Parental trajectories of PTSD and child adjustment: Findings from the Building a New Life in Australia Study

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Abstract

Aims. Evidence suggests that the psychosocial adjustment of children of refugees may be compromised when a parent has symptoms of posttraumatic stress disorder (PTSD). We sought to determine whether trajectories of parental PTSD symptoms might relate to child adjustment and whether there is an additive effect when both, as opposed to just one parent, has prominent PTSD symptoms.

Method. We report data from the first three years of a prospective study of recent Australian humanitarian migrants: the *Building a New Life in Australia* study. Parental PTSD symptoms were assessed on three occasions and Latent Class Growth Analysis was used to identify homogenous groups of parents based on their PTSD symptoms. The Strength and Difficulties Questionnaire was administered to assess child psychosocial adjustment. Regression analyses were then conducted to determine whether trajectories of parental PTSD symptoms predicted child adjustment. Results. After controlling for child age and gender, the presence of either one or both parents with persistently high PTSD symptoms was associated with children having greater emotional difficulties and poorer overall psychosocial adjustment. Children with both parents with persistently high PTSD had higher levels of emotional difficulties than children with a single parent with high PTSD symptoms. Conclusion. For emotional difficulties, though not other domains of child psychosocial adjustment, there indeed appears to be an “additive” impact of having two, rather than just one parent with persistently high PTSD symptoms, although the magnitude of these effects was small. The clinical and service provision implications of these findings are discussed.
Public Policy Relevance

High levels of posttraumatic stress disorder (PTSD) symptoms are common in refugees following exposure to potentially traumatic events in their country of origin or during the migration process. Within family units, the ways in which the course of parental PTSD symptoms are associated with child psychosocial adjustment are not well understood, especially when both parents, as opposed to just one, have prominent symptoms of PTSD. Our study suggests that children with a parent with persistently high PTSD symptoms are likely to have poorer emotional and overall psychosocial adjustment, with this being compounded when both parents have persistently high PTSD symptoms.
Of the 68.5 million individuals forcibly displaced from their homes during 2017, 25.4 million were refugees, and over half were under the age of 18 (UNCHR, 2019). Given that many refugees will be migrating as family units, there is a need to better understand the interplay between persistent parental psychological health post-settlement and child psychosocial adjustment.

For some adult refugees, exposure to potentially traumatic events (PTE) and persecution in their country of origin and/or during their migration journey can result in persistently high levels of posttraumatic stress disorder (PTSD) symptoms (Hauff & Vaglum, 1994; Silove et al., 2007). This persistence of PTSD in the resettlement environment not only impacts on resettlement stress for adult refugees, but may impact on the wellbeing of their children (Almqvist & Broberg, 1999; Pumariega et al., 2005).

Many children of refugees find themselves having higher exposure to stressful home environments if one or both parents has PTSD. The high level of dislocation and acculturation challenges associated with resettlement can result in higher levels of reliance of children on their parents as primary caregivers and social supports across the resettlement period (Khamis, 2016; Fazel & Stein, 2002).

A number of studies have investigated the adjustment of children of refugees who have mental health symptoms. Among US refugees from South East Asia, maternal traumatic stress was associated with greater depressive symptoms, antisocial behaviour, school problems and delinquency in children (Sangalang, et al., 2017). Maternal PTSD symptoms have also been found to be related to
increased child anxiety (Field et al., 2013). In an Australian refugee sample, the primary caregiver’s severity of PTSD was found to be associated with poorer child adjustment including a higher prevalence of conduct, hyperactivity, emotional and peer problems (Bryant et al., 2018). Khamis (2016) studied refugee families settled in the U.S from the Gaza strip and found that when the influence of parent’s psychological distress was controlled for, children’s direct exposure to traumatic experiences was no longer associated with psychological difficulties.

A limitation of the above research is that the studies only focused on the effect of PTSD symptoms in mothers or primary caregivers on child adjustment, such that the potential additive effect of having both parents with symptoms of PTSD remains unclear. Additionally, the majority of research in this area has not investigated the longitudinal trajectories of parental PTSD symptoms, leaving open the question of how the prospective course of PTSD symptoms may be associated with child adjustment. Child outcomes might be particularly unfavorable when both parents endorse greater levels of PTSD symptoms as Lambert et al. (2014) found that both maternal and paternal PTSD was an important factor in child psychological adjustment.

It remains unclear to what extent PTSD symptoms among one or both parents from a refugee background is associated with compromised psychosocial adjustment in children and how the prospective course of parental symptoms might predict child adjustment. The current study therefore aimed to examine the relationship between the nature and course of parental PTSD and the association of this with child adjustment, and particularly whether child mental health is worse among children when both parents have PTSD compared to when one
parent has PTSD. Improving our understanding of these relationships may help health practitioners better identify “at risk” children and adolescents and to prioritize access to care.

It was hypothesized that adult PTSD trajectories that are associated with the persistence of “high levels” of parental PTSD symptomology in one parent will lead to less favorable psychosocial outcomes for refugee children. Secondly, it was hypothesised that the persistence of “high levels” of parental PTSD symptomology in both parents will have a “compounding” effect whereby the psychosocial adjustment of children in these families will be particularly unfavorable.

**Method**

We used unit record data from the first three waves of the Building a New Life in Australia (BNLA) study. The BNLA study is a prospective population based survey aimed at investigating the factors influencing post-arrival adjustment of newly arrived humanitarian migrants in Australia to help guide policy development and service provisions (Chen et al., 2017; Edwards et al., 2018). Participants were recruited from 11 sites around Australia where the largest numbers of humanitarian migrants were settling.

Eligible participants were primary applicants of humanitarian visas which were awarded before their migration to Australia. They were 18 years of age or older and had arrived in Australia 3 – 6 months before their first wave interview. Visa holders who had obtained their humanitarian visas following arrival in Australia were also eligible, provided that a permanent protection visa was
granted 3 – 6 months prior to their first wave interview and they were 18 years of age or older. Participants identified to be eligible to participate in the BNLA study at wave 1 included 2399 primary applicants, or 1509 migrating units. Of the 2399 participants, 1894 (79%) were retained at Wave 3.

Survey materials were translated into 14 different languages and trained interpreters were used when necessary. Ethics approval was obtained from the Australian Institute of Family Studies Human Research Ethics Committee for the BNLA study, and local approval for the present secondary analyses was obtained from the [Blinded for review] Ethics Committee.

Questionnaires

The Post-Traumatic Stress Disorder–8 item scale (Hansen et al., 2010) was derived from the Harvard Trauma Questionnaire to measure for PTSD symptoms among refugees. Symptoms during the past week are rated from 1 (not at all) through to 4 (most of the time) with total scores ranging 8 to 32. The PTSD-8 has been shown to have sound convergent validity and test-retest reliability (Hansen et al., 2010).

The Strengths and Difficulties Questionnaire (SDQ; 25-items; Goodman, 2001) was administered to primary caregivers (parent report) to complete at Wave 3. The SDQ assesses child psychosocial adjustment (internalizing and externalizing problems) across five domains: conduct problems, hyperactivity problems, emotional problems, peer problems and pro-social behavior. For a measure of total difficulties (range 20-60) the conduct, hyperactivity, emotional and peer problems subscales are summed together. Parents were asked to reflect on their children(s) behaviour over the previous 6 months and rate each item in
the SDQ on a scale from 1 (not true) to 3 (certainly true). The SDQ has been validated in non-western populations (Goodman et al., 2000; Mullick & Goodman, 2001).

Procedure

Data collection occurred annually, with the first wave of data being collected between October 2013 and March 2014. For a detailed summary of the methods see Edwards et al. (2018).

The PTSD-8 was administered at each wave of data collection and primary caregivers were administered the SDQ at Wave 3. Children of caregivers were grouped into two age groups: The younger age group consisted of 5 to 10 year olds, and the older age group consisted of 11 to 17 year olds. These age groups were chosen on the basis that 11 to 17 year olds were also considered able to provide their own self-report ratings, although we note that the present analyses rely solely on parent ratings. Children in the older age group were preferentially selected for parents to report on over the younger children. If families had one child aged between 11 and 17 years old and multiple children in the younger age group, parents were asked to complete measures on the older child (“Child 1”), and then a younger child would randomly be selected (“Child 2”). If all children were aged between 11 and 17 or 5 and 10 years old, two of the children were randomly selected.

As we also aimed to investigate the extent to which both parent’s experience of PTSD symptoms resulted in poorer child adjustment, we extracted principal applicants who had permanent partners across all three waves of data collection. This was to avoid the confound of parental relationships that were only
brief or transient in nature. Of the 1894 participants retained at Wave 3, 269 pairs of partners who were also parents and included a male (father) and female (mother) were identified (see Supplementary Figure 1 for summary). We report findings for “mothers” and “fathers” of heterosexual parent relationships, given that only two relationship pairs were non-heterosexual. To reduce the risk that parent pairs were only engaged in short-term relationships, we only analysed couples who remained together across all three waves of assessment. To ensure that each parent had regularity of interactions with their child(ren), we also only analysed parental couples who were living together across all three waves.

Data analysis

Participants who were missing data on key dependent variables at all three assessment waves were removed prior to analysis ($n = 16$). For the remaining participants, the expectation maximization algorithm (Graham, 2009) was used to estimate missing values given that data appeared to be missing completely at random (Little’s MCAR test $\chi^2 = 140.85$, $df = 392$, $p > 0.05$).

Latent Class Growth Analysis (LCGA) was conducted using Mplus Version 7.31 (Muthén & Muthén, 2010) to identify homogenous longitudinal patterns of PTSD symptoms (PTSD-8) among parents of a refugee background over three years post settlement. LCGA is a model-based approach to group individuals into trajectory classes. Models were estimated based on recommendations outlined in Jung & Wickrama (2008). A series of models specifying respectively greater numbers of classes were specified. The optimal number of trajectory classes was then determined using the Bayesian Information Criterion (BIC; Schwartz, 1978), Akaike’s Information Criterion (AIC; Akaike,
1987), entropy (classification quality; Ramaswamy et al., 1993) and the Lo, Mendell & Rubin likelihood ratio test (LMRLRT; Lo et al., 2001). Lower values of AIC, BIC and higher entropy indicate better fit (Geiser, 2013). Entropy ranges from 0 to 1 with values closer to 1 indicating better classification accuracy (Ramaswamy et al., 1993). The LMR-LRT is used to compare the improvement in model fit from one class to the next. A significant LMR-LRT shows that the subsequent class model improves significantly upon the preceding class model. In addition to fit indices, Jung & Wickrama (2008) also highlight the importance of parsimony and interpretability when determining the number of classes. After the LCGA model of best fit was decided upon, parents were assigned to their most likely class based on model probabilities in SPSS.

Once each parent was assigned a trajectory class membership, a single variable was created to indicate the class membership of each parent pair (e.g., both high PTSD or both low etc). We then conducted linear regression analyses to determine the associations between parental PTSD and child social, emotion and behavioural adjustment as measured by the SDQ. Dependent variables included SDQ total difficulties, emotional problems, conduct problems, hyperactivity problems and peer problems. In addition to parental PTSD trajectory, child gender and age were also added as potential covariates in block 1 of the model.

Results

Descriptive Statistics

Of the 542 parents in the sample (n = 271 parent pairs), two of the parent pairs were of the same gender and so removed from the analysis to ensure
consistent parental gender effects for our analyses. Most parents came from Iraq 
\( n = 324, 60.2\% \) and Afghanistan \( n = 82, 15.2\% \). The demographic 
characteristics for the 538 parents for whom PTSD symptom trajectories were 
analysed are summarised in Supplementary Table 1.

Of the 269 parent pairs, only 261 were used for child-related analyses, due 
to missing SDQ data for eight children. Of the children included for analysis in 
the current study \( n = 261 \), 140 were male \( (53.6\%) \) and 169 \( (64.8\%) \) were 
between the ages of 11 and 17 (Table 1).

*Latent class growth Analysis for PTSD*

Table 2 summarises the fit statistics for the seven different trajectory class 
solutions (one through to seven) for parental PTSD symptoms. For Fathers, a four 
class solution provided the best fit to the data based on the LMRLRT and reduced 
rate of decrease for BIC values for classes 4 to 5. The classes could best be 
described as “Improvers” \( (34.9\%) \), “Persistent mid-range PTSD” \( (21.8\%) \), 
“Persistent high PTSD” \( (31.4\%) \) and “Persistent very high PTSD” \( (11.9\%) \). The 
left panel of Figure 1 shows the four-class PTSD symptom trajectories for 
Fathers. Given that relatively few fathers fell within the “Persistent very high 
PTSD” class \( (11.9\%) \), the Persistent high and Persistent very high PTSD groups 
for Fathers were collapsed for all subsequent analyses.

For Mothers, a two-class solution, “Persistent low PTSD” \( (81.2\%) \) and 
“Persistent high PTSD” \( (18.8\%) \) appeared to provide the best fit to the data based 
on the LMRLRT and a lowest BIC value for a two-class solution \( (5167.27) \). The 
right panel of Figure 1 shows the two-class PTSD symptom trajectories for 
Mothers.
Association between parental PTSD and children’s social, emotional and behavioural adjustment

Linear regression analyses were conducted to determine whether parent dyad PTSD trajectory class membership predicted children’s scores on SDQ total difficulties, emotional problems, conduct problems, hyperactivity problems, peer problems and prosocial functioning respectively. Given that parental PTSD symptoms might have differential associations with child adjustment depending on the age and gender of the child, child gender and age category were included as covariates in all regression analyses. Analyses pertaining to the eldest child refer to “Child 1”, analyses referring to the younger child refer to “Child 2”.

Regression analyses were conducted for the following comparisons of Fathers and Mothers:

1. Father or Mother persistent high PTSD symptoms trajectory class compared to both Father and Mother in the persistently low PTSD symptom trajectory class (reference group). These analyses indicate whether having either parent with persisting high PTSD symptoms is associated with elevated SDQ scores in children when compared to children who have neither parent with persistently high PTSD symptoms.

2. Father and Mother both have persistently high PTSD symptom trajectories compared to both Father and Mother in the persistently low symptom trajectory class (reference group). This comparison would indicate whether there are elevated SDQ scores among children of
parents where both parents have persistently elevated PTSD symptoms.

3. Father and Mother have persistently high PTSD symptom trajectories compared to either Fathers or Mothers having persistently high PTSD symptom trajectories. These analyses would indicate whether there is an additive effect of having both compared to just one parent with persistently elevated PTSD symptoms.

We repeated the above analyses for the secondary child (Child 2) when present. The results of these analyses are included as Supplementary Tables given the smaller number of second children and reduced statistical power for those analyses.

The first set of regressions, summarised in Table 3, compare children where either parent was found to be within the high PTSD symptom trajectory class with those children where both parents belonged to the low PTSD symptom trajectories class. Both SDQ Total and Emotional Difficulties scores were significantly elevated among children where one parent was found to belong to the persistently high PTSD trajectory class ($p_s = 0.02$ and $0.0012$ respectively).

We note that 2.8% and 4.1% would correspond to small size correlation coefficients ($r = 0.17$ & 0.20 respectively) according to Cohen’s (1992) conventions for effect size.

For the second set of regressions, summarised in Table 4, both SDQ Total and Emotional Difficulties scores were significantly greater in children who had two parents within the high PTSD symptom trajectory class when compared to children who had two parents with low PTSD symptom trajectories ($p_s = 0.018$
and 0.0028 respectively). These analyses accounted for 5.5% and 8.9% of the variance in Child 1 SDQ scores respectively, corresponding to small (r = 0.23) and medium size (r = 0.30) effects respectively.

The third set of regressions (Table 5) compared children where both Father and Mother have persistent high PTSD symptoms vs either Father and Mother alone having high level PTSD symptoms. SDQ Emotional Difficulties, but not Total Difficulties or any other SDQ subscale, were significantly greater in children who had both, as opposed to either parent in the high PTSD trajectory class ($p = 0.028$). However, the regression predicting SDQ Emotional Difficulties only explained a small amount of the variance in the model (1.9%), equivalent to a correlation of 0.14.

Supplementary Tables 4-5 summarize the findings when these regressions were repeated for the “Child 2” participants.

**Discussion**

A strength of the BNLA study was the prospective assessment of parental PTSD across a three-year interval. Given that many refugees report improvements in psychological symptoms following arrival in their host country (Westermeyer et al., 1989), investigating the relationships between the longitudinal trajectories of parental PTSD symptoms and childhood functioning holds particular value, especially if the negative effects on children might arise only after an extended period of parental difficulties. We found that between 20% and 33% percent of refugees were identified within the persistently high PTSD symptom class across the three-year survey period. This finding is consistent with prior research
documenting high rates of PTSD (Hauff & Vaglum, 1994; Marshall et al., 2005) but establishes for the first time the persistently severe trajectory PTSD class within family groups.

A second key finding related to the association between parental PTSD and child mental health. Our results suggest that having one parent with persistently higher levels of PTSD symptoms is associated with unfavourable adjustment in children’s emotional and overall psychosocial functioning. This supports our first hypothesis, although we note that the association was small in magnitude. Previous cross-sectional research has found that parental PTSD is associated with child emotional and behavioural adjustment (Daud et al., 2005; Khamis, 2016), as well as overall adjustment in the case of children of refugees (Dalgaard et al., 2016; Eruyar et al., 2018; Fazel & Stein, 2002; Lambert et al., 2014). Our study extends these findings by demonstrating that it is specifically a persistence of high PTSD symptoms in either parent that is associated with emotional and overall psychosocial difficulties. It is possible then, that previous cross-sectional findings reporting this association may have reflected SDQ symptoms which may only have emerged after a prolonged period of PTSD-related difficulties for the parent. Further studies should aim to better understand these prospective relationships, perhaps by additionally assessing SDQ scores across time.

A similar pattern of findings emerged when we compared children with both parents with persistently high PTSD with children who had both parents persistently low on PTSD symptoms. Again, both emotional and total psychosocial difficulties were elevated among children who had two parents with
persistently high levels of PTSD symptoms, the small magnitude of the association notwithstanding.

Our findings are of particular importance in establishing an additive effect of having both parents with persistently high PTSD symptoms, as opposed to just one. In this respect, only the SDQ emotional difficulties subscale demonstrated such an additive effect when two, rather than just one parent, were persistently high on PTSD symptoms. In contrast to children with just one parent with persistently elevated PTSD symptoms, children who have both parents with persistently elevated PTSD may have been exposed to consistent maladaptive modelling of hypervigilance-related behaviors and dysregulated affect, potentially priming elevated threat expectancies and emotional difficulties in the children themselves. Importantly, these elevated emotional difficulties in children may be less evident to clinicians, caregivers and teachers than difficulties in other respects, such as compromised peer relationships, misconduct or hyperactivity.

It is noteworthy that our significant findings were confined to the domains of emotional difficulties as well as total psychosocial difficulties: other domains of child SDQ scores were not significantly different when comparing various pairings parental PTSD trajectory classes. Given that emotional difficulties as assessed by the SDQ incorporate ways of responding to stress which could broadly be described as “internalizing” (Goodman et al., 2010) our findings have particular implications for interventions which might target internalizing symptoms, as opposed to either “externalizing” symptoms of conduct problems and hyperactivity, or social difficulties as reflected by the peer problems and prosocial behaviours subscales of the SDQ. Thus, the interpersonal supports of
these children may in fact remain strong in spite of family stress and potentially serve a protective function.

There are a number of important implications of these findings. A clear implication is that services that are oriented to providing specialist refugee support services to adults need to be mindful of the obligation to identify and provide support to “at risk” children through close examination of childhood adjustment for children of families where one or both parents have PTSD. Our finding that emotional problems were particularly evident in children of parents with persisting PTSD highlights internalizing behaviors as an area of particular potential focus. Additionally the findings suggest that there may be indirect and secondary benefits for children when their parents receive help for PTSD.

The current findings should be considered alongside the study’s limitations. First, we were not able to control for child exposure to trauma or child PTSD symptoms, thus we are unable to determine whether childhood difficulties were the result of an interplay between parental symptoms and typical child adjustment or, instead, a product of third factors such as exposure to trauma in the child or the whole family unit. Second, in instances where both parents reported high PTSD symptom trajectories, we were not able to determine whether the symptoms of each parent resulted from shared or distinct traumatic experiences. Third, there was insufficient statistical power for us to be able to analyze data for single parent families. Fourth, we relied on the parent reported SDQ measure, thus not allowing a comparison of perspectives between adolescents and their parents on adjustment. While parent ratings on the SDQ have been validated across contexts (Biel et al., 2012; Bourdon et al., 2005), it is possible that parents who
were experiencing high levels of psychological symptoms themselves may have also perceived their children as being more symptomatic. We also note that the methodology of the study precluded us from choosing a child at random within each family, thus, the results may be biased by a proportionately greater number of first-born children were included in our analyses. Finally, we note that the magnitude of the significant effects was typically small. Thus, while these associations were evident in a large sample and may inform the need for services at the population level, our findings do not necessarily suggest that meaningful deficits in psychosocial adjustment can be assumed when considering any individual child or family unit.

Our study thus highlights the different trajectories of PTSD recovery among caregivers within resettled refugee families. Of particular importance is the association between persisting parental PTSD symptom trajectories and unfavorable emotional and overall adjustment in children. Children where both parents had persisting high-level PTSD symptom trajectories were at the highest risk and should be a particular focus for intervention programs with the knowledge that such intervention may have benefits for children as well. There is a need for continued research to improve our understanding of the factors and mechanisms that hinder child adjustment in this population to help guide policy development and service provisions to mitigate these effects.
References


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Table 1. Demographics and Strengths and Difficulties Questionnaire (SDQ) scores children at Wave 3.

<table>
<thead>
<tr>
<th></th>
<th>Child 1* ((n = 261))</th>
<th>Child 2 ((n = 160))</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(n)</td>
<td>%</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>140</td>
<td>53.6</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-11 years</td>
<td>92</td>
<td>35.2</td>
</tr>
<tr>
<td>11-17 years</td>
<td>169</td>
<td>64.8</td>
</tr>
<tr>
<td>Parent-rated SDQ score</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Emotional problems</td>
<td>7.19</td>
<td>1.98</td>
</tr>
<tr>
<td>Conduct problems</td>
<td>6.34</td>
<td>1.55</td>
</tr>
<tr>
<td>Hyperactivity problems</td>
<td>7.87</td>
<td>2.02</td>
</tr>
<tr>
<td>Peer problems</td>
<td>7.26</td>
<td>1.37</td>
</tr>
<tr>
<td>Prosocial behaviour</td>
<td>13.16</td>
<td>2.11</td>
</tr>
<tr>
<td>SDQ Total difficulties</td>
<td>28.67</td>
<td>5.23</td>
</tr>
</tbody>
</table>

* Child 1 was the eldest child of each family.
Table 2. Incremental fit statistics and classification accuracy for latent class growth model for PTSD-8 total scores.

| Number of classes | Father | | | | | | Mother | | | | |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
|                   | LL     | AIC    | BIC    | Entropy| LMRLRT p-value | LL     | AIC    | BIC    | Entropy| LMRLRT p-value | |
| 1                 | -2753.22 | 5516.45 | 5534.42 | -     | -     | -2623.74 | 5257.49 | 5275.46 | -     | -     | -     |
| 2                 | -2621.11 | 5258.22 | 5286.97 | 0.85  | 264.23 | <0.001   | -2561.26 | 5138.52 | 5167.27 | 0.80  | 124.97 | <0.001 |
| 3                 | -2598.15 | 5218.30 | 5257.84 | 0.81  | 45.92 | <0.001   | -2554.59 | 5131.17 | 5170.71 | 0.59  | 13.35  | 0.04   |
| 4                 | -2576.13 | 5180.26 | 5230.59 | 0.91  | 44.04 | 0.002    | -2550.94 | 5129.87 | 5180.20 | 0.66  | 7.30   | 0.59   |
| 5                 | -2564.14 | 5162.28 | 5223.39 | 0.90  | 23.99 | 0.26     | -2525.26 | 5084.53 | 5145.64 | 0.91  | 19.62  | 0.18   |
| 6                 | -2553.13 | 5146.25 | 5218.15 | 0.90  | 22.02 | 0.004    | -2519.65 | 5079.30 | 5151.19 | 0.89  | 11.23  | 0.66   |
| 7                 | -2540.44 | 5126.88 | 5209.56 | 0.88  | 25.37 | 0.17     | -2513.12 | 5072.25 | 5154.92 | 0.89  | 11.61  | 0.38   |

Note. AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion; LL = Loglikelihood; LMRLRT = Lo-Mendell Rubin Likelihood ratio test.
Table 3. Regressions predicting SDQ scores for Child 1, where Father or Mother have persistently high PTSD symptoms vs both Father and Mother have persistently low-level PTSD symptoms.

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Predictor variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SDQ Total difficulties*</td>
<td>One parent with persistently high PTSD vs both persistently low*</td>
<td>1.60</td>
<td>0.68</td>
<td>0.14</td>
<td>0.25</td>
<td>2.94</td>
</tr>
<tr>
<td>2. SDQ Emotional difficulties*</td>
<td>One parent with persistently high PTSD vs both persistently low**</td>
<td>0.84</td>
<td>0.26</td>
<td>0.20</td>
<td>0.34</td>
<td>1.34</td>
</tr>
<tr>
<td>3. SDQ Conduct problems*</td>
<td>No significant predictor variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. SDQ Hyperactivity problems*</td>
<td>Child age**</td>
<td>-0.79</td>
<td>0.27</td>
<td>-0.18</td>
<td>-1.32</td>
<td>-0.26</td>
</tr>
<tr>
<td>5. SDQ Peer problems*</td>
<td>Child gender*</td>
<td>0.37</td>
<td>0.18</td>
<td>0.12</td>
<td>0.01</td>
<td>0.76</td>
</tr>
<tr>
<td>6. SDQ Prosocial</td>
<td>No significant predictor variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Only statistically significant results of the second (final) step of each regression is reported for space reasons. Predictor variables included child age, child gender, and one parent with persistently high PTSD vs both persistently low.
* *p < 0.05, **p < 0.01
Table 4. Regressions predicting SDQ scores for Child 1, where both Father or Mother have persistent high PTSD symptoms vs both Father and Mother low level PTSD symptoms.

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Predictor variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SDQ Total difficulties*</td>
<td>Both parents with persistently high PTSD vs both persistently low*</td>
<td>2.37</td>
<td>0.99</td>
<td>0.22</td>
<td>0.42</td>
<td>4.33</td>
</tr>
<tr>
<td>2. SDQ Emotional difficulties*</td>
<td>Both parents with persistently high PTSD vs both persistently low**</td>
<td>1.11</td>
<td>0.36</td>
<td>0.28</td>
<td>0.39</td>
<td>1.83</td>
</tr>
<tr>
<td>3. SDQ Conduct problems*</td>
<td>No significant predictor variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. SDQ Hyperactivity problems*</td>
<td>No significant predictor variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. SDQ Peer problems*</td>
<td>Child gender*</td>
<td>0.69</td>
<td>0.26</td>
<td>0.24</td>
<td>0.18</td>
<td>1.19</td>
</tr>
<tr>
<td>6. SDQ Prosocial*</td>
<td>No significant predictor variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

\* Only statistically significant results of the second (final) step of each regression is reported for space reasons. Predictor variables included child age, child gender, and both parents with persistently high PTSD vs both persistently low.

* \( p < 0.05 \), ** \( p < 0.01 \)
Table 5. Regressions predicting SDQ scores for Child 1, where both Father and Mother have persistent high PTSD symptoms vs either Father and Mother have high level PTSD symptoms.

Only statistically significant results of the second (final) step of each regression is reported for space reasons. Predictor variables included child age, child gender, and both parents with persistently high PTSD vs only one of Father or Mother have persistently high PTSD symptoms.

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Predictor variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>Lower</th>
<th>Upper</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SDQ Total difficulties*</td>
<td>No significant predictor variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. SDQ Emotional difficulties*</td>
<td>Both parents with persistently high PTSD vs only one of Father or Mother have persistently high PTSD symptoms *</td>
<td>0.60</td>
<td>0.27</td>
<td>0.14</td>
<td>0.06</td>
<td>1.14</td>
</tr>
<tr>
<td>3. SDQ Conduct problems*</td>
<td>No significant predictor variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. SDQ Hyperactivity problems*</td>
<td>Child age**</td>
<td>-0.78</td>
<td>0.27</td>
<td>-0.18</td>
<td>-1.30</td>
<td>-0.25</td>
</tr>
<tr>
<td>5. SDQ Peer problems*</td>
<td>Child gender*</td>
<td>0.37</td>
<td>0.18</td>
<td>0.12</td>
<td>0.01</td>
<td>0.73</td>
</tr>
<tr>
<td>6. SDQ Prosocial*</td>
<td>No significant predictor variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.05, ** p < 0.01
Figure 1. Father PTSD trajectories for four-class solution (left) and Mother PTSD trajectories for two-class solution (right).