect identified. Carers responding to the Wave 1 survey were mostly female and around 40 % were aged over 51. Most carers were in very good or excellent health and had low psychological distress scores on average.

Table 2 shows descriptive statistics for the three trajectory variables, that were the main study outcomes of interest over four waves: (1) yearly contact with mothers (2) quality of relationship with mothers, and (3) how well the child's needs for maintaining family relationships were being met. The yearly contact frequency with mothers tended to decrease over time and the proportion of children having no contact with mothers nearly doubled between Waves 1 and 4. Similarly, the proportion of children who had a good relationship with their mother decreased over time, according to their carer's reports. Carers also reported that the children's needs for maintaining family contact were being met relatively well, overall, with a slight improvement between waves 1 and 3 but then declining again to Wave 4.

8.2. Multigroup trajectories

The next stage of the analysis was to enter the three main outcomes of interest described above to multivariate GBTM to represent the interrelations of the three outcomes over time: (1) yearly contact with mothers (2) quality of relationship with mother, and (3) how well the child's needs for maintaining family relationships were being met. Comparing between 2 and 10 groups, the five-group model showed the best fit with the lowest Bayesian Information Criteria (BIC) value. This model included intercept, linear, quadratic and cubic trajectories for the key variables: A five trajectory model with a mix of intercept, linear, quadratic and cubic trajectory shapes was found to capture the essential features of the data in a most parsimonious manner: yearly contact (11220); quality of relationship with mother (02123); and whether contact was meeting the needs of the child (03112). Posterior probabilities of members belonging to each group exceeded 0.7 (range from 0.71 to 0.89), consistent with good model fit. Also consistent with good model fit, the odds of correct classification were five or more for each group.

Fig. 1 shows the preferred model of five trajectories based on the three main outcomes of interest. Group 1 (*low poor; n = 218*), which comprised an estimated 14.5 % of the population, is most distinctive regarding the negative profile for all three outcomes of interest: the low frequency of yearly contact they had upon entry to care dropped off to no contact, they had consistently poor relationships with their mother and meeting the child's needs for maintaining family relationships was neutral, although there was a slight improvement over time. Group 2 (*moderate poor: n = 456*) was the largest group and represented nearly one third of the sample (30.3 %). The group had slightly declining trend for contact frequency. Relationship with the mother was poor and meeting the needs of the child was neutral, with relative stability over time. Group 3 (*improving: n = 299, 19.8 %*) and Group 4 (*declining: n = 294, 19.5 %*) are an interesting contrast. Children in Group 3 started off with poor relationship that improved over time, contact frequency showed a slight increasing trajectory over time and there was a clear trend towards meeting the child's needs more over time. Conversely, Group 4 started with relatively high yearly frequency of contact, a good relationship with the parent, and neutral in meeting the needs of the child, with all three outcomes declining/worsening over time. Finally, children in Group 5 (*high good; n = 240*) accounted for an

Table 1
Descriptive statistics for variables included in the analysis.

	Wave	Respondent	Total sample	Statistic
Child characteristics				
Age at entry to care, *Median*	All	DCJ data	1507	2.0 (0, 6)
Female, n (%)	All	DCJ data	1507	760 (50.4)
Aboriginal, n (%)	All	DCJ data	1507	586 (38.9)
CALD, n (%)	All	DCJ data	1507	212 (14.1)
Socioemotional problems[a], n (%)	1	Carer	1190	359 (30.2)
Care characteristics				
Relative/kinship care[b], n (%)	1	DCJ data	1285	598 (46.5)
3+ placements, n (%)	All	DCJ data	1506	881 (58.5)
Live with sibling, n (%)	1	Carer	1285	751 (58.4)
Birth family contact				
Face to face contact with sibling, n (%)	1	Carer	1284	611 (47.6)
Unsupervised contact with mother, n (%)	1	Carer	1066	92 (8.6)
Child's behaviour problems after contact visit with mother, M(SD)	1	Carer	1040	3.0 (1.4)[c]
Protective concern before first care period				
Physical abuse, n (%)	All	DCJ data	1507	338 (22.4)
Sexual abuse, n (%)	All	DCJ data	1507	61 (4.1)
Neglect, n (%)	All	DCJ data	1507	411 (27.3)
Emotional, n (%)	All	DCJ data	1507	121 (8.0)
Domestic violence, n (%)	All	DCJ data	1507	221 (14.7)
Parent mental health, n (%)	All	DCJ data	1507	190 (12.6)
Parent drug/alcohol use, n (%)	All	DCJ data	1507	1034 (68.6)
Children and young people risk, n (%)	All	DCJ data	1507	16 (1.1)
Prenatal issue, n (%)	All	DCJ data	1507	27 (1.8)
Other, n (%)	All	DCJ data	1507	5 (0.3)
Child's carer[d]				
Child's carer is a female, n (%)	1	Carer	1260	1148 (91.1)
Child's carer over 50 years of age, n (%)	1	Carer	1240	494 (39.8)
Child's carer mental health score, n (%)	1	Carer	1238	13.6 (4.6)
Child's carer very good/excellent general health, n (%)	1	Carer	1259	820 (65.1)
Carer's emotional responsiveness score, M(SD)	1	Child	323	21.3 (3.4)

[a] Based on the Brief Infant-toddler Socio-Emotional Assessment scores for children aged 12–35 months of age at Wave 1, and the Child Behaviour Checklist for children aged 3–17 years.

[b] At Wave 1661 children were in foster care and 26 were in residential care. Those in residential care are not examined separately due to the small number of them.

[c] Score of 3 corresponds to "neutral" child behaviour.

[d] Some carers had multiple children in their care. There were 910 unique carers at Wave 1.

Table 2
Descriptive statistics for three key outcomes[a] included in the trajectory model.

	Wave 1 n = 1285	Wave 2 n = 1200	Wave 3 n = 1033	Wave 4 n = 962
Yearly contact with mother[b]				
None, n (%)	217 (16.9)	269 (22.4)	256 (24.8)	301 (31.3)
Less than monthly, n (%)	535 (41.6)	509 (42.4)	446 (43.2)	358 (37.2)
Less than weekly but at least monthly, n (%)	353 (27.5)	233 (19.4)	184 (17.8)	162 (16.8)
At least weekly, n (%)	151 (11.8)	61 (5.1)	71 (6.9)	57 (5.9)
Most days, n (%)	28 (2.2)	19 (1.6)	8 (0.8)	18 (1.9)
Quality of relationship with mother, n (%)	459 (35.7)	353 (29.4)	285 (27.6)	267 (27.8)
Child's needs for maintaining family relationships are being met				
Not at all well, n (%)	93 (7.2)	62 (5.2)	69 (6.7)	69 (7.2)
Not very well, n (%)	165 (12.8)	117 (9.8)	108 (10.5)	92 (9.6)
Fairly well, n (%)	480 (37.4)	396 (33.0)	316 (30.6)	318 (33.1)
Very well, n (%)	521 (40.6)	504 (42.0)	463 (44.8)	401 (41.7)

[a] Percentages may not sum to 100 due to rounding and missing data.

[b] Includes children who did not have face-to-face contact with their mother: W1: n = 237 (18.4 %), W2: n = 272 (26.7 %), W3 n = 272 (26.3 %), W4 n = 318 (33.1 %).

estimated 15.9 % of the sample and their trajectories were the highest/most positive on all three outcomes related to contact: high yearly contact frequency, good relationship with the parent and meeting the child's needs were all rated positively with relative stability over time.
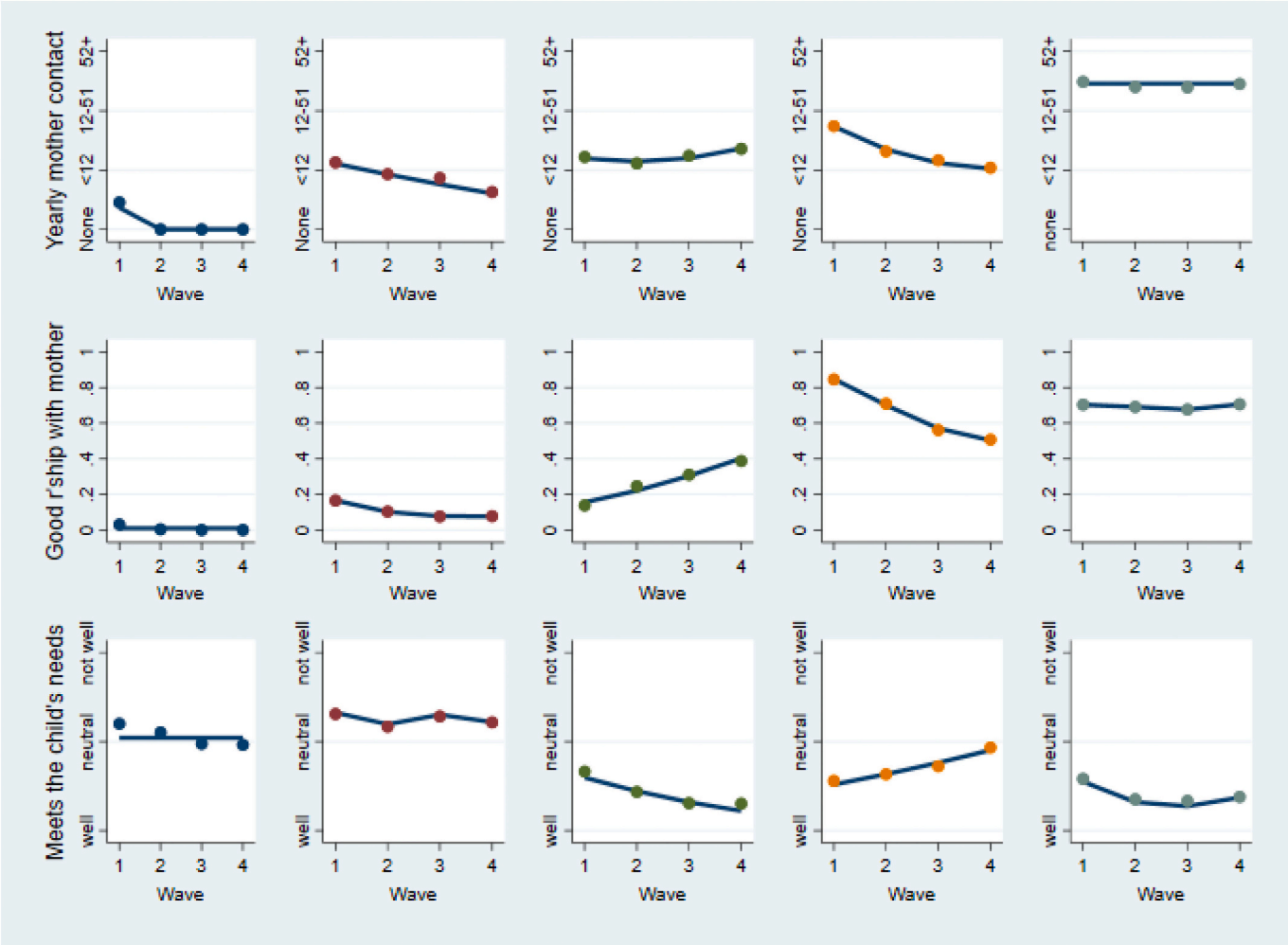
Fig. 1. Trajectory patterns across four waves for yearly contact with mother, the probability of the child having a good relationship with mother and the extent the contact meets the child's needs for maintaining family relationships.

8.3. Predictors of the five trajectory groups

To identify Wave 1 and time-invariant demographic characteristics associated with membership in the five trajectory groups, we ran a series of bivariate correlations (see Table S1) with trajectory predictor variables related to child, placement, contact, protective concerns and carer (see Table S1 for comprehensive detail). We then selected variables to include in a multivariate multinomial logistic regression where bivariate associations were significant at $p < .05$.[8] These included child's age at care entry, Aboriginal background, child socio-emotional wellbeing, care type, living with siblings, face-to-face contact with siblings, unsupervised contact with mother, risk of significant harm reports (domestic violence, parent drug/alcohol use, prenatal issues), the age of the child's carer, and child's carer mental health and general health.

The multinomial logistic regression model (Table 3) showed that child's age, Aboriginal background, child socioemotional problems, placement type, face-to-face contact with siblings, unsupervised contact with mothers, and carer mental health problems were significantly associated with trajectory group memberships. Overall, children in the most positive trajectory (*high good)* tended to be older at care entry, have no socio-emotional problems, reside in kinship care, not have face to face contact with their siblings, and have unsupervised visits with their mothers. Children with supervised contact, who were in foster care (as opposed to relative/kinship care), who were from Aboriginal background, and who resided with carers with more mental health problems were less likely to have their contact needs met with the current arrangements. Some variations to this overall pattern are shown across trajectories, and these are addressed in the discussion section.

8.4. Problems related to contact across the trajectory groups

We then examined whether problems reported by the carers that were directly related to contact visits were different across the five trajectory groups. Fig. 2 depicts 'problem profiles' across the five trajectories and changes in each problem over time.

The main problems related to contact across all groups were parent behaviours during contact, negative impact on child, and parents cancelling or not showing up to visits. In all the groups except Group 4 (*declining*), problems tended to decrease over time. Group 1 (*low poor*), with the lowest frequency of yearly contact, had the lowest proportions of problems overall, and saw a significant increasing trend for parents cancelling visits ($p < .05$). In Group 2 (*moderate poor*), all problems except children not wanting contact appeared to decline over time, but there were no significant differences. In Group 3 (*improving*) parent-carer hostility and child not wanting contact non-significantly increased between waves 1 and 4. All other problems decreased for Group 3, although the only significant decrease was for contact having a negative impact on the child ($p = .005$). Group 4 (*declining*) was the only group for whom problems tended to increase between Waves 1 and 4, and this increase was significant for parent behaviour and child not wanting contact. Despite their higher rates of contact overall, Group 5 (*high good*) had the lowest reported problems with contact, with no significant changes over time.

9. Discussion

The aim of the current analysis was to identify longitudinal patterns in family contact related to three key outcomes: (1) frequency of yearly contact with mothers; (2) quality of relationship between child and mother; and (3) how well the child's needs for maintaining family relationships were met. We interpret the findings through the lens of attachment theory (Bowlby, 1978) that posits that experiences with primary caregivers provide the basis to develop internal models about the self, the world, and relationships. Our analysis showed five distinct trajectories defined by longitudinal patterns in the three contact outcomes and these five patterns were significantly related to child, placement and care history characteristics.

9.1. Group 1 'low poor'

The first trajectory group, *'low poor'*, exhibited low frequency of contact that ceased over time. Children in this group had poor relationships with mothers but carers tended to report that this type of arrangement met the child's needs increasingly over time. This group had the largest proportion of Aboriginal children and these children were the least likely to be in relative/kinship care at Wave 1. They had low levels of sibling involvement in their lives, both in terms of contact or sharing a care placement. Relative to those in the 'high good' group, contact for these children was more likely to be supervised at first entry to their out-of-home placement, children were more likely to be in foster care and carer mental health was poorer. Given the infrequent contact between mothers and children, it was not unexpected that problems related to contact were low and stayed steady over time, with the exception of significant increase in contact cancellation by the parent at Wave 4.

9.2. Group 2 'moderate poor'

The second group, 'moderate poor', was the most common trajectory in the sample, representing almost one third of the children. It involved a relatively stable pattern of moderate contact frequency, poor relationship with the parent, and not meeting the needs of the

---

[8] Some variables which were significant at the bivariate level were excluded from the multivariate model due to high correlation with other independent variables. Included variables are indicated with * in Table AS1.

Table 3

Multinomial Logistic Regression Analysis for the Five Contact Trajectories with Mothers ($p < .05$ Bolded).

Outcomes	'Poor low' vs 'high good'	'Moderate poor' vs 'high good'	'Improving vs 'high good'	'Declining' vs 'high good'
	Coef. [95 % CI]	Coef [95 % CI]	Coef [95 % CI]	Coef [95 % CI]
Child characteristics				
Age at entry	**−0.25 [−0.38, −0.12]**	**−0.07 (−0.13, −0.00)**	**−0.09 [−0.15, −0.02]**	0.02 (−0.03, 0.08)
Aboriginal background	**1.42 [0.75, 2.10]**	**1.19 (0.74, 1.64)**	**0.71 [0.25, 1.17]**	**0.63 (0.20, 1.06)**
Socioemotional problems	0.60 [−0.16, 1.36]	**0.59 (0.10, 1.09)**	0.26 [−0.25, 0.78]	0.15 (−0.33, 0.64)
Care/contact characteristics				
Relative/kinship care	**−1.80 [−2.55, −1.06]**	**−1.43 (−1.90, −0.96)**	**−1.22 [−1.69, −0.76]**	**−0.87 (−1.32, −0.43)**
Live with sibling	−0.65 [−1.33, 0.02]	−0.34 (−0.78, 0.11)	−0.41 [−0.85, 0.04]	−0.34 (−0.76, 0.09)
Face to face sibling contact	0.55 [−0.12, 1.21]	**0.44 (0.02, 0.87)**	**0.45 [0.02, 0.88]**	0.14 (−0.26, 0.55)
Unsupervised contact	**−2.10 [−4.16, −0.04]**	**−1.58, (−2.40, −0.75)**	**−1.23 [−2.02, −0.44]**	**−0.67 (−1.27, −0.07)**
Protective concerns prior to first care period				
Emotional abuse	0.97 (−0.05, 1.99)	−0.03 (−0.78, 0.72)	−0.75 (−1.67, 0.16)	−0.00 (−0.69, 0.69)
Domestic violence	0.75 (−0.05, 1.55)	−0.02 (−0.58, 0.54)	0.21 (−0.35, 0.76)	0.39 (−0.11, 0.89)
Parent drug/alcohol	0.25 (−0.48, 0.99)	−0.37 (−0.82, 0.08)	−0.12 (−0.57, 0.34)	0.18 (−0.27, 0.63)
Prenatal report	−0.49 (−3397.01, 3396.03)	14.21 (−1500.71, 1529.14)	14.53 (−1500.39, 1529.45)	13.16 (−1507.76, 1528.09)
Carer characteristics				
51+ years	0.09 [−0.62, 0.79]	0.06 (−0.39, 0.51)	−0.18 [−0.63, 0.28]	−0.07 (−0.49, 0.36)
Poor mental health	**0.08 [0.01, 0.16]**	**0.09 (0.04, 0.14)**	0.01 [−0.05, 0.07]	0.02 (−0.03, 0.07)
Poor general health	−0.02 [−0.38, 0.33]	−0.02 (−0.23, 0.20)	−0.15 [−0.37, 0.07]	−0.07 (−0.28, 0.13)
Model fit	LR chi² (64) = 257.01, prob. > chi² < 0.001; Log likelihood = −1305.50.70; Pseudo R² = 0.09			

Note: $n = 942$.

child. Children had similar characteristics to Group 1: low rates of relative/kinship care, low rates of unsupervised contact and poorer carer mental health. In contrast to the 'high good' group, children experienced high levels of socio-emotional problems, and were more likely to have contact with siblings. It is likely that children need specific supports around parental contact if both the child and carer present issues with mental wellbeing.

9.3. Group 3 'improving'

The third group, *'improving',* involved relatively low frequency of contact at the start of placement (Wave 1), which increased slightly over time. There were also slight improvements over time in the relationship with mothers and carers reporting that contact was meeting the child's needs to a greater extent. The carers and children in this group had fewer mental health issues, children were the youngest of all the groups at care entry, with low rates of relative/kinship care and unsupervised contact. It may be that this group experienced fewer stressors both in general (absence of mental health problems, younger age) and in relation to contact (child reactions to contact, distance, parent behaviours), that would have made it easier for the child to build, and the carer to support, a positive relationship with mothers through contact. Children were also less adversely impacted by parental contact over time according to the carers, and that is consistent with the improving trajectory.

9.4. Group 4 'declining'

The fourth group, *'declining',* started with a relatively high frequency of contact that steadily declined. The quality of parent-child relationship and contact meeting the child's needs also declined over time. The bivariate associations show that children in this trajectory had the highest rates of both domestic violence and parental drug/alcohol abuse prior to care entry, although these effects were attenuated after controlling for demographic and wellbeing factors. Group 4 was the only trajectory where specific contact problems increased over time (particularly negative impacts of parental behaviours on the child and the child not wanting contact). This group may have benefited from more carer/case worker support at care entry to establish a positive routine and to facilitate positive parent-carer relationships which could ultimately support children around contact.

9.5. Group 5 'high good'

The fifth group, *'high good',* involved a stable pattern of high frequency contact, good relationship with mothers, and meeting the child's needs well across all four waves. Compared to the other groups, children in this groups were the oldest at entry into OOHC, the most likely to be in relative/kinship placements and living with siblings and the least likely to be Aboriginal. They were also the most likely to have unsupervised contact compared to the other trajectories. This pattern follows the ideal contact trajectory, where contact is frequent and presumably fluid between siblings and parents due to informal arrangements that is generally more common in kinship
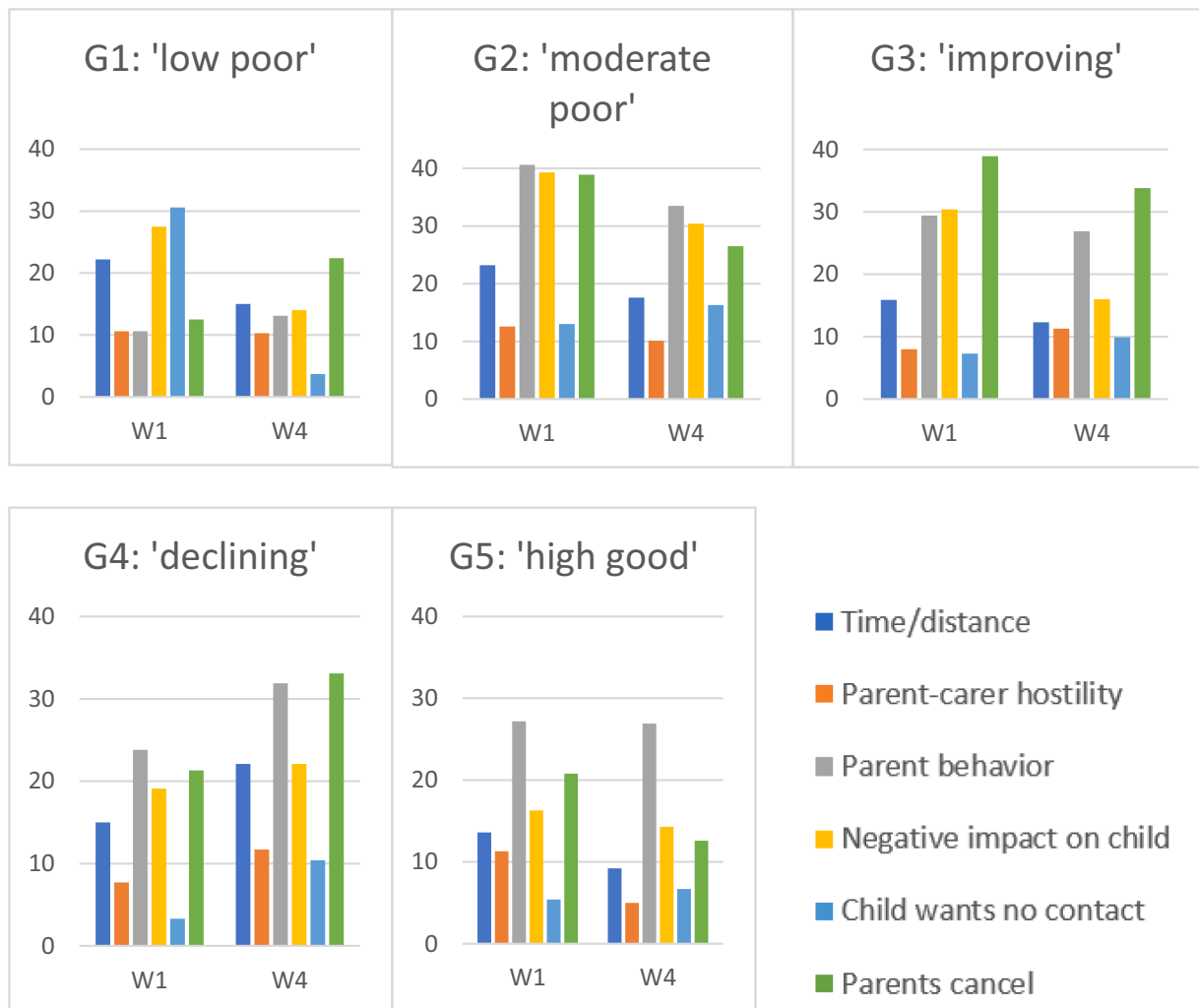
Fig. 2. Problems with contact at waves 1 and 4, by trajectory group, reported by carers.

care environment compared to foster care (León et al., 2017).

9.6. Risk and protective factors related to contact

The overall pattern of contact was consistent with the findings of McSherry et al. (2016) showing that contact frequency generally reduced over time, with some children ceasing contact with family members altogether. With the appropriate level of supports and intervention, it is likely that most children gradually developed stronger attachments to their carers over time, compared to their birth parents (West et al., 2020) that may partly explain this general finding. However, the trajectory modelling revealed that this declining trajectory was not true for two of the five groups, that accounted for over a third of the sample. The trajectory groups are particularly useful in illustrating the associations of risk and protective factors with contact trajectories over time and the heterogeneity of children in OOHC. In trajectories where contact was less likely to meet the needs of the child, contact was more likely to be supervised, there were more Aboriginal children and those placed in non-relative/kinship placements. Children were also more likely to have socio-emotional problems and also live with carers who experienced more mental health distress, and both of these factors may have disrupted the development of secure attachment between the child and the carer (West et al., 2020). All of these factors warrant a specific consideration regarding policy and practice around contact, as detailed below.

It has been previously reported that the need for contact supervision can change over time and should be assessed regularly (Suomi et al., 2020; Taplin et al., 2021). We found that unsupervised contact was related to stable and positive contact arrangements that were strongly associated with relative/kinship placements. Supporting children, parents, and carers to build positive relationships through contact should be a priority at entry to care, with the need for this type of support decreasing over time as general vulnerability decreases and the placement becomes more established. Supporting carers in their relationship with the birth family, particularly around contact visits, has been identified a key factor to help maintain the child's relationships with the birth family (Boyle, 2017;

Nesmith et al., 2017).

The proportion of Aboriginal children was high in groups 1 and 2 where the child's contact needs were not adequately met. These trajectory groups were the least likely to involve relative/kinship care placements, suggesting that the needs of Aboriginal children are still not met by the system in Australia (Davis, 2019). Previous Australian research found that when children are living 'off Country', some children travelled long distances to visit relatives only when carers were able to facilitate the long trips, which made contact arrangements fragile (Collings et al., 2019). This may partly explain the pattern of contact cessation in Group 1 (*low poor*) that involved a high proportion of Aboriginal children with long distance and time identified as a major problem with contact at the start of the care placement.

These findings come about 40 years after all Australian states agreed to The Aboriginal and Torres Strait Islander Child Placement Principles in the 1980s (these are now legislated, for example in NSW: Section 13 of the *Children and Young Persons (Care and Protection) Act 1998*). The Secretariat of National Aboriginal and Islander Child Care (SNAICC, 2005) similarly suggested that the stability of care placements and wellbeing of the child alongside their cultural connection is largely dependent upon family contact. While child protection policy in Australia now aims to place Aboriginal children with family or kin, and if that is not possible to keep them connected to their family, community and Country, the current findings suggest that there is still significant work to do to translate these ideals to practice.

While a number of studies examine child's age in relation to other aspects of out-of-home care, the literature on age and contact experiences is extremely limited (see a recent review Poitras et al., 2022). Some samples relying on small samples suggest there is no clear association between age and contact regularity, for and others that children between 1 and 5 years of age years are less likely to have regular parental contact compared to infants and older children. Similarly, our study shows mixed results related to the child's age; (Gean et al., 1985; Nesmith, 2015; Poitras et al., 2022). In the current study, children who entered foster care at a younger age tended to have improving contact trajectories, in the absence of other risk factors whereas children who entered foster care when they were older tended to have declining contact trajectories. Children who entered kinship/relative care older were likely to experience positive contact, although this result may be only indirectly associated with the child's age. Previous research shows older age at entry to care is associated with other poor child outcomes, higher likelihood of psychological problems, lower likelihood of being reunified and placement instability, for example (Becker et al., 2007; López et al., 2013). Older children are more likely to have been exposed to chronic adversities and stressors in birth families that can potentially contribute to a challenging contact situation (Shonkoff et al., 2012). Older children have also lived with their birth families for longer and more likely to have developed insecure or ambivalent attachment style, but they also more negatively affected by the disruption with the primary attachment figure (West et al., 2020). Even when it is necessary to remove children for their safety, separation from birth family is traumatic (Klain & White, 2013; Kramer et al., 2013). For older children, there is a need to clarify the purpose of, and accordingly tailor, contact visits for adolescents, given their autonomy and increasing capacity to make their own decisions about their place within their family network (Moyers et al., 2006).

While the bivariate analysis showed that emotional abuse, domestic violence and parental substance abuse prior to entry into OOHC were related to some of the contact patterns with mothers, these effects were attenuated in the multivariate models controlling for possible confounding effects of demographic, wellbeing and care placement characteristics. The current results are inconsistent with previous studies reporting that physical abuse, domestic violence or parent drug and alcohol use are related to more negative and less frequent contact (Boyle, 2017; McSherry et al., 2016). This discrepancy could possibly be due to our inclusion of high proportion of supervised contact included in the models, as violent/addicted parents are less likely to have been granted unsupervised contact.

Carers' mental health problems predicted more negative contact trajectories with mothers in the current analysis. The need for additional support for carers has been found in many previous studies of foster and relative/kinship carers showing high levels of self-reported stress among foster and kinship carers, particularly in terms of building a secure attachment between the child and carers (McKeough et al., 2017; Zuchowski et al., 2019). Specific support needs include ongoing training, support from other carers, respite and respectful relationships between caseworkers and birth families (Thomson et al., 2016). Family contact can take an added toll on carers who experience issues with mental wellbeing as facilitating family contact can be time consuming and emotionally challenging, especially where children are placed long distances away from contact venues (Humphreys & Kiraly, 2009; Kenrick, 2010; Triseliotis et al., 2000). Policy and practice should aim for better ways to support carers, birth family and children at first entry to OOHC, usually the most crucial time for setting up positive care trajectories – and at every new placement.

9.7. Problems related to contact with parents.

Visit cancellations, negative parent behaviours and impact on the child were the most common problems related to contact with parents, as reported by carers and they all tended to decrease when the contact experience improved. While problems related to contact generally improved over time, the findings show two major deviations from this pattern: non-problematic and positive contact (Group 4) at the start of placement can significantly decline when appropriate supports are not in place (i.e., contact supervision) particularly when both carers and children are experiencing mental health difficulties. Similarly, contact can improve after a problematic start and problems tended to significantly decrease when carers and children had fewer mental health issues, and when they were younger (Group 3). These patterns highlight the need for regular reviews of contact arrangements, also called for in other studies (Suomi et al., 2020; Taplin & Mattick, 2015).

While maintaining a relationship with a family of origin is important in ensuring successful OOHC placements and positive long-term outcomes for those who have experienced OOHC, it may be that for a small number of children limited contact with parents is more appropriate. The current analyses, for example, showed a group of children with socio-emotional problems where regular contact with mothers continued despite significant problems directly related to contact (e.g., parent-carer hostility, parent cancellations).

These distinct patterns provide further evidence of the importance for comprehensive assessments of contact arrangements and needs at regular time intervals involving children, birth parents and carers. The need for flexibility in ensuring developmentally appropriate contact planning and re-planning is particularly important, and echoed in other published research (Grotevant et al., 2019; Singer & Brodzinsky, 2020). Assessment tools should be further developed for this purpose to meaningfully take account of each person's perspective in making contact plans, particularly the children.

Finally, mothers' cancellations of contact visits were the most common problem at the last wave of the data cited by the carers. While there are likely to be a range of reasons for non-attendance, (Haight et al., 2002; Morrison et al., 2011), more efforts should focus on reducing contact cancellations by examining how contact can be better supported. This may be particularly beneficial at the start of care placement as carers, parents and children establish their relationship and contact routine. When contact challenges continue over time, thorough assessment followed by appropriate intervention is needed. While evidence of specific contact interventions is scarce, supervised contact with a skilled worker or carer can provide a therapeutic opportunity to improve the contact experience for children (Bullen et al., 2017). Providing emotional and practical supports for parents before and after contact visits has been demonstrated to decrease contact cancellations, for example (Suomi et al., 2020).

9.8. Limitations and strengths

This analysis has several noteworthy limitations. First, the analysis of the study solely focused on contact with birth mothers and did not examine the child's relationship with other significant family members. This is a particularly relevant limitation to understanding patterns of contact for Aboriginal children for whom extended family and kin are likely to be more important than for non-Aboriginal children and should be investigated in future analysis of the POCLS data. Second, we did not have sufficient information about the birth mothers,[9] which significantly limits our understanding on the relationship they have with the child and possible reasons for the patterns we found in the data; why some children ceased contact with their mothers, reasons for contact cancellations, and how mothers themselves perceived the quality of the relationship with their child. Third, most of the variables we analyzed were reported by carers, and it is likely their view of contact is different to that of birth parents (Blythe et al., 2014). For instance, carers may have overestimated how well contact met the child's needs, given their likely involvement in designing and facilitating this contact. Little research has involved collecting information directly from children (Kiraly & Humphreys, 2013; Wilson et al., 2020) and given that POCLS has this information for children over the age of six, this should be addressed in future studies. In relation to the first three limitations, the POCLS methodology focusses heavily on birth family contact and may not be comprehensive in capturing all relevant aspects of Aboriginal family contact and connections (Davis, 2019). Fourth, the data analysis was limited to a number of binary and categorical/count variables, many of them not validated for the current purpose, thus we may not have been able to capture more subtle changes in contact frequency, or the quality of the mother-child relationships. Fifth, findings cannot be generalised to the whole of the NSW out-of-home care population, as the POCLS data is not a representative sample, and this analysis used unweighted data. Fifth, for children who changed placements after Wave 1, the trajectory predictors do not capture all relevant the associations over time; that is a limitation of any predictive modelling using this type of OOHC data. Finally, our analysis did not include assessment of contact quality, which may be just as important (if not more so) as contact frequency.

Despite these limitations, our analysis presents the first longitudinal multivariate analysis of contact data showing novel patterns of child-mother contact over time. The current results are particularly relevant to policy and practice showing the heterogeneity in contact trajectories over time that were significantly related to the child, placement and carer characteristics as well as the child's protection history. This type of person-centred approach to analysis is different to the typical variable-oriented approach as it examines characteristics related to unique subgroups of individuals rather than just examining relationships between variables.

9.9. Conclusion

The current analysis of the POCLS data presents a comprehensive and detailed account of longitudinal patterns in family contact for children in OOHC. Findings revealed that contact needs and relationships with birth mothers are not static, but likely to evolve in conjunction with the child's socio-emotional wellbeing. The results of this study can inform contact policy and practice about tailoring contact arrangements to match the various needs of children related to contact in OOHC. The findings also inform the development of future research and interventions to improve contact experiences for children in OOHC, particularly supporting children, birth mothers and carers; and collecting the perspectives of birth families and children in OOHC.

Supplementary data to this article can be found online at https://doi.org/10.1016/j.chiabu.2023.106199.

CRediT authorship contribution statement

AS: Project lead, conceptualisation, design, write up; NL: Data management, preparation and analysis, review and editing; DP: support for conceptualisation, methodology, funding proposal, review and editing; MA: support for conceptualisation relating to policy and practice, review and editing.

---

[9] Where children were restored, birth parents were asked about their experiences of contact, but the sample sizes were insufficient to analyse for the current study.

Funding

The study was funded by the NSW Department of Communities and Justice (DCJ), Australia.

Declaration of competing interest

The authors of this paper declare no conflict of interest.

Data availability

The data is publicly available and can be made available via a reasonable request to the NSW Department of Justice and Communities.

Acknowledgements

We wish to extend our thanks to all the children, young people and caregivers who participated in the interviews; caseworkers and teachers who participated in on-line survey interviews; and the NSW Department of Communities and Justice (DCJ), the data custodian of New South Wales child protection administrative data used in analysis. Funding for this analysis was provided by the DCJ. The views expressed in this paper are those of the authors and do not necessarily reflect the position of the NSW Department of Communities and Justice.

Ethical approval

The study methodology was approved by the University of New South Wales Human Ethics Committee (HREC) and ratified by Australian Catholic University HREC.

References

Achenbach, T. M., Dumenci, L., & Rescorla, L. A. (2001). In *Ratings of Relations Between DSM-IV Diagnostic Categories and Items of the CBCL/6-18, TRF, and YSR* (pp. 1–9). Burlington, VT: University of Vermont.

Achenbach, T. M., & Rescorla, L. A. (2000). *Manual for the ASEBA preschool forms and profiles*. Burlington, VT: University of Vermont Department of Psychiatry.

Atwool, N. (2013). Birth family contact for children in care: How much? How often? Who with? *Child Care in Practice, 19*(2), 181–198.

Austerberry, H., Stanley, N., Larkins, C., Ridley, J., Farrelly, N., Manthorpe, J., & Hussein, S. (2013). Foster carers and family contact: Foster carers' views of social work support. *Adoption & Fostering, 37*(2), 116–129.

Australian Council for Educational Research (ACER). (2000). *PPVT-III-LSAC Australian short-form, developed by S. Rothman*. Camberwell, Vic: ACER.

Australian Institute of Family Studies, Chapin Hall Center for Children University of Chicago, New South Wales Department of Family and Community Services. (2015). *Pathways of care longitudinal study: Outcomes of children and young people in out-of-home care in NSW. Wave 1 baseline statistical report*. Sydney: N.S.W. Department of Family and Community Services.

Australian Institute of Health and Welfare. (2020). *Child protection Australia 2018–19*. Canberra: Australian Institute of Health and Welfare.

Australian Law Reform Commission, Human Rights and Equal Opportunity Commission. (1997). *Seen and heard: Priority for children in the legal process*.

Becker, M. A., Jordan, N., & Larsen, R. (2007). Predictors of successful permanency planning and length of stay in foster care: The role of race, diagnosis and place of residence. *Children and Youth Services Review, 29*(8), 1102–1113.

Blythe, S. L., Wilkes, L., & Halcomb, E. J. (2014). The foster carer's experience: An integrative review. *Collegian, 21*(1), 21–32.

Bowlby, J. (1978). Attachment theory and its therapeutic implications. *Adolescent Psychiatry, 6*, 5–33.

Boyle, C. (2017). What is the impact of birth family contact on children in adoption and long-term foster care? A systematic review. *Child & Family Social Work, 22*, 22–33.

Briggs-Gowan, M. J., & Carter, A. S. (2006). *Brief infant-toddler social and emotional assessment: Examiner's manual*. Yale University and the University of Massachusetts: Brookes Publishing.

Briggs-Gowan, M. J., Carter, A. S., Irwin, J. R., Wachtel, K., & Cicchetti, D. V. (2004). The brief infant-toddler social an emotional assessment: Screening for socio-emotional problems and delays in competence. *Journal of Pediatric Psychology, 29*(2), 143–155.

Broadhurst, K., & Mason, C. (2013). Maternal outcasts: Raising the profile of women who are vulnerable to successive, compulsory removals of their children–A plea for preventative action. *Journal of Social Welfare and Family Law, 35*(3), 291–304.

Bullen, T., Taplin, S., McArthur, M., Humphreys, C., & Kertesz, M. (2017). Interventions to improve supervised contact visits between children in out of home care and their parents: A systematic review. *Child & Family Social Work, 22*(2), 822–833.

Cashmore, J., & Taylor, A. (2017). Children's family relationships in out-of-home care. In *Research report number 5*. Sydney, NSW: Department of Family and Community Services.

Cashmore, J., & Taylor, A. (2021). *Children's relationships with their family and carers first five years in out-of-home care. (Report number #15)*.

Collings, S., Wright, A. C., & Spencer, M. (2019). *Family Connections and Contact Study: Final Report. Institute of Open Adoption Studies, Faculty of Arts and Social Science*. The University of Sydney.

Darling, N., & Toyokawa, T. (1997). *Construction and Validation of the Parenting Style Inventory II (PSI-II)*. Department of Human Development and Family Studies, The Pennsylvania State University. Unpublished manuscript.

Davis, M. (2019). *Family is culture review report: Independent review of Aboriginal children and young people in OOHC*. Sydney: Family is Culture.

Dunn, L. M., & Dunn, D. M. (2007). *Peabody picture vocabulary test fourth edition, manual*. Minneapolis, MN: Pearson Assessments.

Farmer, E., & Moyers, S. (2008). *Foster care: Fostering effective family and friends placements*. London: Jessica Kingsley Publishers.

Fossum, S., Vis, S. A., & Holta, A. (2018). Do frequency of visits with birth parents impact children's mental health and parental stress in stable foster care settings. *Cogent Psychology, 5*. https://doi.org/10.1080/23311908.2018.1429350

Fuentes, M. J., Bernedo, I. M., Salas, M. D., & García-Martín, M. A. (2019). What do foster families and social workers think about children's contact with birth parents? A focus group analysis. *International Social Work, 62*(5), 1416–1430.

Gean, M., Gillmore, J., & Dowler, J. (1985). Infants and toddlers in supervised custody: A pilot study of visitation. *Journal of American Academy of Child and Adolescent Psychiatry, 24*(5), 608–612. https://doi.org/10.1016/S0002-7138(09)60063-7

Gelman, A., & Hill, J. (2007). *Data analysis using regression and multilevel/hierarchical models*. Cambridge: Cambridge University Press.

Grotevant, H. D., Wrobel, G. M., Fiorenzo, L., Lo, A. Y., & McRoy, R. G. (2019). Trajectories of birth family contact in domestic adoptions. *Journal of Family Psychology, 33*(1), 54.

Haight, W. L., Black, J. E., Mangelsdorf, S., Giorgio, G., Tata, L., Schoppe, S. J., & Szewczyk, M. (2002). Making visits better: The perspectives of parents, foster parents, and child welfare workers. *Child Welfare-New York, 81*(2), 173–202.

Höjer, I. (2009). Birth parents' perception of sharing the care of their child with foster parents. *Vulnerable Children and Youth Studies, 4*(2), 161–168.

Humphreys, C., & Kiraly, M. (2009). *Baby on board: Report of the infants in care and family contact research project.* Alfred Felton Research Program.

Humphreys, C., & Kiraly, M. (2011). High-frequency family contact: A road to nowhere for infants. *Child & Family Social Work, 16*(1), 1–11.

Järvinen, M., & Luckow, S. T. (2020). Sociological ambivalence: Relationships between birth parents and foster parents. *Sociology, 54*(4), 825–841.

Jones, B. L., & Nagin, D. S. (2012). A stata plugin for estimating group-based trajectory models. *Sociological Methods & Research, 42*(4), 608–613.

Kenrick, J. (2010). Concurrent planning (2): The rollercoaster of uncertainty. *Adoption & Fostering, 34*(2), 38–48.

Kessler, R. C., Andrews, G., Colpe, L. J., Hiripi, E., Mroczek, D. K., Normand, S.-L. T., Walters, E. E., & Zaslavsky, S. (2002). Short screening scales to monitor population prevalences and trends in nonspecific psychological distress. *Psychological Medicine, 32*(6), 959–976.

Kessler, R. C., Barker, P. R., Colpe, L. J., Epstein, J. F., Gfroerer, J. C., Hiripi, E.Zaslavsky, A. M., … (2003). Screening for serious mental illness in the general population. *Archives of General Psychiatry, 60*(2), 184–189.

Kiraly, M., & Humphreys, C. (2013). Family contact for children in kinship care: A literature review. *Australian Social Work, 66*(3), 358–374.

Kiraly, M., & Humphreys, C. (2016). 'It's about the whole family': Family contact for children in kinship care. *Child & Family Social Work, 21*(2), 228–239.

Kiraly, M., James, J., & Humphreys, C. (2015). 'It's a family responsibility': Family and cultural connection for aboriginal children in kinship care. *Children Australia, 40*(1), 23–32.

Klain, E. J., & White, A. R. (2013). Implementing trauma-informed practices in child welfare. ABA Center on Children and the Law. Retrieved from Child Welfare http://childwelfaresparc.org/wp-content/uploads/2013/11/Implementing-Trauma-Informed-Practices.pdf.

Kramer, T. L., Sigel, B. A., Conners-Burrow, N. A., Savary, P. E., & Tempel, A. (2013). A statewide introduction of trauma-informed care in a child welfare system. *Children and Youth Services Review, 35*(1), 19–24.

León, E., Jiménez-Morago, J. M., & Muñoz-Silva, A. (2017). Contact between birth parents and children in kinship care in a sample from Spain. *Child & Family Social Work, 22*(2), 1075–1083.

Linden, A. (2018). Using group-based trajectory modelling to enhance causal inference in interrupted time series analysis. *Journal of Evaluation in Clinical Practice, 24* (3), 502–507.

López, M., Del Valle, J. F., Montserrat, C., & Bravo, A. (2013). Factors associated with family reunification for children in foster care. *Child & Family Social Work, 18* (2), 226–236.

Louvet, B., Gaudreau, P., Menaut, A., Genty, J., & Deneuve, P. (2009). Revisiting the changing and stable properties of coping utilization using latent class growth analysis: A longitudinal investigation with soccer referees. *Psychology of Sport and Exercise, 10*(1), 124–135.

McKeough, A., Bear, K., Jones, C., Thompson, D., Kelly, P. J., & Campbell, L. E. (2017). Foster carer stress and satisfaction: An investigation of organisational, psychological and placement factors. *Children and Youth Services Review, 76*, 10–19.

McSherry, D., Fargas Malet, M., & Weatherall, K. (2016). Comparing long-term placements for young children in care. In *The care pathways and outcomes study –*. Northern Ireland. London: BAAF.

McWey, L. M., Acock, A., & Porter, B. E. (2010). The impact of continued contact with biological parents upon the mental health of children in foster care. *Children and Youth Services Review, 32*, 1338–1345.

McWey, L. M., & Cui, M. (2021). More contact with biological parents predicts shorter length of time in out of home care and mental health of youth in the child welfare system. *Children and Youth Services Review, 128*, Article 106164.

Montserrat, C. (2006). Kinship foster care: A study from the perspective of the caregivers, the fostered children and the professionals involved]. *Intervención Psicosocial, 15*, 203–221. https://doi.org/10.4321/S1132- 05592006000200006

Morrison, J., Mishna, F., Cook, C., & Aitken, G. (2011). Access visits: Perceptions of child protection workers, foster parents and children who are crown wards. *Children and Youth Services Review, 33*(9), 1476–1482.

Moyers, S., Farmer, E., & Lipscombe, J. (2006). Contact with family members and its impact on adolescents and their foster placements. *British Journal of Social Work, 36*(4), 541–559.

Nagin, D. S., & Odgers, C. L. (2010). Group-based trajectory modeling in clinical research. *Annual Review of Clinical Psychology, 6*, 109–138.

Nagin, D. S., & Tremblay, R. E. (2005). Developmental trajectory groups: Fact or a useful statistical fiction? *Criminology, 43*(4), 873–904.

Nesmith, A. (2013). Parent–child visits in foster care: Reaching shared goals and expectations to better prepare children and parents for visits. *Child and Adolescent Social Work Journal, 30*(3), 237–255.

Nesmith, A. (2015). Factors influencing the regularity of parental visits with children in foster care. *Child and Adolescent Social Work Journal, 32*(3), 219–228.

Nesmith, A., Patton, R., Christophersen, K., & Smart, C. (2017). Promoting quality parent–child visits: The power of the parent–foster parent relationship. *Child & Family Social Work, 22*(1), 246–255.

NSW Department of Communities and Justice. (2020). *Measures Manual (Waves 1-4). Pathways of Care Longitudinal Study: Outcomes of Children and Young People in Out-of-Home Care. Technical Report Number 8.* Sydney, Australia: NSW Department of Communities and Justice.

NSW Department of Communities and Justice. (2020). Examining differences between care and protection order status: Final and no final orders cohorts. Pathways of care longitudinal study: Outcomes of children and young people in out-of-home care. In *Technical Report Number 18*. Sydney: NSW Department of Communities and Justice.

Poitras, K., Porlier, S., & Tarabulsy, G. M. (2022). Child's adjustment and parent-child contact after child placement into foster care: A systematic review. *Journal of Public Child Welfare, 16*(5), 575–606.

Prasad, N. (2011). *Decision making principles around contact visits.* Sydney: UnitingCare Children, Young People and Families.

Ross, N., Cocks, J., Johnston, L., & Stoker, L. (2017). 'No voice, no opinion, nothing': Parent experiences when children are removed and placed in care. http://www.lwb.org.au/assets/Parent-perspectives-OOHC-Final-Report-Feb-2017.

Saini, M., Van Wert, M., & Gofman, J. (2012). Parent–child supervised visitation within child welfare and custody dispute contexts: An exploratory comparison of two distinct models of practice. *Children and Youth Services Review, 34*(1), 163–168.

Secretariat of National Aboriginal and Islander Child Care (SNAICC). (2005). *Policy paper: Achieving stable and culturally strong out of home care for aboriginal and Torres Strait islander children.* In (pp. 1–30). Melbourne: SNAICC.

Sen, R., & Broadhurst, K. (2011). Contact between children in out-of-home placements and their family and friends networks: A research review. *Child & Family Social Work, 16*(3), 298–309.

Shonkoff, J. P., Garner, A. S., Siegel, B. S., Dobbins, M. I., Earls, M. F., McGuinn, L., & Committee on Early Childhood, A., and Dependent Care (2012). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics, 129*(1), e232–e246.

Sinclair, I. (2005). *Foster children: Where they go and how they get on.* Jessica Kingsley Publishers.

Singer, J., & Brodzinsky, D. (2020). Virtual parent-child visitation in support of family reunification in the time of COVID-19. *Developmental Child Welfare, 2*(3), 153–171.

Suomi, A., Lucas, N., McArthur, M., Humphreys, C., Dobbins, T., & Taplin, S. (2020). Cluster randomized controlled trial (RCT) to support parental contact for children in out-of-home care. *Child Abuse & Neglect, 109*. https://doi.org/10.1016/j.chiabu.2020.104708

Taplin, S., Lucas, N., Suomi, A., Kertesz, M., Humphreys, C., & McArthur, M. (2021). Parents' contact visits with their children in care: Factors associated with cancellations. *Children and Youth Services Review, 127*, 106127. https://doi.org/10.1016/j.childyouth.2021.106127

Taplin, S., & Mattick, R. P. (2014). The nature and extent of child protection involvement among heroin-using mothers in treatment: High rates of reports, removals at birth and children in care. *Drug and Alcohol Review, 34*(1), 31–37.

Taplin, S., & Mattick, R. P. (2015). The nature and extent of child protection involvement among heroin-using mothers in treatment: High rates of reports, removals at birth and children in care. *Drug and alcohol review, 34*(1), 31–37.

Thomson, L., Watt, E., & McArthur, M. (2016). *Literature review: Foster carer attraction, recruitment, support and retention*. Canberra: Institute of Child Protection Studies, Australian Catholic University. https://doi.org/10.24268/fhs.8304

Triseliotis, J. (2010). Contact between looked after children and their parents: A level playing field? *Adoption & Fostering, 34*(3), 59–66.

Triseliotis, J., Borland, M., & Hill, M. (2000). *Delivering foster care*. London: British Agencies for Adoption and Fostering.

Vanschoonlandt, F., Vanderfaeillie, J., Van Holen, F., De Maeyer, S., & Andries, C. (2012). Kinship and non-kinship foster care: Differences in contact with parents and foster child`s mental health problems. *Children and Youth Services Review, 34*(8), 1533–1539.

West, D., Vanderfaeillie, J., Van Hove, L., Gypen, L., & Van Holen, F. (2020). Attachment in family foster care: Literature review of associated characteristics. *Developmental Child Welfare, 2*(2), 132–150.

Wilson, K., Sinclair, I., Taylor, C., Pithouse, A., & Sellick, C. (2004). *Fostering success: An exploration of the research literature in foster care*. Social Care Institute for Excellence.

Wilson, S., Hean, S., Abebe, T., & Heaslip, V. (2020). Children's experiences with child protection services: A synthesis of qualitative evidence. *Children and Youth Services Review, 113*, Article 104974.

Zuchowski, I., Gair, S., Henderson, D., & Thorpe, R. (2019). Convenient yet neglected: The role of grandparent kinship carers. *The British Journal of Social Work, 49*(3), 615–616.

Further reading

Jiménez, J. M., & Palacios, J. (2008). *El acogimiento familiar en Andalucía: Procesos familiares, perfiles personales [Foster care in Andalusia: Family processes, personal profiles]*. Granada, Spain: Junta de Andalucía.