Psychological complaints among children in joint physical custody and other family types: Considering parental factors

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Abstract
Aims: Increasing proportions of Scandinavian children and children in other Western countries live in joint physical custody, moving between parents’ homes when parents live apart. Children and parents in non-intact families are at risk of worse mental health. The potential influence of parental ill-health on child well-being in the context of differing living arrangements has not been studied thoroughly. This study investigates the psychological complaints of children in joint physical custody in comparison to children in sole parental care and nuclear families, while controlling for socioeconomic differences and parental ill-health. Methods: Data were obtained from Statistics Sweden’s yearly Survey of Living Conditions 2007–2011 and child supplements with children 10–18 years, living in households of adult participants. Children in joint physical custody (n=391) were compared with children in sole parental care (n=654) and children in nuclear families (n=3,639), using a scale of psychological complaints as the outcome measure. Results: Multiple regression modelling showed that children in joint physical custody did not report higher levels of psychological complaints than those in nuclear families, while children in sole parental care reported elevated levels of complaints compared with those in joint physical custody. Adding socioeconomic variables and parental ill-health only marginally attenuated the coefficients for the living arrangement groups. Low parental education and parental worry/anxiety were however associated with higher levels of psychological complaints. Conclusions: Psychological complaints were lower among adolescents in joint physical custody than in adolescents in sole parental care. The difference was not explained by parental ill-health or socioeconomic variables.

Key Words: Divorce, child custody, mental health, socioeconomic factors, shared residence, parenting, family types

Introduction
Parental split-up due to divorce or cohabitation dissolution is common in Scandinavian countries and in other Western countries. In Sweden, more than 30% of older adolescents have experienced parental dissolution [1]. Negative effects of parental separation on child well-being have been well documented. In general, children with divorced parents face increased risks of social maladjustment and ill-health compared with those in intact families [2–4]. Factors such as parental conflict [5] and loss of economic resources [6] are suggested to contribute to the lower well-being of children whose parents live apart. However, children’s living arrangements after separation could also impact on their well-being.

Previously, parental split-up has often implicated that children lose contact with one parent, most often the father [7]. Although this might still be the case for numerous children, increasing numbers of fathers are keeping contact with and responsibility for children when living apart from the mother. The reasons for
fathers' increased involvement in post-divorce child rearing may possibly be increased gender equity in the parental roles, rise of women in paid employment and alterations in the family law systems [8]. Sweden has had a long tradition of family policy and family law that implies a symmetrical family model with both mothers and fathers engaging in paid work as well as in child rearing. Accordingly, Swedish parents most often continue to share the legal custody of the children also after a divorce [9]. The physical custody, i.e. with whom the child lives after family split-up, has traditionally been with the mother, as in most countries [8, 9]. However, during the last 30 years joint physical custody where children alter their residence between the parents' homes has largely increased to concern the majority of children of separated parents in Sweden in 2010 [1]. Furthermore, Swedish children who live with only one parent, still have frequent contact with the other parent [10].

Previous Swedish studies that have investigated the health and well-being of school children and adolescents in joint physical custody have shown conflicting results regarding the difference in health outcomes between adolescents in joint physical custody and in nuclear families, most have reported the best health outcomes being in the nuclear group [10–14]. More interesting, a few studies found differences in well-being and psychosomatic health complaints between joint physical custody and adolescents living with only one parent, with better outcomes for those in joint physical custody [10,11,14]. The differences in health between adolescents in joint physical custody and in sole parental care might be partly explained by structural socioeconomic differences as parents practicing joint physical custody have been described to have a more favourable socioeconomic situation than parents with sole parental care [15]. Joint physical custody has been suggested as more common among relatively well-educated parents [15], and parental couples with good communication and few conflicts are suggested to more often end up with joint physical custody than sole custody [16]. However, many previous studies on child outcomes in different living arrangements have failed to adjust for socioeconomic factors. Although one longitudinal study indicates that the socioeconomic differences between parents with joint physical custody and sole parental care become less as joint physical custody becomes more common [17], recent research still suggests that parental health and well-being could differ between parents with joint and sole care [12].

Losing contact with children or becoming a sole parent both seem to increase the risk for ill-health in adults after divorce [18,19]. Research on how family dissolution impacts on adults has also focused on positive outcomes, such as female emancipation or the end of abusive or aggressive relationships [7]. Furthermore, parents who split up could differ initially from parents who stay together, as suggested in social selection theory [20]. While parents in general have mainly a positive influence on their children's development [21], both maternal and paternal mental ill-health is associated with an increased risk of emotional, behavioural and cognitive problems in children [22]. Children whose parents suffer from mental ill-health could inherit a vulnerable disposition or suffer from exposure to negative affect and behaviours as well as to increased stress [23]. In sum, children are shown to be vulnerable to parental dissolution as well as to parental ill-health; however, the influence of parental ill-health and well-being on child mental health in the context of differing living arrangements has not been studied thoroughly. Therefore, the aim of this study was to investigate children's psychological complaints in joint physical custody in comparison to children in sole parental care and in nuclear families while controlling for socioeconomic differences as well as for differences in parental ill-health.

Methods

Data were obtained from Statistics Sweden’s yearly Survey of Living Conditions (ULF), collected in the years 2007–2011. The participants in the ULF survey are selected using a stratified, independent random sample of adult individuals from the Swedish Total Population Register. The survey includes child supplements with data from 5280 children aged 10–18 years, living at least half the time in the households of adult participants. The rate of non-responding children was between 26–37.2% during the years 2007–2011. For the purpose of this study, selected data from the children and one of the parents was used. The analytic sample consists of 4684 participants. The study was approved by the local Research and Ethics Committee in Stockholm, Sweden (Dnr 2012/1184–31/5).

Variables

Living arrangements and socio demographics. The categories were based on parents’ answers in the survey about the child’s residency. If the child lived less than half the time with the adult participant, the child was not included in the survey. For included children, the parental question regarding residency was ‘Does the child live with you all the time or part of the time’ with the response alternatives ‘all or nearly all the time’ or ‘part of the time’. If the parent answered
‘part of the time’, new response alternatives were ‘half the time’ "joint physical custody’’ or ‘more than half of the time’. The categories used in the analyses are Nuclear family: children who live in one home with both their parents; ‘half the time "joint physical custody’’”: children who live approximately half the time in each parent’s home; and Only with one parent: children who live only in one home with their mother or their father. For the purpose of this study children living more than half of the time \( (n=84) \) were excluded as well as adopted children \( (n=40) \), children in foster care \( (n=12) \) children with unknown parental care \( (n=17) \) participants with missing data \( (n=131) \) and with a step-parent as the answering adult \( (n=312) \).

The parents’ national origin was obtained from the Register of the Total Population and coded as Swedish background or non-Swedish background, with the latter group being born outside Sweden or having two non-Swedish parents.

Children’s psychological complaints. An index based on questions regarding internalizing/emotional as well as externalizing/behavioral symptoms was used as the outcome measure. The measure was expected to capture ill-health in both girls and boys [24]. Participating children were asked to judge the following statements regarding psychological symptoms: ‘I am often tense and nervous’, ‘I have a hard time being still and concentrating’, ‘I often feel sad or down’, ‘I get angry very easily’, ‘I am often grouchy or irritated’. The response alternatives (1–4) were Matches Exactly/Roughly/Poorly/Not at all.

Socioeconomic variables. Data on socioeconomics were derived from the adult ULF survey. Parental level of education was divided in three categories where low level of education equals any level less than 3 years of senior high school. Medium level of education equals 3 years of high school but less than 3 years of graduate school. High level of education equals at least three years of graduate school.

A low-income index, calculated by Statistics Sweden was used, showing if the household’s disposable income was below the national welfare payment standard.

Parents were also asked to state if they had a cohabiting partner, and the information was used for separate comparisons on the non-nuclear groups.

Parental ill-health. In the adult ULF survey, parents were asked ‘Are you bothered by worry or anxiety?’ with the response options no/yes, somewhat bothered/yes, very bothered. For the analyses, the variable was categorized as bothered (somewhat bothered/yes, very bothered)/not bothered.

Parents were also asked to rate their self-rated health, a well-used single item question, shown to be an independent predictor of future mortality [25]: How would you rate your overall health? Is it very good/good/fairly well/bad/ very bad? The answers were coded as good/less than good.

Statistical analyses

A principal component analysis was performed to extract the psychological complaints scale using SPSS 22. An examination of the factor loadings after Varimax rotation showed a negative symptoms factor including the five items in the outcome measure. A scale based on the five questions was computed using the Alpha command in Stata 13 and used as the outcome measure with a range of 1–4 (Cronbach’s alpha = .66). (Cronbach alpha for boys=.64; girls=.67).

Multiple regressions were computed in steps with psychological complaints as the outcome and living arrangement as the exposure variable. In order to enable comparisons between the joint physical custody group and the other groups, joint physical custody was chosen as the reference category. Model 1 adjusts for child demographic variables (gender, age and national origin). Model 2 also adjusts for socioeconomic factors (the responding parent’s level of education and low household economy). In model 3, parental health variables (the responding parent’s worry/anxiety and self-rated health) were included while also controlling for this parent’s gender as well as the variables from model 1. In model 4, all the above listed variables were included. All models were adjusted for survey year 2007–2011 and family clustering, i.e. that some observations come from siblings living in the same household. The number of independent observations was 3333.

Separate analyses were conducted for the post separation living arrangement groups with regard to the presence of a step parent in the household or not.

The interaction term child’s gender × living arrangements was tested but non-significant. Thus, we decided to use gender as a covariate in the analyses and not perform gender specific analyses.

Results

Of the included children, 391 children were in joint physical custody, 3639 in nuclear families and 654 lived only with one parent (111 in father care and 543 in mother care). Table I shows the proportions of children with different background characteristics and socioeconomics in relation to living arrangements. The composition of children in joint physical custody is similar to that of children in nuclear
families, although a somewhat higher share had a Swedish background. The composition of children in sole parental care deviates from the other groups both regarding a higher age and a more disadvantaged socioeconomic situation. Furthermore, in the sole care group 44% of the children had a step-parent and as for the joint physical custody group 42% of the children had a step-parent in the answering parent’s household (not shown in the table). Table II shows parental health variables in relation to child living arrangements.

The total mean of the outcome measure was 1.87 and the standard deviation (SD) was .56. The cut-off for the highest quintile was 2.4. The mean for the joint physical custody group was 1.85, SD=.54. The mean for the sole group was 1.99, SD=.62 whereas the mean for the nuclear group was 1.85, SD=.54 (data not presented in table).

Table III presents proportions of participants reporting psychological symptoms in the highest quintile with regard to background variables and covariates. Adolescents in sole parental care most often reported high psychological complaints in terms of proportions in the highest quintile (28.4 %), whereas adolescents in joint physical custody and in nuclear families were comparable with lower proportions (20.2% and 18.9% respectively).

Table IV summarizes the measures for the multiple regression modelling. It shows that children in joint physical custody did not report more psychological complaints, compared with children in nuclear families. Children in sole parental care had higher levels of psychological complaints, compared with children in joint physical custody. Adding socioeconomic variables (model 2), parental ill-health (model 3) or all together (model 4) did hardly affect the coefficients for the living arrangement groups. In all models, girls had higher levels of psychological complaints compared with boys, and older adolescents had higher levels compared with younger. Low parental education and parental worry/anxiety were associated with more psychological complaints for children. $R^2$ for the final model was .03. The calculated effect size (Cohen’s $d$) for the difference between joint physical custody and sole parental care = .24.

Separate regression modelling was conducted with the joint physical custody and sole parental care groups ($n=1045$) when adjusting for having a step-parent in

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**Table I.** Descriptive data for participating children in different living arrangements, $N=4684$.

| Background                     | Nuclear, $n=3639$ | Joint physical custody, $n=391$ | Only with one parent, $n=654$ |
|-------------------------------|-------------------|-------------------------------|-----------------------------|
| **Gender**                    |                   |                               |                             |
| Girls                         | 50.9              | 46.5                          | 53.5                        |
| Boys                          | 49.1              | 53.5                          | 46.5                        |
| **Age**                       |                   |                               |                             |
| 10–12                         | 32.8              | 31.7                          | 21.7                        |
| 13–15                         | 34.7              | 37.6                          | 32.3                        |
| 16–18                         | 32.5              | 30.7                          | 46.0                        |
| **National origin**           |                   |                               |                             |
| Swedish                       | 82.4              | 89.8                          | 81.2                        |
| Other                         | 17.6              | 10.2                          | 18.8                        |
| **Socioeconomics**            |                   |                               |                             |
| *Parent’s level of education* |                   |                               |                             |
| High                          | 26.6              | 23.0                          | 17.9                        |
| Medium                        | 34.4              | 37.3                          | 36.1                        |
| Low                           | 39.0              | 39.6                          | 46.0                        |
| **Household economy**         |                   |                               |                             |
| Above low level               | 84.3              | 82.6                          | 78.4                        |
| Low level                     | 15.7              | 17.4                          | 21.6                        |

**Table II.** Proportions of children in different living arrangement groups with mothers or fathers reporting worry/anxiety and self-rated health less than good.

| Parental health                | Nuclear | Joint physical custody | Only with one parent |
|-------------------------------|---------|------------------------|----------------------|
| Suffering from worry/anxiety (%) | 19.9    | 10.0       | 39.0     | 30.9     |
| Self-rated health, less than good (%) | 15.1    | 11.2       | 18.0     | 23.0     |

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Psychological complaints in joint physical custody children

The proportions of parents suffering from worry were higher in both the non-intact family groups. A similar tendency was found also regarding self-rated health among mothers. As parental ill-health is known to be a risk factor for ill-health in children, child outcomes could have been expected to be worse in both post separation groups. However, such an assumption was not confirmed. Only, children and youth in sole parental care report higher level of complaints than the joint physical custody group, in line with previous findings [10,11,14]. The excess reporting in the sole group was however not explained by parental health.

The differences between the groups were rather stable across the statistical models in this study, indicating that the difference is explained through factors not included here. One hypothesis is that joint physical custody implies moderating factors for psychological ill-health in youth of parents living apart, such as a buffering effect from having regular contact with both parents and a larger social network. Children in joint physical custody have previously been shown to be more prone to turn to both their parents when needing emotional support than children in other living arrangements with parents living apart [14]. Furthermore, living with one parent suffering from anxiety might be moderated through having a parent with higher well-being half of the time; however, we lacked information on ill-health regarding “the other parent” in post-separation living arrangements.

Sodermans et al. [17] suggested that when joint physical custody becomes more common, the families with joint physical custody are also becoming more diverse regarding socioeconomic status. In the current study, parents with sole care were more disadvantaged than the other groups. In speculation, when joint physical custody becomes more frequent, the children in sole parental care might also become an even more marginalized group. In the Swedish context, where joint physical custody is about to become the norm after parental dissolution [1], children in sole parental care could potentially be in sole care mainly due to negative reasons, such as physical or mental ill-health in ‘the other’ parent or other poor social circumstances, associated with further increased risk of poor health outcomes. Similar to the theory about a selection effect of who is divorcing or not [26], there could be a stronger selection effect of which children end up in joint physical custody or in sole parental care. In our study, we found no effect of having two adults in the non-nuclear households. Such effects have been reported previously, however, both positive and negative [27].
Although we find a significant association between living arrangements and psychological complaints, the living arrangements only explain a small share of children’s psychological health. Furthermore the effect size of this association is not strong. Using Cohen’s [28] rule of thumb the found effect size would be considered weak. Amato [29] has however argued for using a different definition for survey based results than the experimental study designs that Cohen originally based his rule on. Using Amato’s definition a $d$ of .24 would be regarded as a moderate effect size.

A strength of the study was the possibility to include information provided by both children and parents in the analyses. One limitation was that we lacked a validated measure of parental worry/anxiety and that we instead used the single item. However, this single item measure was associated with the child outcome in all models. Also the self-rated-health item is widely used and has shown to predict long-term health and ill-health [25]. However, the lack of information regarding time point for parental separations as well as data on how long the child had been in joint physical custody or sole parental care is a drawback and limits the interpretation on mechanisms. In addition, since most information on adults regards only the answering parent this rules out the investigation of the relative impact from each parent. Future studies should preferably include longitudinal data with detailed information on both parents to elucidate the relationship between ill-health and living arrangement for children whose parents live apart.

### Conclusions

More children in non-intact families have parents who suffer from worry/anxiety. Multiple regressions of psychological complaints in children, however, did
not show higher levels of complaints in children in joint physical custody compared with those in nuclear families while children in sole parental care showed higher levels of psychological complaints. The differences between joint physical custody and sole parental care was not explained by socioeconomic factors or by parental ill-health. Thus, the results suggest that joint physical custody might counteract the potential negative effects of parental separation.

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Conflict of interest

The Authors declare that there is no conflict of interest.

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