

Development and Aging

Mental health in Swedish children living in joint physical custody and their parents' life satisfaction: A cross-sectional study

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Bergström, M., Fransson, E., Hjern, A., Köhler, L. & Wallby, T. (2014). Mental health in Swedish children living in joint physical custody and their parents' life satisfaction: A cross-sectional study. *Scandinavian Journal of Psychology* 55, 433–439.

This study compared the psychological symptoms of 129 children in joint physical custody with children in single care and nuclear families, using a nationally representative 2011 survey of 1,297 Swedish children aged between four and 18 years. The outcome measure was the Strengths and Difficulties Questionnaire (SDQ) and its association with three dimensions of parental life satisfaction was investigated. Linear regression analyses showed higher SDQ-scores for children in joint physical custody ($B = 1.4$, $p < 0.001$) and single care ($B = 2.2$, $p < 0.001$) than in nuclear families, after adjustment for socio-demographic variables. The estimates decreased to 1.1 and 1.3, respectively, after being adjusted for parental life satisfaction ($p < 0.01$). Our findings confirm previous research that showed lower symptom scores for children in nuclear families than children in single care and joint physical custody. Parental life satisfaction should be investigated further as a possible explanation of differences in symptom load between children in different living arrangements.

Key words: Joint physical custody, parental wellbeing, children's psychological symptoms, SDQ, divorce.

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INTRODUCTION

Children in joint physical custody spend substantial periods of time in each parent's home after a parental separation. This practice has increased dramatically in Sweden during the last 20 years. In the mid-1980s about 2% of children with separated parents lived in joint physical custody, but by 2010 this figure had risen to between 30 and 40% (Swedish Government Official Report, 2011). Because joint physical custody is more common among recently separated parents than among those who parted more than five years ago, the frequency of joint physical custody can be expected to rise even further (Swedish Government Official Report, 2011). During the 21st century, joint physical custody has also become more frequent in countries such as Denmark, Belgium, the Netherlands and in some US states (Melli & Brown, 2008; Matthijs & Swicegood, 2013; Ottosen, 2004; Sodermans, Spruijt & Duindam, 2010).

The increase in joint physical custody has been attributed to greater gender equality in parenthood, which in turn is related to increased female participation in the labour force (Juby, Bourdais & Gratton, 2005). Changes to Swedish family law legislation in 1998 may have contributed to increases in joint physical custody (Swedish Government Offices, 1999) and the frequency has increased substantially in countries like Belgium (Sodermans *et al.*, 2013) and Australia (Kaspiew, Gray, Weston, Moloney, Hand & Lixia, 2011) following legislative changes. Greater public awareness of the importance of the father's role in children's development and social adjustment may also have contributed. Several surveys conducted in North America have shown that, in general, people now favor shared custody and

joint physical custody (Braver, Ellman, Votruba & Fabricius, 2011; Fatherhood Coalition, 2004).

Earlier international studies described more favorable socio-economic characteristics for families with joint physical custody, compared with single care parents, such as better educated fathers (Bakker & Mulder, 2013; Sodermans *et al.*, 2013). Recent Swedish data show that joint physical custody is less common among families of migrant origin (Bergström, Modin, Fransson *et al.*, 2013) and those in the lowest income category (Swedish Government Official Report, 2011), but equally common in the vast middle income category and those with high incomes (Swedish Government Official Report, 2011). As joint physical custody is now more common, it includes families with heterogeneous backgrounds, conditions and levels of parental conflict and cooperation (Juby *et al.*, 2005; Melli & Brown, 2008; Nielsen, 2011a; Sodermans *et al.*, 2013).

Studies on children's wellbeing and mental health in relation to living arrangements need to consider the influence of other family characteristics. Factors such as parental conflict or affluence, before and after separation, affect children regardless of living arrangement (Jekielek, 1998; Nielsen, 2011a). Overall, children with divorced parents face an increased risk of emotional problems, social maladjustment and low wellbeing compared to those in intact families (Ångarne-Lindberg & Wadsby, 2009; Bjarnason, Bendtsen, Amarsson *et al.*, 2012; Breivik & Olweus, 2006; Naevdal & Thuen, 2004; Sourander, Niemela, Santalahti, Helenius & Piha, 2008). These risks may be attributed to the children's loss of material resources (Lansford, 2009), as well as the loss of parental support, supervision and engagement (Kelly & Emery, 2003; Lansford, 2009). Being a

mother with sole custody, or a father with no custody, is also associated with a greater risk of negative mental and physical health (Melli & Brown, 2008). Parental ill-health in turn, could impact negatively on child development and well-being (Goodman & Gotlib, 1999; Ramchandani, Stein, Evans, O'Connor & Team, 2005).

The growing body of research on the links between children's mental health and living arrangements after parental separation has shown lower risks for children in joint physical custody than children in single care arrangements (Nielsen, 2013). These include lower risks of fear, aggression or depression (Spruijt & Duindam, 2010), behavioral problems and risk behaviors (Carlsund, Eriksson, Löfstedt & Sellström, 2013; Jablonska & Lindberg, 2007). One of the suggested benefits of joint physical custody is the frequent involvement of both parents which is required for developing a close and nurturing relationship. Father involvement has been shown to predict positive behavioral outcomes in children (Sarkadi, Kristiansson, Oberklaid & Bremberg, 2008). However, research on non-residential parents and child outcomes also suggest that parental conflict could be of greater importance than frequency of contact (Modecki, Hagan, Sandler & Wolchik, 2014).

In a previous study that looked at all 12 and 15-year-olds in Sweden, we found that adolescents in non-nuclear families reported lower levels of wellbeing than those living in intact families and that adolescents in joint physical custody reported greater wellbeing than those living mostly, or only, with one parent (Bergström *et al.*, 2013). However, one restriction in this study was our inability to control for socioeconomic differences between the families. This is a limitation, because such factors have been demonstrated to be important for differences in wellbeing in children in different living arrangements. For example, in a study of life satisfaction in children from 36 countries, Bjarnason *et al.* (2012) found that differences between children in different living arrangements were much smaller after adjusting for socioeconomic variables.

Child factors, such as age and gender, may also affect how children fare in joint physical custody. Previous studies have indicated that boys may be at increased risk for lower mental health after parental divorce (Malone, Lansford, Castellino *et al.*, 2004; Spruijt & Duindam, 2005) while other studies indicate more negative experiences in girls, either from losing a father figure (Nielsen, 2011b) or from being in father custody (Naevdal & Thuen, 2004). Also age differences are indicated, with early experiences of separation being more negatively related to trajectories of internalizing and externalizing problems than experience of a parental separation at a higher age (Lansford, Malone, Castellino, Dodge, Pettit & Bates, 2006). Despite this, few studies include children under the age of 10 years or they suffer from small sample sizes (Bauserman, 2002). This is problematic, as in Sweden this living arrangement is most frequent among six to 12-year-olds (Swedish Government Official Report, 2011). Furthermore, the greatest debates about joint physical custody concern the youngest age groups. In our study of the total Swedish population, we found that the 15-year-olds in joint physical custody experienced more subjective wellbeing than the 12-year-olds. In contrast, we found no gender differences when it came to living arrangements or wellbeing (Bergström *et al.*, 2013).

Our review of the existing literature shows that children's psychological symptoms and wellbeing have not been extensively studied in joint physical custody and other post separation living arrangements. In particular, studies using validated instruments and including young children are warranted. A further understanding of how parental and family factors affect children's mental health in different living arrangements is also required.

This study investigated the mental health of children in joint physical custody, comparing them with children in nuclear families and in single care. It also took the family's financial situation and the parents' satisfaction with their own health, economic and social situation into account.

METHODS

A random sample of 3,200 families with children aged two to 17-years-of-age was drawn from the Swedish Register of Total Population and these families were invited to participate in the Swedish part of the NordChild 2011 cross-sectional population survey, answering questions on their children's health and welfare. After two reminders, the response rate was 45.7% ($n = 1,461$). The parent who was most familiar with the child's situation was asked to complete the questionnaire with their child. In most cases this was the mother. The child's father completed the survey in 9% of the single care families and about 20% of the joint physical custody and nuclear families. Because the primary outcome measure, the Strengths and Difficulties Questionnaire (see below), has only been validated for children from the age of four, children younger than this ($n = 164$) were excluded and the final study population consisted of 1,297 children.

Outcome variables

The survey included the Swedish version of the Strengths and Difficulties Questionnaire (SDQ), (Malmberg, Rydell & Smedje, 2003), which is designed to be completed by parents or teachers on children aged four and older. This widely used screening instrument measures psychosocial problems in children and covers both problem behaviors and competencies, including measurement of emotional symptoms, conduct problems, hyperactivity/inattention and peer relationship problems as well as prosocial behaviors. The main outcome measure in the present study was the sum of scores from the Emotional, Conduct, Hyperactivity and Peer Contact subscales respectively, which range between between 0 and 10, plus the total scores from the four subscales, which range from 0 and 40. It has been found more reliable to use and interpret the SDQ total score than to interpret the subscales separately (Stone, Otten, Engels, Vermulst & Janssens, 2010). The Prosocial Behavior sub-scale was not included in our analysis.

Socio-demographic variables

Living arrangement was used as the main independent variable and categorised into nuclear families, joint physical custody and single care, based on the parent's answers to the survey question "with whom does the child live?" The category "joint physical custody" was constituted by those who had chosen the response alternative "the child has joint physical custody" or had stated that the child lives 180–185 days per year with the other parent. The joint parental custody and single care groups could consist of a single biological parent or a biological parent living with a new partner. The children's gender, age and household disposable income were adjusted for as potential socio-demographic confounders. The age of the children was measured in years and divided into five categories: four to six years ($n = 283$), seven to nine years ($n = 278$), 10 to 12 years ($n = 278$), 13 to 15 years ($n = 285$) and 16 to 18 years

($n = 173$) due to non-linear age differences on the SDQ. Disposable income was calculated as the family's total net income after taxes, using weights provided by Statistics Sweden (2012) to adjust for families of different sizes. For the analyses, disposable income was divided into quartiles, with quartile one including the 25% with the lowest incomes. In our sample, 6.1% of the parents were born outside Sweden, including 1% in joint physical custody arrangements and 2.5% providing single care.

Parental variables

Three variables on parental life satisfaction were included as presumptive mediators: (1) their satisfaction with their work, economy, education, leisure time and social network; (2) their ability to influence their own, and their family's life situation; and (3) their satisfaction with their own health. Satisfaction was measured on a five-point scale, ranging from one for very satisfied to five for very dissatisfied. Based on the results of our factor analysis, two indices were computed. Index 1 covered parental satisfaction with their economic situation and comprised the total scores from questions about satisfaction with work, economy and education (Cronbach's alpha 0.685). Index 2 covered parental satisfaction with their social situation and comprised the total scores from the questions about their leisure time, social network and influence over their own, and their family's situation (Cronbach's alpha 0.827). The question concerning the parent's health was used as a single item variable, due to the loading in the factor analysis.

Statistical methods

The SDQ total (5.7%), subscale variables (2.1 to 2.5%), parental index variables (3.4 to 3.6%) and disposable income (9.5%) all had higher attrition rates than the other questionnaire items. The complete-case dataset available for statistical analysis was therefore limited to 1,054 children. An iterative Markov chain Monte Carlo method for multiple imputation was used for the children with missing variables and this enabled us to include all 1,297 children in the analyses (Cummings, 2013). Missing data was judged as random and equally distributed between the living arrangement groups.

Socio-demographic characteristics are presented as numbers and percentages. Mean values and standard deviations (SD) were calculated for the total score and subscales of the SDQ, as well as for the parental satisfaction variables. Linear regression was used to analyse the relationship between living arrangements and SDQ outcomes in four models. Model 1 investigated the individual effect of the independent variables. Model 2 was adjusted for child gender and age. Model 3 was adjusted for child gender and age and also included family disposable income. In

Model 4, the analysis was controlled for child gender, age, family disposable income and the three parental life satisfaction mediators. See Table 3 for further details of the models. Our sample size did not permit interaction analyses to study the influence of children's age on psychological symptoms in relation to living arrangements. The statistical analysis was performed using IBM SPSS Statistics 20.0 (SPSS Inc, 2013).

RESULTS

As shown in Table 1, 76.4% ($n = 992$) of the children lived in nuclear families, 10% ($n = 129$) lived in joint physical custody and 13.6% ($n = 176$) lived in single care families. Of children with joint physical custody, a larger proportion was boys (57.4%) than girls (42.6%). More children were in the mid-age categories (seven to 12 years), compared to pre-schoolers and teenagers. Belonging to the lowest income category was more than twice as common among the two post-separation family types (41.9% and 42.6%) than the nuclear families (20.2%). Mean values for the SDQ (total score and subscales) are presented in Table 2, together with mean scores for the parental satisfaction variables. There were no differences between mothers' and fathers SDQ scoring (t -test, $p = 0.49$).

Model 1, the unadjusted linear regression model (Table 3) demonstrated higher symptom load in children in joint physical custody ($B = 1.6$, $p < 0.001$) and single care ($B = 2.2$, $p < 0.001$) than in nuclear families. In general, boys had higher SDQ total scores than girls ($B = 0.7$, $p = 0.004$), but there were no differences between the age groups. Children from the lowest household income quartile showed higher symptom loads than the highest income group ($B = 1.4$, $p = 0.001$). Higher parental dissatisfaction with the economic situation, family situation or health were all associated with higher SDQ scores in the unadjusted model.

Adjusting for the confounders of child gender and age (Model 2) and child gender, age and household income (Model 3), did not change the different patterns of SDQ scores in relation to living arrangements. When adjusting for the parental life satisfaction variables as mediators (Model 4), the coefficients decreased from 1.4 to 1.1 ($p = 0.007$) for the joint physical custody group from 2.2 to 1.3 ($p = 0.001$) for the single care group.

Table 1. Socio-demographic variables by children's living arrangements ($n = 1,297$)

Living arrangement		Nuclear family ($n = 992$)		Joint physical custody ($n = 129$)		Single care ($n = 176$)	
		n	%	n	%	n	%
Sex	Girl	495	49.9	55	42.6	96	54.5
	Boy	497	50.1	74	57.4	80	45.5
Child age	4–6 years	256	25.8	13	10.1	14	6.9
	7–9 years	224	22.6	34	26.4	20	11.9
	10–12 years	203	20.5	37	28.7	38	21.2
	13–15 years	190	19.2	29	22.5	66	37.5
	16–18 years	119	12.0	16	12.4	38	22.5
Disposable household income	Lowest quartile						
	Q1	200	20.2	54	41.9	75	42.6
	Q2	253	25.5	29	22.5	35	19.9
	Q3	272	27.4	24	18.6	30	17.0
Highest quartile	Q4	267	26.9	22	17.1	36	20.5

Table 2. Mean values for SDQ (total score and subscales) and parental variables by children's living arrangements ($n = 1,297$)

	Nuclear family ($n = 992$)	Joint physical custody ($n = 129$)	Single care ($n = 176$)
Child outcomes			
SDQ Total Score	7.34	8.96	9.57
SDQ Subscales			
Emotional	1.15	1.77	1.92
Conduct	1.13	1.29	1.41
Hyperactivity	2.33	2.69	2.88
Peer Contact	1.03	1.58	1.71
Parental satisfaction variables			
Economic situation ^{a*}	6.09	6.81	7.27
Social situation ^{b*}	7.32	8.14	9.17
Health ^{c*}	1.95	2.04	2.37

^a Parent's satisfaction with economic situation (work, economy and education).

^b Parent's satisfaction with social situation (leisure time, social network and influence over own and the family's situation).

^c Parent's satisfaction with own health.

*A higher score indicates higher dissatisfaction

Table 3. Linear regression models of SDQ Total Score by living arrangements, socio-demographic and parental life satisfaction variables

Living arrangement	Model 1 ^a		Model 2 ^b		Model 3 ^c		Model 4 ^d		
	B	<i>p</i>	B	<i>p</i>	B	<i>p</i>	B	<i>p</i>	
	Nuclear family	ref							
	Joint physical custody	1.6	0.000	1.6	0.000	1.4	0.001	1.1	0.007
	Single care	2.2	0.000	2.4	0.000	2.2	0.000	1.3	0.001
Sex	Girl	ref							
	Boy	0.7	0.004	0.7	0.005	0.7	0.005	0.7	0.004
Child age	4–6 years	0.5	0.231	0.9	0.017	0.9	0.023	0.6	0.113
	7–9 years	0.1	0.835	0.4	0.317	0.4	0.312	0.2	0.571
	10–12 years	0.2	0.578	0.4	0.317	0.3	0.395	0.2	0.522
	13–15 years	ref							
	16–18 years	0.4	0.385	0.4	0.322	0.4	0.320	0.3	0.483
Disposable household income	Q1	1.4	0.001			0.1	0.039	0.3	0.585
	Q2	0.4	0.325			0.3	0.401	-0.1	0.786
	Q3	0.2	0.691			0.2	0.613	0.2	0.676
	Q4	ref							
Parental life satisfaction									
	Economic situation	0.5	0.000					0.2	0.007
	Social situation	0.5	0.000					0.4	0.000
	Health	1.0	0.000					0.2	0.177
Model R2			0.039		0.047		0.138		0.141

^a Model 1 is unadjusted.

^b Model 2 is adjusted for child's gender and age, with girls and age group 13–15 years as the reference groups.

^c Model 3 is adjusted for child's gender, age and household disposable income, with the highest quartile (Q4) as the reference group.

^d Model 4 is adjusted for the variables as Model 3 and for parental life satisfaction variables: economic situation (work, economy and education), social situation (leisure time, social network and influence over own and the family's situation) and health.

DISCUSSION

In this cross-sectional study of 1,297 children aged from four to 18 we found that the children's mental health in different living arrangements was associated with parental satisfaction with their health, social and economic situation. In accordance with previous research, children in joint physical custody had a higher symptom load than children in nuclear families.

The children in joint physical custody had an intermediate position in terms of the SDQ emotional, conduct, hyperactivity and peer contact problem measures, with children in nuclear

families having the lower symptom load and those in single care having the highest.

The parent's satisfaction with their health, social and economic situation followed the same pattern. Parents with sole responsibility for their child's care were the least satisfied and those in nuclear families were the most satisfied. There were only small differences in the beta-estimates of the SDQ scores between the children in single care and joint physical custody when the analysis was adjusted for the three dimensions of parental life satisfaction. This finding suggests that parental

wellbeing and life satisfaction may be important factors when it comes to explaining why children's mental health varies in relation to different living arrangements. Children's gender, age and family household income only made a marginal contribution to explaining the differences in the children's mental health, while parental satisfaction with the three aspects of life had more impact. Despite the increased practice of joint physical custody, the results show that parental economic and social factors still differ substantially between parents in different living arrangements. Like many previous studies, this research shows that children with separated parents tend to have higher rates of mental health problems compared to children in nuclear families.

We may speculate that the increased risk of emotional or adjustment problems in children with separated parents, compared to those living in nuclear families is related to the actual experience of family break up. Some previous research has indicated that differences in children's mental health and problem behavior occur before parental divorce, suggesting that this could be a symptom of family dysfunction or part of a problem that results in parental separation (Strohschein, 2005), rather than a consequence of their living arrangement. We can also hypothesise that the life satisfaction of separated parents is, to a certain extent, determined by pre-separation factors associated with the relationship with the former partner.

In our study, as reported in previous research, the risk of mental health problems in children in joint physical custody was lower than for children in single care. Positive relationships with their parents are important for children's wellbeing and mental health (Låftman & Östberg, 2006) and, according to previous research, children in joint physical custody report more satisfaction with their parental relationships, in particular with their fathers, than children in single care (Fabricius & Luecken, 2007; Spruijt & Duindam, 2010). In fact, Swedish data show that children in joint physical custody are as satisfied as children in nuclear families with their parental relationships (Swedish Government Official Report, 2011). Children living with their parents seem to have stronger relationships with them and this may contribute to better mental health in children in joint physical custody arrangements. Parents who have low levels of contact with their children, mostly fathers, are more dissatisfied with their lives and are reported to suffer from poorer health than other parents (Peacey & Hunt, 2008; Weitoft, Burström & Rosen, 2004). It is possible that parents who have joint physical custody, and share responsibility for their child with the other parent, have happier lives and are more likely to engage with their child and form secure relationships, helping to ensure that their child's mental health is good.

Methodological issues

The cross-sectional design of this study does not allow for any firm conclusions about causality. Longitudinal studies with parental and child variables before and after the parental separation are needed to study effects on post-separation living arrangements on child mental health. Until such studies are available, however, we have to make the best out of cross-sectional studies like this one, where the rich data about parental life satisfaction is a particular strength.

There were no indications of a selective attrition in this study. A non-responder analysis showed no significant differences in the distribution of background variables among responders and non-responders, with the exception of country of birth, where the proportion of foreign-born parents were 6.1% and 8.1%, respectively. However, the proportion of children in joint physical custody in our study was comparable to other recent Swedish studies.

Possible socioeconomic factors may account for differences in children's psychological symptoms between living arrangements. To adjust for this, we included family household income. We choose not to include parent's educational level, because this is associated with income and there was a high non-response rate for father's educational level. Families of migrant origin are less likely to have joint physical custody in Sweden (Bergström *et al.*, 2013), but the number of foreign-born parents with this living arrangement was too small in our study to allow us to control for this variable. We included parental satisfaction with their economic as well as social situation together with a single item rating parental satisfaction with own health. The indices on satisfaction with social and economic situations were associated with living arrangement in the final model but not satisfaction with health. Potentially, stronger mediating effects would be observed with a more comprehensive health measure, comprising also psychological aspects.

Despite controlling for household income and parental satisfaction with various aspects of their life situation, we cannot exclude the possibility of selection effects that nuclear families, joint physical custody and single care differ in ways that we have not been able to control for in this study. In this respect, parental engagement in their children and inter parental conflict would be of particular interest.

The instructions for filling out the questionnaires were directed to parents and the parent was advised to fill out together with the child, if appropriate. However, we could assume that most scorings were made solely by parents. This could be a drawback since parents with higher mental ill-health might judge the child as being problematic. However, the results from our study are in accordance with several previous studies of mental health and living arrangements, where school children themselves have answered questionnaires. (See Bergström *et al.*, 2013; Carlsund *et al.*, 2013).

We had the opportunity to include children from four to 18-years-of-age in our sample. This broad age range is a positive advantage, because children's age may influence how they fare in different living arrangements (Bergström *et al.*, 2013). However, the inclusion of pre-schoolers, mid-age children and teenagers, is also an important limitation, because although our outcome and exposure vary by age, our sample was too small to permit interaction analyses of the different age groups. This means that our general results cannot be applied to specific age groups.

Joint physical custody is a more frequent living arrangement in Sweden than in most other countries (Sodermans *et al.*, 2013) and the findings may not apply to other countries, as children's wellbeing and mental health are influenced by the society they live in as well as family factors (Sodermans *et al.*, 2013). These include the stigma associated with parental separation and post

separation agreements. However, when they compared child outcomes in different countries, Bjarnason *et al.* (2012) found that, overall, children in Nordic countries reported higher life satisfaction than children in countries with less developed social security systems, but that the diversity between children in different living arrangements were similar.

It is possible that a child's mental health may affect their parents' decisions about custody and residency arrangements after a separation and that children's ill health may also affect the parents' wellbeing (Rockhill, Violette, Stoep, Grover & Myers, 2013). In addition, parents with mental health or socioeconomic problems are more likely to experience conflict when it comes to their child's custody and living arrangements (Rejmer, 2003). This calls for longitudinal studies into living arrangements and child mental health, so that these issues can be clarified and the causal directions in these associations clarified. Parental life satisfaction, as well as age at separation and the duration of the separation, should be investigated further as these may help to explain the differences in symptom loads between children in various forms of living arrangements.

In conclusion, this study shows that children in joint physical custody have better mental health than children in single care, but not as good as children in nuclear families. These results confirm that findings from earlier studies on adolescents also can be extended to younger children. Children's mental health in different living arrangements is associated with parent's life satisfaction. The clinical implications are that empirical data on children's mental health in different living arrangements are important for counsellors and mediators for separating parents. Not only for adolescents, but also for younger children, access to both parents in their everyday lives seems beneficial for children's mental health.

We are grateful for the contribution of all members of the NordChild network to this project and would like to particularly thank Professor Max Petzold for his useful comments and help in the creating the dataset. The authors (MB, EF and TW) were funded through Länsförsäkringsbolagens Forskningsfond, Sweden. MB and EF contributed equally to this paper.

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Received 25 November 2013, accepted 21 May 2014