Fifty moves a year: is there an association between joint physical custody and psychosomatic problems in children?

Malin Bergström,¹ Emma Fransson,¹ Bitte Modin,¹ Marie Berlin,²,³ Per A Gustafsson,⁴ Anders Hjern¹,⁵

ABSTRACT

Background Many Western countries, an increasing number of children with separated parents have joint physical custody, that is, live equally much in their parent’s respective homes. In Sweden, joint physical custody is particularly common and concerns between 30% and 40% of the children with separated parents. It has been hypothesised that the frequent moves and lack of stability in parenting may be stressful for these children.

Methods We used data from a national classroom survey of all sixth and ninth grade students in Sweden (N=147839) to investigate the association between children’s psychosomatic problems and living arrangements. Children in joint physical custody were compared with those living only or mostly with one parent and in nuclear families. We conducted sex-specific linear regression analyses for z-transformed sum scores of psychosomatic problems and adjusted for age, country of origin as well as children’s satisfaction with material resources and relationships to parents. Clustering by school was accounted for by using a two-level random intercept model.

Results Children in joint physical custody suffered from less psychosomatic problems than those living mostly or only with one parent but reported more symptoms than those in nuclear families. Satisfaction with their material resources and parent–child relationships was associated with children’s psychosomatic health but could not explain the differences between children in the different living arrangements.

Conclusions Children with non-cohabitant parents experience more psychosomatic problems than those in nuclear families. Those in joint physical custody do however report better psychosomatic health than children living mostly or only with one parent. Longitudinal studies with information on family factors before and after the separation are needed to inform policy of children’s postseparation living arrangements.
conflict levels also before the separation.\(^4\) The rising numbers of children with JPC have concerned child clinicians as well as researchers on the subject.\(^20\) \(^21\) Child experts have worried about children’s potential feelings of alienation from living in two separate worlds,\(^20\) \(^22\) increased exposure to parental conflict,\(^12\) \(^22\) and other stressors that JPC may impose on a child.\(^22\) Such daily stressors may be long distances to school, friends and leisure activities, lack of stability in parenting and home environment and a need to adjust to the demands of two different family lives.\(^12\) \(^22\) The logistics of travelling between their homes and keeping in contact with friends has been stated as a drawback of JPC in interview studies with children.\(^23\) \(^24\) \(^25\) Older adolescents, in particular, indicated that they preferred to be in one place.\(^23\)

The worries regarding children’s well-being in JPC are enhanced by a simultaneous increase in children’s psychological and emotional complaints and psychosomatic symptoms in Scandinavia.\(^26\) \(^27\) The higher frequency of such symptoms has been interpreted as a sign of increased stress in children’s lives\(^28\) and could hypothetically also be related to stressors imposed by JPC. Already, stressful circumstances such as bullying,\(^29\) economic stress in the family,\(^29\) peer and teacher relationships,\(^30\) \(^31\) schoolwork pressure\(^31\) and lack of emotional support from the parents\(^32\) have been shown to be related to psychosomatic symptoms in Swedish adolescents. However, even if the relationship between stress, psychological symptoms and psychosomatic problems is established,\(^28\) the mechanisms of how stress exposure and recurrent pain are associated are not fully understood.\(^33\)

In this study, we wanted to investigate if the high frequencies of JPC and of psychosomatic problems in Swedish schoolchildren were related. We used a national sample of Swedish children aged 12 and 15 years to compare psychosomatic problems in children with JPC with those in nuclear families and living mostly and only with one parent. We also wanted to study the influence of two previously identified stressors: children’s parental relations and material resources, on psychosomatic problems in relation to living arrangements.

**METHODS**

**Data source**

We used data from a national classroom survey, conducted in 2009, of psychosomatic symptoms in children aged 12 (grade 6) and 15 years (grade 9). The survey was conducted by Statistics Sweden under the mandate of the Swedish National Institute of Public Health.\(^34\) We were granted permission by the Swedish National Board of Health and Welfare to use the data. For the survey, 207,700 pupils were eligible and 172,391 (83\%) agreed to participate and were present in school when the survey was conducted. Of these, we included 147,839 children who had completed the outcome instrument on psychosomatic problems and answered the questions on living arrangements, sex, age, country of birth and the items in the covariates ‘parent–child relations’ and ‘material resources’.

**Outcome measures**

We used the PsychoSomatic Problems (PSP) scale as the outcome measure. This instrument includes eight items on psychosomatic problems in schoolchildren and adolescents.\(^35\) The eight questions concern the past 6 months and ask if the respondent had difficulties (1) concentrating (2) sleeping; suffered from (3) headaches (4) stomach aches; felt (5) tense, (6) sad (7) dizzy and had (8) little appetite. The response alternatives are never, seldom, sometimes, often and always. Analyses of the dimensionality of the scale justify that the sums of scores are summarised across the items and transformed into a linear interval scale and have shown acceptable reliability and validity.\(^33\) Cronbach’s \(\alpha\) for the scale was 0.87. Scores were transformed to \(z\)-values with a mean value of 0 and an SD of 1 for the multiple linear regression analyses.\(^36\)

**Categorical variable**

Living arrangements were based on children’s answers in the survey. The family arrangements were worded as follows: nuclear family; “always together with both mother and father”, JPC; “approximately equally much with mother and father, for example one week with mother and the second week with father”, mostly with one parent; “mostly with mother, sometimes with father” or “mostly with father, sometimes with mother” and only with one parent; “only with mother” or “only with father”. We merged the gender-specific alternatives in the ‘mostly’ and ‘only’ categories since the numbers in the categories ‘mostly’ and ‘only with fathers’ were too small to allow for any meaningful statistical analyses.

**Covariates**

The covariates sex, age, children’s and parent’s country of origin were obtained from the questionnaire. Domicile was obtained from the National SIRIS database and categorised in accordance with a categorisation provided by the Swedish Association of Local Authorities and Regions. As potential mediators, we used sum scores of two subscales of subjective well-being from the KIDSCREEN-52 instrument:\(^37\) parent–child relations (six items, eg, *Have you been able talk to your parent(s) when you wanted to?*) and material resources (three items, eg, *Have you had enough money to do the same things as your friends?). These scales were completed at the same time as the PSP scale and the questions concern experiences from the previous week with response alternatives assessing either intensity (not at all-slightly-moderately-very-extremely) or frequency (never-seldom-sometimes-often-always). High scores indicate more satisfaction. This instrument has shown acceptable reliability and validity.\(^38\) Cronbach’s \(\alpha\) for the parent–child relations scale was 0.91 and for the material resources scale 0.89.

**Statistical analysis**

Linear multiple regression analyses, stratified by sex, were used to calculate \(\beta\) coefficients on \(z\)-transformed sum scores of psychosomatic problems for the four living arrangements with JPC as a reference group. In model 1, the confounders grade (6 vs 9) and country of origin (Swedish vs foreign born) are included. Model 2 includes the aforementioned confounders and continuous scores from the covariate ‘material resources scale’. In model 3, the confounders and continuous scores from the covariate ‘parents–child relations scale’ are included. Finally, Model 4 is adjusted for all the aforementioned confounders and covariates. Clustering by school was accounted for by using a two-level random intercept model.

Interaction analyses demonstrated sex differences in psychosomatic symptoms in relation to all living arrangements, and we therefore decided to perform the analysis separately for girls and boys. There were no significant interaction effects for age and JPC.
RESULTS

Descriptive statistics
As shown in table 1, 69% of the 147 839 children lived in nuclear families, 11% in JPC, 8% mostly with one parent and 13% only with one parent. The majority of those living mostly or only with one parent lived with their mother. About every sixth child in these arrangements lived with the father. Foreign born children had similar rates of separated parents as Swedish born children but JPC was more common for children with both parents born in Sweden (12%) than if one (10%) or both parents (2%) were foreign born. There were small differences in living arrangements in relation to children’s sex and domicile, but a larger proportion of the children aged 15 years lived with only one parent, compared with children aged 12 years. These differences were statistically significant at the <0.001 level.

Psychosomatic problems
As shown in table 2, children in nuclear families reported the least problems in terms of mean values on all items and total mean score. Children in JPC had slightly more problems, followed by those living mostly with one parent. Children who lived with only one parent reported most problems, in terms of mean scores, on all items. Also, the proportion of children who always or often suffered from different symptoms was highest among the latter group. These patterns were similar for girls and boys. For the sexes taken together, sleeping problems were most frequent: 22% among those living with only one parent, 19% living mostly with one parent, 14% in JPC and 13% in nuclear families (sexes taken together). Also, suffering often or always from headaches was common: 19% among those living only with one parent, 17% living mostly with one parent, 14% in JPC and 12% in nuclear families (sexes taken together).

Girls suffered from more problems than boys both when the PSP scale was analysed in terms of mean values and as a frequency of symptoms. Sadness was the most frequent problem with only one parent, 17% living mostly with one parent, 14% in JPC and 12% in nuclear families (sexes taken together). Also, suffering often or always from headaches was common: 19% among those living with only one parent, 17% living mostly with one parent, 14% in JPC and 12% in nuclear families (sexes taken together).

Girls suffered from more problems than boys both when the PSP scale was analysed in terms of mean values and as a frequency of symptoms. Sadness was the most frequent problem with only one parent, compared with children aged 12 years. The differences were statistically significant at the <0.001 level.

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**Table 1** Characteristics of children by family type

<table>
<thead>
<tr>
<th></th>
<th>Intact family</th>
<th>Joint physical custody</th>
<th>Mostly one parent</th>
<th>Only one parent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N Per cent</td>
<td>n Per cent</td>
<td>n Per cent</td>
<td>n Per cent</td>
</tr>
<tr>
<td>Sample size</td>
<td>101 738 69</td>
<td>15 633 11</td>
<td>11 468 8</td>
<td>19 000 13</td>
</tr>
<tr>
<td>Girls</td>
<td>51 003 68</td>
<td>7610 10</td>
<td>5916 8</td>
<td>10 216 14</td>
</tr>
<tr>
<td>Boys</td>
<td>50 735 69</td>
<td>8023 11</td>
<td>5552 8</td>
<td>8 784 12</td>
</tr>
<tr>
<td>Resident parent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mother</td>
<td>4955 82</td>
<td></td>
<td>15 889 84</td>
<td></td>
</tr>
<tr>
<td>Father</td>
<td>2013 18</td>
<td>3111 16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>48 348 71</td>
<td>7655 11</td>
<td>4984 7</td>
<td>6 855 10</td>
</tr>
<tr>
<td>15</td>
<td>53 390 67</td>
<td>7978 10</td>
<td>6484 8</td>
<td>12 145 15</td>
</tr>
<tr>
<td>Location</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large city</td>
<td>31 224 68</td>
<td>5662 12</td>
<td>3167 7</td>
<td>6 021 13</td>
</tr>
<tr>
<td>Small town</td>
<td>49 470 69</td>
<td>7663 11</td>
<td>5798 8</td>
<td>9 054 13</td>
</tr>
<tr>
<td>Rural</td>
<td>20 938 70</td>
<td>2696 9</td>
<td>2495 8</td>
<td>3 941 13</td>
</tr>
<tr>
<td>Children’s national origin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Swedish</td>
<td>93 908 69</td>
<td>15 319 11</td>
<td>10 982 8</td>
<td>16 507 12</td>
</tr>
<tr>
<td>Other</td>
<td>7830 70</td>
<td>314 3</td>
<td>486 4</td>
<td>2 493 22</td>
</tr>
<tr>
<td>Parents’ national origin</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Both Swedish</td>
<td>75 384 70</td>
<td>13 220 12</td>
<td>8787 8</td>
<td>10 689 10</td>
</tr>
<tr>
<td>One Swedish</td>
<td>9557 58</td>
<td>1782 10</td>
<td>1669 10</td>
<td>3 829 22</td>
</tr>
<tr>
<td>Neither Swedish</td>
<td>15 684 74</td>
<td>489 2</td>
<td>902 4</td>
<td>4 098 19</td>
</tr>
</tbody>
</table>

DISCUSSION

In this cross-sectional study, based on a national survey of nearly 150 000 Swedish children aged 12 and 15 years, children who live equally much with both parents after a parental separation suffered from less psychosomatic problems than those living mostly or only with one parent. Children in JPC, however, reported more psychosomatic problems than those in nuclear families, as did the children in the two other postseparation living arrangements. Our results show that children’s satisfaction with their material resources and parent-child relationships affects children’s psychosomatic health but cannot explain the differences between children in the different living arrangements.
Girls reported more psychosomatic problems than did boys while there were no age-related differences.

The pattern that children in JPC are in an intermediate position between children in nuclear families, having the least, and those in single care, having the most problems, is consistent with previous findings from our group as well as other research groups. This pattern has been established in relation to outcomes such as satisfaction with life,18 risk behaviour,15 39 parent–child relationships,11 school achievement,19 well-being13 and mental health.16

Table 2  Frequency of psychosomatic problems by gender and family type

<table>
<thead>
<tr>
<th>Psychosomatic problems</th>
<th>Nuclear family</th>
<th>Joint physical custody</th>
<th>Mostly with one parent</th>
<th>Only with one parent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Z/mean</td>
<td>Always/often</td>
<td>Z/mean</td>
<td>Always/often</td>
</tr>
<tr>
<td>Girls N=74 745</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total score</td>
<td>0.14</td>
<td>NA</td>
<td>0.33</td>
<td>NA</td>
</tr>
<tr>
<td>Concentration</td>
<td>0.02</td>
<td>11</td>
<td>0.14</td>
<td>13</td>
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<tr>
<td>Sleeping</td>
<td>0.06</td>
<td>16</td>
<td>0.17</td>
<td>18</td>
</tr>
<tr>
<td>Headaches</td>
<td>0.13</td>
<td>16</td>
<td>0.23</td>
<td>18</td>
</tr>
<tr>
<td>Stomach aches</td>
<td>0.17</td>
<td>12</td>
<td>0.30</td>
<td>14</td>
</tr>
<tr>
<td>Tense</td>
<td>0.12</td>
<td>13</td>
<td>0.23</td>
<td>15</td>
</tr>
<tr>
<td>Little appetite</td>
<td>0.11</td>
<td>11</td>
<td>0.24</td>
<td>13</td>
</tr>
<tr>
<td>Sad</td>
<td>0.23</td>
<td>16</td>
<td>0.42</td>
<td>22</td>
</tr>
<tr>
<td>Dizzy</td>
<td>0.06</td>
<td>11</td>
<td>0.18</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boys n=72 094</td>
<td>−0.33</td>
<td>NA</td>
<td>−0.21</td>
<td>NA</td>
</tr>
<tr>
<td>Total score</td>
<td>−0.16</td>
<td>9</td>
<td>−0.04</td>
<td>10</td>
</tr>
<tr>
<td>Concentration</td>
<td>−0.18</td>
<td>10</td>
<td>−0.11</td>
<td>11</td>
</tr>
<tr>
<td>Sleeping</td>
<td>−0.25</td>
<td>8</td>
<td>−0.16</td>
<td>9</td>
</tr>
<tr>
<td>Headaches</td>
<td>−0.29</td>
<td>5</td>
<td>−0.22</td>
<td>5</td>
</tr>
<tr>
<td>Stomach aches</td>
<td>−0.22</td>
<td>6</td>
<td>−0.16</td>
<td>7</td>
</tr>
<tr>
<td>Tense</td>
<td>−0.23</td>
<td>5</td>
<td>−0.17</td>
<td>6</td>
</tr>
<tr>
<td>Little appetite</td>
<td>−0.38</td>
<td>5</td>
<td>−0.30</td>
<td>6</td>
</tr>
<tr>
<td>Sad</td>
<td>−0.19</td>
<td>6</td>
<td>−0.11</td>
<td>7</td>
</tr>
</tbody>
</table>

NA, not available.

Psychosomatic symptoms are related to stress,28 but despite the fact that two homes require adaptation to different neighbourhoods and family climates, our results show lower risks for psychosomatic symptoms for children in JPC than in single care residency. This result confirms findings from more previous small-scale studies. For example, Turunen40 as well as Carlsund et al14 found lower risks of stress in JPC than in single residency after controlling for family and child characteristics as well as parent–child relationships. Also, an American study showed that children in JPC had fewer stress-related illnesses and health problems than those living only with their mothers.1 Taken together, this indicates that the potential stress from living in two homes could be outweighed by the positive effects of close contact with both parents. Although children in interviews have brought up hassles of JPC,23–25 most children also state that close relationships with both their parents are more important.23 41

It is, however, possible that the difference in psychosomatic health between children in nuclear families and JPC may, at least partly, be explained by family factors associated with the parents’ separation or divorce. Separated parents more often have psychological problems and poor economy than co-living parents and may have had relationship problems and conflicts also before the separation.4 42 Such factors directly affect children’s psychological health and symptom load43 and could be important for how families arrange custody and children’s housing after the split-up.1 9 In this study, children living with only one parent reported the least satisfaction with their relationships to their parents, followed by those living mostly with one parent. Children with JPC were slightly less satisfied with their parent relations than those in nuclear families. This pattern is in line with previous publications on children’s parental relations in different living arrangements.4 42

Adding indicators of parent–child relationships and material resources to models 2–4 in the regression analyses lowered the
associations between psychosomatic problems and living arrangements considerably. These findings are consistent with previous studies that have demonstrated a mediating effect of parent–child relationships and material resources on the relationship between psychosomatic health and living arrangements. Positive relationships to parents have been found to be more common in children in JPC than in single care, in particular to the fathers. Children’s satisfaction with their material resources was included as a potential mediator since economic stress has previously been shown to be associated with psychosomatic symptoms in children and is more common among children with separated parents. Also, these conditions reduced the differences in psychosomatic health between the living arrangements.

Girls in JPC reported more psychosomatic problems than boys, as did girls living mostly or only with one parent. The pattern of psychosomatic problems in relation to living arrangements was, however, similar for both sexes. Since girls generally report more psychosomatic ill health than boys, the sex differences in relation to living arrangements may possibly be explained by our outcome variable rather than an actual worse situation for girls after a parental separation. Earlier studies have reached varying results regarding gender differences after parental separations. In a previous study, we found no differences for boys and girls on the effects of JPC on well-being. Further studies are thus needed to reveal if JPC and other postseparation arrangements have a different impact on boys and girls.

Methodological issues
We had the advantage of using a national survey with a validated outcome measure on psychosomatic problems. The large sample size allows us to draw conclusions on the entire population of Swedish children aged 12 and 15 years. This is a considerable strength since previous studies have had high rates of attrition or suffered from small sample sizes, preventing, for example, comparisons between JPC and single care.

The national sample also ensures inclusion of families with different background characteristics. In her reviews, Nielsen argues that JPC families today have less social, economic and relationship advantages compared with single care families, but there is still a risk that families with different postseparation arrangements differ in ways that affect children’s psychosomatic health. In Sweden, it is estimated that around 14% of separating parents have conflicts regarding custody and children’s housing and about 2% have their custody disputes resolved in court.

Despite the strength on a total population sample, our data are limited regarding contextual variables that may affect children’s health. We included measures on children’s material resources and parent relationships but lack other types of information on the families’ socioeconomic situation and the level of parents’ cooperation or conflict. Children’s reports of satisfaction with these aspects may possibly reflect their own personalities and coping strategies rather than the actual strain on the family. The lack of objective data on the families’ situations is an important limitation since such factors are associated both with children’s living arrangements and directly with their psychosomatic health.

Another limitation is the lack of information on when the children had experienced the parental separation. Ideally, the results of this study should be confirmed by studies with a longitudinal design and access to information on psychological as well as socioeconomic family factors.

Finally, we consider our categorisation of JPC as a strength. In the survey, the alternative JPC was worded “approximately equally much with mother and father, for example one week with mother and the second week with father”, which indicates that the JPC category actually includes children who spend 50% of their time with each of the parents. Nearly 8% of the participants choose the category “living mostly with one parent”, which implies that children’s actual housing after a parental separation is not entirely black or white with respect to everyday contact with the parents. Our categorisation thus gives a more nuanced picture than studies where only the single care and JPC categories are included, where JPC includes children living 30% or less with one parent or where the JPC category even includes families with joint legal custody but primary residency with one parent.

Implications
Children who share their time between the parent’s respective homes after a separation experience less psychosomatic problems than those living mostly or only with one parent. Their satisfaction with their material resources and parent–child relationships is important for their psychosomatic health but cannot explain the differences between children in different living arrangements. Longitudinal studies with information on family factors before and after the separation are needed to inform policy of children’s postseparation living arrangements.

What is already known on this subject?
The practice of joint physical custody, that is, children spending equal time in the respective homes of their separated parents, has become more frequent in Western countries over the past decade. At the same time, there has been an increase in self-reported paediatric psychosomatic symptoms. Child health experts have argued that joint physical custody imposes stress on children.

What this study adds?
In a Swedish national sample of children aged 12 and 15 years, we found that children in joint physical custody suffered from less psychosomatic problems than those living mostly or only with one parent but reported more symptoms than did those in nuclear families.

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Contributors
MB conceived the study, participated in the design and drafted the manuscript. BM provided expertise regarding the data source, interpretation of the data and the statistical analysis. EF participated in the design of the study and interpretation of the data. MB provided expertise regarding demography and the data source and participated in the interpretation of the data. PAG provided expertise regarding child psychiatry and participated in the interpretation of the data. AH participated in the design of the study, provided expertise regarding the data source, performed the statistical analyses and interpretation of the data and helped to draft the manuscript. All authors read and approved the final manuscript.

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None.

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Research report

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