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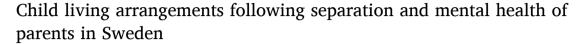
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Article





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ABSTRACT

Father involvement and joint physical custody in post-separation families are increasingly common. In Sweden, 35 percent of the children of separated parents live equally much with both parents. Since parenthood is gendered, the associations between child living arrangement and parental health may vary between women and men. This study analyzes the association between children's living arrangement and mental health of parents, and how this interacts with material and social circumstances. Drawing on The Swedish Survey of Living Conditions (ULF) 2008–2013, the association between child living arrangements and mental health (worry/anxiety) of parents in five family structures: two biological parents, reconstituted with joint or main/sole custody arrangements, single with joint physical custody, and single with main or sole custody, were analyzed. Data on 9,225 mothers and fathers with resident children aged 0–17 were analyzed by logistic regressions for average marginal effects adjusting for socio-demographic, socio-economic and social factors. Analyses of interaction effects were made using the synergy index.

Substantial family type differences were found in mental health between two biological parent family and all other family types for mothers, and two biological parent family and single parents for fathers. For the single mothers, the higher risk for worry and anxiety was still found following controls for socioeconomic factors. For fathers, the only differences that remained following control for socioeconomic factors was that of single fathers with children in joint physical custody. Interaction effects were found for the combination of single motherhood and non-employment, indicating a higher risk of mental health problems for single mothers (both with joint and sole custody), than would be expected from a simple addition of these exposures, suggesting that this is a vulnerable group. The results indicate that joint custody is associated with higher risk for worry and anxiety for the parents, especially for mothers both re-partnered and single, but also for single fathers.

Introduction

Gender relations are changing in the family and in society at large. Divorce and separation rates have increased worldwide and while most children still live with their mother following separation, father involvement and joint physical custody (often referred to as alternate living or shared residence) in post-separation families have become increasingly common in Sweden. Today, 35 percent of the children whose parents do not live together live alternately (about equally much) with both parents, a tremendous increase from one percent in the 1980s (Statistics Sweden, 2014). Despite a strong sense of gender equality in

the Swedish society, parenthood is still strongly gendered and expectations on mothers and fathers differ (Alsarve & Boye, 2012).

At the same time as family patterns are changing, so is working life, with implications not least for the household economy. Previous studies have highlighted the difficulties single mothers may face in combining work and children (Alsarve 2015), and furthermore that the lack of employment is an important factor in explaining the poorer health among single mothers (Fritzell et al., 2012; Nieuwenhuis & Maldonado, 2018). Balance may be facilitated, however, by joint physical custody as opposed to main or sole care (Bakker & Karsten, 2013).

As both gender roles in parenting and working, and actual living

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conditions differ for men and women, the association between child living arrangement and health may differ too. To our knowledge, there is no previous study focusing on this issue, and only one study relating children's living arrangements to mother's self-rated health (Fritzell & Gähler, 2017). In the present study, we advance research by 1) analyses on mental health, and by 2) including also men, i.e., fathers, in the analyses. We benefit from using a large survey data set, representative of the Swedish population, i.e., The Swedish Survey of Living Conditions (ULF, with child supplement) for six consecutive years (2008–2013) that we pool.

Sweden is often considered a forerunner in terms of family policy and family life patterns and therefore provides a good scene to analyze how child custody in practice is associated with health of parents.

Family policy in Sweden

In Sweden, family policies have been directed towards gender equality in parenthood since the 1970s (Wells & Bergnehr, 2014). In early parenthood, fathers are encouraged to take parental leave, and three of the thirteen publicly financed months of leave are devoted to each parent, whereas the rest can be shared as the parents find suitable (Daly, 2011; Klinth, 2008). The strivings for gender equality in parenting are also expressed in various privileges for both the mothers and fathers, such as the right to stay home with a sick child and the availability of subsidized childcare. In line with these policies, Sweden has one of the largest proportions of women in the labor force, 80.6 percent of all women aged 25–64 in 2017, among the OECD countries (OECD, 2018: Table C3).

Probably as a result of the long-term policy commitment to involve fathers, the tendency to share parenting also when parents split up and live apart has become increasingly prevalent in Sweden (SOU 2011). Thus, in international comparisons, the practice of joint physical custody seems to be relatively common in Sweden and other Nordic countries (Bjarnason & Arnarsson, 2011; Nielsen, 2014). Apart from gender-neutral parental leave, other reasons for high frequency of joint physical custody in the Nordic countries may be publicly funded preschools and the generous general child allowances, facilitating dual careers and the possibility for families to hold two family homes (Daly, 2011). Moreover, since 1998, the courts may rule for joint physical custody in family courts, even when both parents do not agree on sharing (Regeringsproposition, 1997). Estimates show that around 10 per cent of all Swedish school children are living in a joint physical custody setting (Bergström et al., 2013; SOU 2011).

Child living arrangements and parents' health

Mental health may be considered an umbrella term, encompassing many conditions ranging from feelings of worry and anxiety to psychiatric diagnoses such as depression or schizophrenia (Patel et al., 2018). To the best of our knowledge, there are no previous studies focusing mental health of parents by custody arrangements. Single mothers are at increased risk of mental ill-health in comparison to partnered mothers. This could be attributed to lower levels of perceived social support, social involvement and frequency of contact with friends and family than married mothers (Cairney, Boyle, Offord, & Racine, 2003), but also economic factors (Kim, Choi, & Kim, 2018) as well as parenting stress (Liang, Berger, & Brand, 2019). Similar results have been reported for fathers, though this has been less researched (Kong & Kim, 2015). Mental ill-health is also associated with less contact with the child, for fathers (Davis, Caldwell, Clark, & Davis, 2009). Lone non-custodial fathers and lone childless men, also face the greatest increased risks of premature mortality (Weitoft et al., 2004).

Moreover, Sodermans and Matthijs (2014) analyzed the subjective well-being of divorced mothers and fathers in relation to custody arrangements. The authors found no direct association between custody status and wellbeing of divorced parents. However, there were some

mediating paths which differed for mothers and fathers. For fathers, joint physical custody meant more involvement with their children, which in turn also gave rise to increased problems in communication between parent and child. For mothers, it had a liberating effect, allowing them to have a more active social life. This is in line with Australian research showing that especially mothers are more satisfied with their time when having joint physical custody arrangements (Cashmore et al., 2010). Two studies also show that parents with joint physical custody exhibit higher levels of life satisfaction than nonresidential parents and parents with main or sole custody (Sodermans, Botterman, Havermans, & Matthijs, 2015; van der Heijden, Gähler, & Härkönen, 2015). The only previous study analyzing health of mothers by child living arrangements based on a representative sample of the population (Fritzell & Gähler, 2017) showed that the lower self-rated health among single mothers in general, compared to mothers in two biological parent families and reconstituted families, could largely be attributed to single mothers with main or sole custody of their children, rather than to single mothers with joint physical custody. The poorer socioeconomic conditions in the group with main or sole custody play a big part in this. Employment was significantly more common among mothers with joint physical custody and was an important explanatory factor for their better health compared to single mothers with main or

Parents practicing joint physical custody are generally found to have a more favorable socioeconomic situation, e.g., higher education, than parents with sole parental care (Kitterød & Lyngstad, 2014; Poortman & van Gaalen, 2017), also in Sweden (Statistics Sweden, 2014). In addition, joint physical custody is less common among immigrants and more common among parental couples with good communication and few conflicts (Spruijt & Duindam, 2009; Statistics Sweden, 2014). Having common children entails a certain need of cooperation even after separation, especially in the case of joint physical custody, and Fritzell and Gähler (2017) showed that lack of parental cooperation was strongly associated with single mothers' poorer self-rated health, in particular for single mothers with main or sole custody.

The positive social selection into joint physical custody may decrease over time. Longitudinal studies indicate that the socioeconomic differences between parents with joint physical custody and sole parental care decrease as joint physical custody becomes more common (Kitterød & Wiik, 2017; Sodermans, Matthijs, & Swicegood, 2013; but see Meyer, Cancian, & Cook, 2017 for opposing results).

Joint physical custody and children's health

Parenting is an interactive process, involving both parents and the child. While there are still very few studies on the association between child living arrangements and health among parents, studies on the health impact on children is a growing field (see, e.g., Carlsund, Eriksson, Löfstedt, & Sellström, 2013; Bergström et al., 2015). In comparison with children who live mostly or only with one parent, research indicates better well-being for children who live alternately (Nielsen, 2011) although the situation may be different in high-conflict cases (Trinder, 2010). The findings in these studies are of course important per se, but also since it is likely that the health of parents and children are closely interrelated (Gunlicks & Weissman, 2008). Single parents are at higher risk of poor mental health (Chiu et al., 2017). This is a concern for children living with a parent with mental health problems as studies have shown that children of depressed parents are themselves at risk of adverse health consequences later in life (Weissman et al., 2016). Thus, finding factors that promote resilience among parents following separation is vital also for the wellbeing of children.

Discourses of parenting in transition – implications for health

Gender is central to the analysis of parenting and health, and can be understood as socially produced in interactions in everyday life, thus women and men 'do gender' (West & Zimmerman, 1987) or, as in this case, parenting, based on situated expectations that differ for mothers and fathers. As norms and ideologies of how to be a good parent change over time, and intersect with material realities in family and work lives, different family types emerge and preconditions for health within these change.

Swedish family policy has a longstanding gender equality ambition (Lundqvist, 2011) and in contrast to many other settings, the social construction of mothering is influenced by equality and child-centrality (Elwin-Novak and Thomsson 2001), which facilitate father involvement and coparenting. The ideology of fathering today depicts the father as actively involved in care taking (Pedersen, 2012), however the breadwinner ideal of fathering is also still present (Draper, 2003). Expectations on both mothering and fathering change over time, and are further likely to differ across social groups, as, for example, lower social position is associated with less egalitarian gender role attitudes.

Following separation, women and men still enter into parenting from different positions, where the mother has traditionally been portrayed as the primary parent. Considering the change in different post-separation arrangements over time, having the children half of the time generally means an increase for fathers in time spent with their children as compared to being a non-custodial parent, while for mothers it implies a decrease. Thus, the transition from traditional mother residence following separation to shared residence, leads to less time pressure for mothers and a higher time pressure for fathers than in the past (van der Heijden, Poortman, & van der Lippe, 2014). At the same time, it may be beneficial for the health of fathers, as parents without contact with their children are generally in poorer health and have increased risk of depression (Weitoft et al., 2004).

Understanding how post-separation living arrangements for children influence the health of parents requires an understanding of how everyday life is organized, and of factors that influence health. Drawing on the framework of social determinants of mental health (Patel et al., 2018), both distal and proximal factors influence the mental health of populations, across the life course. The proximal factors are in focus here, and refer to the way arrangements are experienced by individuals, within domains such as the demographic (i.e. age, ethnicity, sex), economic (i.e. employment, financial strain), neighborhood (i.e. safety and security) and social and cultural domain (i.e. social support, education). There are several pathways linking the social determinants to health outcomes. One of the proposed pathways is stress. Challenges within work, domestic and social domains may cause stress, and thus activate the biological stress response (Brunner & Marmot, 2006). For example, financial strain, lack of social support, or a feeling of always being on call (Bakker & Karsten, 2013), may produce a constant level of stress. This has in turn been linked to both mental and physical health problems such as depression, diabetes, higher susceptibility to infection and a higher risk of cardiovascular disease (Brunner & Marmot, 2006).

Working and parenting – gender aspects and social patterning

Both material and social circumstances are to a large extent determined by gainful employment. Labor market policies and availability of good quality subsidized child care are especially important for single parents trying to negotiate the work-family balance, but child living arrangements may also be important. Furthermore, ideologies of the ideal worker and realities of working life may affect mothers and fathers differently, and thus the association with health may differ. The joint physical custody family approximates the two biological parent family in what possibilities the parents have in relation to employment. When the children stay with the other parent, the first parent can use the time in any domain they wish – in work, domestic or leisure (Bakker & Karsten, 2013), and this may have implications for health.

There may also be a socioeconomic dimension to balancing work and care. Women (and men) with lower education have lower incomes and work less hours, leaving them with less financial resources to achieve

balance (Bakker & Karsten, 2013). Alsarve (2015) showed that for single mothers, economic and social capital (in the form of social networks) were significant resources in reconciling work and family, with working class mothers having less possibilities in both spheres.

Poverty is often described as a gendered phenomenon; women are more likely to experience poverty than men. Also in Sweden, single mothers are in a worse financial situation compared to single fathers. The proportion of single mothers in gainful employment declined during the economic crisis in the early 1990s (Gähler, 2001), and since then, single mothers have lagged behind other family types in income (Swedish Social Insurance Agency, 2018). Single parents (mothers in particular) are also more vulnerable to potential changes in the labor market as well as changes in social policies. Official statistics show that the redistributive power of the financial family policy has decreased since 2006 (Swedish Social Insurance Agency, 2018). It is important to note that in addition, being an immigrant is often associated with lower social position, lower employment rates and discrimination in the labor market (Bursell, 2014). Foreign-born single mothers in Sweden have poorer income conditions than single mothers born in Sweden. Furthermore, foreign-born mothers tend to have sole parental care, as opposed to joint care, to a higher extent following separation (Bergström et al., 2015).

Applying an intersectionality lens

The intersectional approach in research has highlighted the "othering" processes at the structural level, ascribing groups to lower status in the hierarchy, and may therefore serve as a guiding framework for an analysis of how power dynamics, based for example on gender, ethnicity and social class, interact, and shape inequalities in health (Viruell--Fuentes and Abdulrahim 2012). Individuals have many different experiences, possibilities and identities, and ways in which to define themselves. This may concern different dimensions - for example as a woman (man), as a mother (father), with or without a partner, as employed or unemployed, as born in Sweden or elsewhere, as high or low educated etc. All these aspects are important in understanding the power orders that individuals face in different circumstances, and these must further be understood in relation to each other. Here, we explore two important dimensions that may influence the relationship between family type and mental health (as described in the previous section); employment and ethnicity. As described above, in Sweden, women and men enter into parenting from different positions, and the social and material realities differ between the sexes. Therefore, in this study, analyses are performed for mothers and fathers separately.

Aim and research questions

The aim of this study is to analyze how children's living arrangements (having children resident at least half of the time) after parental separation are associated with mental health of mothers and fathers respectively and how this association interacts with socioeconomic and social circumstances.

- How are child living arrangements associated with the health of mothers and fathers in different family structures: two biological parent family, reconstituted family with joint or main/sole custody arrangements, and single parents with joint or main/sole custody arrangements?
- How do other socioeconomic factors (i.e. education, employment, lack of cash margin) and social factors (i.e. having a close friend and experience of threat/violence) influence the association between family structure and health?
- How do the associations vary between mothers and fathers?
- Are there any interaction effects as measured by the Synergy index between family type and employment and country of birth respectively?

Methods

Data

The data were derived from the Swedish Living Conditions Survey (ULF) (see http://www.scb.se/LE0101-en/). The participants are selected using a stratified, independent random sample of individuals aged 16 and above from the Swedish Total Population Register and telephone interviews are conducted yearly by Statistics Sweden. In this study, parents with children under the age of 18, who reside at least half the time in the household, were included from the total ULF sample 2008-2013, yielding a pooled data set with 10, 478 parents in different family structures. The rate of non-responders varied between 27 and 43 percent, with a mean of 38 percent for the total survey population 2008-2013. During this period, 19 percent of the approached individuals refused to participate while the rest of the non-responders were never reached. For the purpose of this study, informants that have children both living all the time as well as half the time (n = 370, number of children: 886), and informants with internal missing data were excluded (n = 883); yielding an analytical sample of 9,225.

Independent variable

The family type categories were based on parent's reports about the child's residency. Firstly, parents are asked if they have children in the household. If so, the parent answered the following questions: "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 'shared residence'" or "more than half of the time". Furthermore, parents are asked to state if the child is a biological child or otherwise. If a child lives less than half the time with the adult participant, interviewers did not inquire about this child, meaning that we, unfortunately, cannot distinguish parents with no or less than joint custody or child age for this category. This is mainly a deficiency for men but much less so for women, where few have their children living with them less than half the time. The parent also provided information on whether or not the child's other parent lived in the same household. For the purpose of this study, the categories used in the analyses are grouped according to the number of parents in the household (one or two), whether both parents (if two) are biological parents to the child, and the child's residence in the household (resides more than half the time or joint physical custody). To get distinct groups in order to answer the research questions, parents who had several children with different arrangements, living both all the time as well as in joint physical custody, were excluded, as described above. The family types included are listed and described below.

Dependent variable

Mental health was measured by whether the respondent reported suffering from worry/anxiety. In the ULF survey, participants were asked "Do you suffer from worry or anxiety?" with the response options no/yes, somewhat bothered/yes, very bothered. For the analyses, the variable was dichotomized as bothered (somewhat bothered/yes, very bothered) versus not bothered.

Covariates

The covariates included in the analyses were chosen to reflect the different dimensions (demographic, economic, neighborhood and social and cultural domain) suggested by the framework of social determinants of mental health (as described previously) and believed to be of importance for parental mental health. Here we divide them into sociodemographic, socioeconomic and social groups of covariates.

Parental age (included as a continuous variable), number of children in the household (in three categories: 1, 2 or 3 or more), presence of preschool-aged children (under the age of 6) in the household or not, and ethnic background (Swedish-born or not) were used as socio-demographic covariates.

For measures of socioeconomic position, parent's level of education was used as a categorical variable divided in three levels (low level of education equals any level less than three years of senior high school, medium level of education equals three years of senior high school (gymnasium) but less than three years of university, and high level of education equals at least three years of university). Data on employment was coded as currently working versus not (including being unemployed, being on sick-leave, parental leave etc.). Having a cash margin ("Would you manage an unexpected expense of/8,000 Swedish kronor (SEK) 2008–2010/10,000 SEK 2011–2013/11,000 SEK 2014–2015/ without taking a loan or asking for help") versus not having a cash margin was used as a measure of economic strain.

Having no close friend (versus having at least one) was included as a measure of social situation. Experienced threat or violence during the past 12 months versus not was also included as a covariate.

Statistical analyses

The possible variation in health between mothers and fathers with different family types were analyzed by using average marginal effects (AME) from logistic regression analyses. The coefficients can be interpreted as percentage point differences in relation to the reference category. AME have the advantage over, e.g., odds ratios of being comparable between groups and models and being easily interpretable (Mood, 2010). The AME were computed in three steps: the first adjusted for socio-demographic background, the second added controls for socio-economic covariates, and the last model added adjustment for social situation. A p-value of .05 or lower was considered statistically significant.

To apply the intersectionality approach, interaction effects between family type and employment status, and family type and country of birth, respectively, were assessed using the Synergy index according to Rothman's definition of biological interactions (Rothman & Greenland, 1998) using a formula for STATA and Excel developed by Andersson,

Family types.

Two biological parent family - two biological parents with common children.

Reconstituted family with joint physical custody – one biological parent (respondent), one step-parent and children living about half of the time in this household.

Reconstituted family with main or sole custody – one biological parent (respondent), one step-parent and children living all or most of the time in this household.

Single parent with joint physical custody – one biological parent (respondent) and children living about half of the time in this household.

Single parent with main or sole custody - one biological parent (respondent) and children living all or most of the time in this household.

Alfredsson, Kallberg, Zdravkovic, and Ahlbom (2005). The model investigates whether there are cases that only occur in the presence of joint exposures, i.e. the effect of one factor depends on the person's status on the other factor. Where there is departure from additivity of effects the exposures may be dependent on each other. If the value for synergy exceeds 1.0 there is synergy. The synergy index is given by:

$$SI = [RR11-1]/[(RR10-1)+(RR01-1)]$$

RR11 is the relative risk (RR) among those who are exposed to both risk factors (here: non-employment and family type not two biological parent family), RR10 and RR01 are the relative risks where only one of the risk factors are present, respectively. RR00 is the reference category (unexposed), which is equal to 1. In this study, we use the odds ratio (OR) instead of RR to measure departure from additivity. The results were obtained through logistic regression, controlling for age and level of education. The interaction analyses were made by employment status; non-employed vs employed, and country of birth; born in Sweden vs foreign born, for each different family type in comparison to two biological parent family. STATA version 13 was used for statistical analyses. The study was approved by the Regional Ethics Committee in Stockholm, EPN, Dnr 2017/2457-31.

Results

We present descriptive characteristics of the participating mothers and fathers in Tables 1a and 1b respectively. For both genders, two biological parent families constitute the largest family type. Among single parents, main or sole parental care is still the most common family type for mothers whereas joint physical custody is more common for single fathers (recall that parents with no or less than joint custody are not included in our data). For both genders, characteristics differ quite substantially between family types. For mothers in two biological parent families, fewer than 20 percent are foreign-born and the socio-economic situation is favorable. These mothers are relatively highly educated, their employment level is high, and they seldom lack a cash margin. In addition, their mental health, as illustrated by suffering from worry and/or anxiety, is generally better than for mothers in any other family type.

In socioeconomic terms, mothers in reconstituted families with joint custody resemble the two biological parent family mothers, the exception being the high prevalence of mental health problems. Over 30 percent of these mothers report that they suffer from worry/anxiety. Several characteristics differ between mothers in the two reconstituted

family types, to the disadvantage of mothers with main or sole custody. For example, the main or sole custody mothers are more often foreignborn, have a poorer socioeconomic situation, and lack a close friend more often.

Also within the category single mothers there are large differences in living conditions, to the disadvantage of mothers with main or sole parental care. These mothers are relatively often of foreign origin and their socio-economic conditions stand out as least favorable of all family types. The picture for single mothers with joint physical custody confirms what is previously known, there is strong positive selection into this family type and their socio-economic conditions are relatively favorable, comparable, in fact, to the conditions for mothers in two biological parent families, apart from the high levels of lack of cash margin, reported by nearly half of the mothers in this group. Single mothers with joint physical custody are less often foreign-born. Still, mothers with joint physical custody (both single and in reconstituted families) report mental health problems at high levels, as high as for single mothers with main or sole parental care. Among single mothers with sole custody, nearly two thirds reported lack of cash margin.

The patterns for fathers are rather similar to those for mothers with a favorable situation for fathers in two biological parent families and a positive selection into joint physical custody. Fathers in reconstituted families with joint custody suffer, however, from worries and anxiety to a higher extent, almost comparable to the levels for single fathers with joint or main/sole parental care. It should also be noted that men generally less often report mental health problems, in comparison with women.

We now turn to a multivariate analysis to study whether associations between family type and mental health are statistically significant once we control for other factors. We investigate how other socioeconomic factors (i.e. education, employment, lack of cash margin) and social factors (i.e. having a close friend and experience of threat/violence) influence the association between family structure and health. We conduct gender-specific analyses and begin with women.

The associations between family type and mental health are presented in Tables 2a and 2b. Beginning with women, we find that mothers in the reference category exhibit significantly less worry and anxiety than mothers in all other family types. For mothers both in reconstituted and single parent families the differences are substantial, between 9 and 16 percentage points (see Table 2a, Model 1). Whereas the percentage point differences decrease as we adjust for socioeconomic and social situation factors in Model 2 and Model 3, mothers in all groups still

Table 1a
Characteristics of mothers by family type, presented with percentages for categorical data and mean values and standard deviations for continuous data (n = 4,997).

Mothers Variables	Two parents	Two parents			One parent		
	Two biological parent family	Reconstituted family (parent and stepparent)		Single parent family			
	n = 3,793 (75.9)	Joint physical custody n = 83 (1.7%)	Main or sole custody $n = 407 (8.1)$	Joint physical custody n = 182 (3.6)	Main or sole physical custody $n = 530$ (10.6)		
Age in years (mean, SD)	39.5 (7.4)	40.8 (6.2)	39.5 (7.1)	41.5 (7.3)	41.1 (8.5)		
Foreign-born (vs born in Sweden)	16.2	14.5	20.6	7.1	25.6		
Have children <6years of age	51.5	26.5	45.6	28.4	28.2		
Number of children							
1	38.3	32.5	32.9	51.4	60.5		
2	46.7	31.3	38.8	40.4	30.1		
3 or more	15.0	36.1	28.4	8.2	9.4		
Highest education							
University level	55.5	48.2	36.3	48.1	33.7		
Senior high school	40.4	45.8	55.4	46.5	52.0		
Primary level	4.2	6.0	8.3	5.5	14.3		
Lack of cash margin	14.3	16.9	25.3	46.5	62.0		
Not currently working	12.6	9.6	19.1	11.5	29.5		
Lack of close friend (to talk to about anything)	8.7	7.2	9.8	3.8	8.7		
Experienced violence or threat	5.5	12.1	9.6	14.8	14.7		
Suffer from worry/anxiety	18.3	32.5	28.2	36.1	36.7		

Table 1b

Characteristics of fathers by family type, presented with percentages for categorical data and mean values and standard deviations for continuous data (n = 4,228).

Fathers	Two parents		One parent			
Variables	Two biological parent family	Reconstituted family (pare	ent and stepparent)	Single parent family		
	n = 3,605 (85.3)	Joint physical custody n = 85 (2.0%)	Main or sole custody n = 246 (5.8)	Joint physical custody n = 190 (4.5%)	Main or sole custody n = 102 (2.4)	
Age in years (mean, SD)	42.0 (8.4)	41.7 (7.5)	40.5 (7.6)	44.2 (8.0)	48.2 (7.6)	
Foreign-born (vs born in Sweden)	15.8	4.7	15.9	10.5	18.6	
Have children < 6years of age Number of children	53.8	30.6	61.0	23.2	13.7	
1	37.8	28.2	19.1	45.8	69.6	
2	47.0	41.2	40.7	45.8	23.5	
3 or more Highest education	15.2	30.6	40.2	8.4	6.9	
University level	47.4	35.3	30.5	38.4	29.4	
Senior high school	45.0	54.1	57.7	52.6	64.7	
Primary level	7.7	10.6	11.8	9.0	5.9	
Lack of cash margin	11.6	12.9	19.5	20.5	26.5	
Not currently working	6.1	5.9	3.3	6.3	14.7	
Lack of close friend (to talk to about anything)	18.0	8.2	13.0	4.7	20.6	
Experienced violence or threat	5.1	5.9	9.8	11.1	5.9	
Suffer from worry/anxiety	11.0	15.3	9.8	17.9	18.6	

report more worry and anxiety than mothers in two biological parent families. Especially lack of cash margin and experiencing violence or threat is associated with higher levels of worry and anxiety. The coefficient for mothers in reconstituted families with joint physical custody remains similar in all models. Still, no model suggests a significant difference in mental health between single mothers with main or sole custody and joint custody as the confidence intervals for these two family types overlap (not shown).

For fathers, the family type differences are smaller than for mothers but the differences for mental health are significant in relation to the reference category for the two groups of single fathers (see Table 2b, Model 1). However, when adjusting for socioeconomic factors, the percentage point differences decrease and only the higher proportion of worry and anxiety among single fathers with children in joint physical custody remains significant.

Parents with sole custody may be more vulnerable to nonemployment in terms of health. The presence of interaction effects was measured by the Synergy index. In the interaction analyses (Table 3) we find examples of synergy effects; i.e. that there is an interaction effect of combining the exposures of being a single mother and not being in employment, indicating a higher risk of mental health problems for single mothers (both with joint and sole custody), than would be expected from a simple addition of these exposures. This is especially the case for single mothers with joint custody. Synergy effects by employment status are not found for fathers in any family type (not shown).

Also, the combination of being a foreign born parent with sole custody may increase vulnerability in terms of health. Therefore, we tested whether there were any interactions between family type and foreign background vs Swedish background. These are however not significant for neither mothers nor fathers (not shown).

Table 2aAverage Marginal Effects (AME) and Standard Errors (SE) for worry/anxiety by mothers' family type controlled for other factors (n = 4,997).

Variable	Model 1	SE	Model 2	SE	Model 3	SE
	AME		AME		AME	
Family type						
Two biological parent family	ref		ref		Ref	
Reconstituted family with joint physical custody	.126**	.040	.130**	.039	.123**	.039
Reconstituted family with main or sole custody	.090***	.020	.065**	.019	.062**	.019
Single mother with joint physical custody	.158***	.026	.110***	.027	.108***	.026
Single mother with main or sole custody	.143***	.017	.060**	.018	.058**	.018
Age (years)	.000	.001	.003**	.001	.003**	.001
Foreign background (vs Swedish)	.082***	.014	.042**	.014	.035*	.015
Children < 6 years (vs only older children)	017	.016	.003	.016	.001	.016
Number of children						
1	Ref		Ref		Ref	
2	014	.013	006	.012	006	.012
3 or more	015	.018	028	.017	026	.017
Highest education						
University level			(ref)		(ref)	
Senior high school level			.030*	.012	.028*	.012
Primary level			.021	.024	.014	.024
Not currently working			.098***	.015	.092***	.015
Lack of cash margin			.125***	.014	.115***	.014
Lack of close friend (to talk to about anything)					.088***	.018
Experienced violence or threat					.099***	.019
Adjusted R ² (LPM)	.030		.063		.072	

All models are adjusted for survey year.

^{***} $p \le 0.001$; ** $p \le 0.01$; * $p \le 0.05$.

Table 2b Average Marginal Effects (AME) for worry/anxiety by fathers' family type controlled for other factors (n = 4,228).

Variable	Model 1	SE	Model 2	SE	Model 3	SE
	AME		AME		AME	
Family type						
Two biological parent family	ref		ref		Ref	
Reconstituted family with joint physical custody	.050	.031	.042	.031	.043	.031
Reconstituted family with main or sole custody	013	.023	021	.022	024	.022
Single father with joint physical custody	.063**	.020	.049*	.020	.048*	.020
Single father with main or sole custody	.061*	.027	.038	.027	.036	.027
Age (years)	.000	.001	.000	.001	.000	.001
Foreign background (vs Swedish)	.082***	.012	.042**	.012	.036**	.012
Children <6 years (vs only older children)	.001	.013	005	.012	005	.012
Number of children						
1	ref		Ref		Ref	
2	.007	.011	.012	.011	.013	.011
3 or more	.003	.015	.000	.015	.002	.015
Highest education						
University level			(ref)	.010	(ref)	010
Senior high school level			.005	.010	.007	.010 .016
Primary level Not currently working			.055** .076***	.016	.051** .078***	.016
Lack of cash margin			.080***	.013	.072***	.013
Lack of close friend (to			.000	.013	.036**	.013
talk to about anything)					.050	.012
Experienced violence or threat					.087***	.016
Adjusted R ² (LPM)	.020		.055		.067	

All models are adjusted for survey year.

We find substantial family type differences in mental health for both genders. For single mothers, especially those with main or sole custody, the relationship between family type and worry and anxiety still holds following control for socioeconomic factors. For fathers, the only difference that remained following control for socioeconomic factors was that of single fathers with children in joint physical custody. Thus, there seems to be a dividing line between mothers in two biological parent families on the one hand, and mothers in all other family types on the other hand. For fathers, other factors seem to be more important than family type as no clear pattern is found for the studied outcome.

Neither for mothers nor fathers were any significant differences found between the family types not consisting of two biological parents. Hence, we do not find that parents with joint custody of children fare either better or worse than parents with main or sole custody. If anything, the results indicate that joint physical custody is associated with higher levels of worry and anxiety for mothers and single fathers.

Of the interactions tested, synergy effects on mental health were found for the combination of being a single mother and not being in employment.

Discussion

During the last decades, two trends are salient in Swedish family life. First, because of increasing divorce rates, and changes in reconstitution patterns, there has been an increase in family type variation. Second, fathers' responsibility and commitment in their children has increased, indicating a change in the ideology of fathering. These two trends converge in joint physical custody, where two biological parents, no

Table 3Evaluation of synergy effects between family type and non-employment on worry and anxiety in mothers. Based on odds ratios (with 95% confidence intervals) from logistic regression, controlling for age and level of education.

Family type		Non-employed	
Reconstituted family with joint physical custody		Yes	No
	Yes	11.70	2.10
		(3.09-44.25)	(1.44-3.06)
	No	2.17	1
		(1.80-2.61)	
	Synergy	2.49	
	Index	(0.40-15.71)	
Reconstituted family with main	or sole custody		
	Yes	2.85	1.36
		(1.89-4.30)	(1.07-1.73)
	No	2.17	1
		(1.80-2.61)	
	Synergy	1.21	
	Index	(0.61-2.43)	
Single mother with joint physica	al custody		
	Yes	12.36	2.00
		(5.48-27.91)	(1.49-2.68)
	No	2.17	1
		(1.80-2.61)	
	Synergy	5.25	
	Index	(2.06-13.39)	
Single mother with main or sole	custody		
	Yes	4.52	1.90
		(3.40-6.02)	(1.55-2.33)
	No	2.17	1
		(1.80-2.61)	
	Synergy	1.70	
	Index	(1.11-2.62)	

longer living together, take equal responsibility for their children, who live with both their parents to the same extent. How is this "new" family arrangement associated with parents' mental health? The number of studies focusing on child well-being is ever increasing but few studies, so far, have shown any interest for the parents. Here, we examine mental health among mothers and fathers in different family types, including joint physical custody.

The most consistent pattern in our data is the divide between parents in two biological parent families who report lower levels of worry and anxiety than parents in other family types. This applies to mothers and fathers alike, but health differences by family type are clearly greater among mothers. In regression analyses we find no elevated risk for fathers in reconstituted families. After controls for socio-demographic, socio-economic and social factors, single fathers with joint custody still report worry and anxiety more often than fathers in two biological parent families. For mothers, the differences between the two biological parent family and other family types are consistently large and remain also after controls for these conditions. It should also be noted that men generally report mental health problems less often than women do. This result agrees well with other studies on gender differences in health finding more common mental health problems among women (Patel et al., 2018).

Joint physical custody not associated with less mental health problems

Joint physical custody for children (in a reconstituted or single parent family) does not appear to be associated with lower prevalence of worry and anxiety for parents. In fact, if anything, joint physical custody seems to be associated with higher risk of mental health problems for mothers and single fathers than having their children living with them most or all of the time, also after controls for a number of economic and social conditions. Given what we have learnt from some previous studies, this result is somewhat unexpected. First, children in joint custody arrangements are generally better off than children in main or sole custody arrangements (see, e.g., reviews by Nielsen, 2014 and

^{***} $p \le 0.001$; ** $p \le 0.01$; * $p \le 0.05$.

Steinbach, 2018) and these findings could be expected to mirror that of their parents. Second, some previous studies, conducted in Australia, Belgium, and the Netherlands, show that parents with joint custody report higher levels of life satisfaction (Sodermans et al., 2015; van der Heijden, Gähler et al., 2015), and satisfaction with their time use and social situation (Cashmore et al., 2010) than nonresident and sole resident parents. But previous studies as shown are few and in no case do they focus on mental health.

Thus, it may very well be that joint physical custody has a number of positive outcomes for single parents and parents in reconstituted families but mental health, at least the way we measure it here, may not be one of them. Why not? Firstly, one reason may be precisely the fact that the parent spends half the time without the child. Child-centrality is key in the ideology of intense mothering (see for example Pedersen, 2012). Thus, a sense of loneliness, longing, and of not always knowing how the child fares may translate into worry and/or anxiety, in particular, perhaps, for mothers, who generally still take the main responsibility for the children in two-parent families. Also, despite the relative gender equality of Swedish family life, the internalized ideal of mothers and fathers still differ (Elvin-Nowak & Thomsson, 2001) and for mothers having the children half the time, this might well be experienced as loosing half the time while fathers might be experiencing the same time as a gain (Fransson, Sarkadi, Hjern, & Bergström, 2016). However, single fathers with joint custody also showed higher risk of mental health problems (albeit smaller differences than among mothers), perhaps indicating that the norms of fathering found among those with joint custody may be in transition to approximate that of the mothering ideal. Secondly, continuous contact with the second parent and constant entry and exit of children may also be stressful, for mothers and fathers alike, especially when there is lack of cooperation. Thirdly, it may be that the positive social selection into joint physical custody has decreased over time (Sodermans et al., 2013). The fact that joint physical custody is relatively common in Sweden, indicates that this process of decreased positive selection may have come further here than in many other countries, where unobserved heterogeneity between family types may contribute to higher levels of well-being among joint custody parents.

Moreover, studies do not unanimously find positive associations between joint custody arrangement and parent outcomes. For example, the Australian study by Cashmore et al. (2010) includes fathers who experience the half-time parenting as exhausting, even if the contact with the child is described as very positive. Sodermans et al. (2015) found benefits for mothers in terms of increased wellbeing (because of larger possibilities to manage their own time) while fathers reported decreased wellbeing, as more time with the children also entailed communication problems with the child. Qualitative research is warranted to elucidate the association between joint physical custody and poorer mental health for mothers and fathers respectively.

Synergy between single motherhood and lack of employment

Applying an intersectionality approach, we analyzed the interaction between family type and employment and country of birth respectively. The results regarding the additive effect of family type and labor market position indicated a higher risk of mental health problems than would be expected from a simple addition of these exposures, for single mothers with both joint and sole custody. The poorer health of non-employed single mothers has been highlighted previously (Fritzell et al., 2012; Nieuwenhuis & Maldonado, 2018). These synergy effects could be explained for example by health selection into non-employment (Jusot and Khlat, 2008) or by health impact of non-employment. Drawing on previous research (for example Sodermans et al., 2015) the higher risk of mental health problems found also among single mothers with joint physical custody is somewhat surprising, as they could be expected to share both the social and financial burden of childrearing with the father. However, employment is a positive factor for wellbeing for most

people, adding more than economic stability (Greenberger & O'Neil, 1993), and these findings show that in some cases an intersectionality approach is useful. No significant interactions were found for re-partnered mothers, or fathers in any family type. This further highlights the vulnerable situation that single mothers face. Interactions for country of birth were not significant in any family type.

Methodological considerations

The data are drawn from a national random selection sample. Thus, the data benefit from being large and population based. However, as in many surveys, the non-response rate has increased over time. Statistics Sweden report that non-response in the ULF/SILC is more common among foreign born and individuals younger than 34 (Statistics Sweden, 2018). Generally, the response rate is also lower among those with lower socioeconomic position, and those in poor health status are less likely to participate in surveys (Lorant and Demarest, 2007). For the present study, this could lead to an underestimation of the excess risk of poor mental health among the non-employed single mothers, and perhaps contribute to the finding that although being born outside Sweden was associated with worry/anxiety, there was no synergy found between country of birth and family type for neither mothers nor fathers.

Moreover, the largest group of single fathers, those whose children reside with them for less than half of the time, are not included in these analyzes, as the group cannot be distinguished in the data material used here. This is a drawback as nonresidential parents are still a very common group among fathers, and previous studies have shown that they are in particularly poor health (Weitoft et al., 2004).

Furthermore, we do not know from official figures how many parents have only joint custody (and not also a child who lives full time/no time, or mixed arrangements as we call them) as these numbers are not found in registers. For children, only one address is allowed in the official registers. Furthermore, the numbers for children are not easily interpreted for parents. For example, for a child living in shared parenting, this is probably the primary living arrangement category for this child. However, parents who have children living alternately might identify themselves as many different family types according to their total situation. A parent with all children living in this household every other week would probably identify themselves as parents with joint physical custody- and those are the primary parents that we aim to focus on in this paper. However, another parent with one child living in the household every other week and two children living there permanently could be hypothesized to have a rather different parenthood than that of the aforementioned one and this type of parent is therefore not in our study categorized as a parent with joint physical custody. In the analyses presented in the paper, we have taken effort to distinguish between the different family arrangements. In order to make the categories more distinct, we excluded those with mixed arrangements, such as a combination of joint and sole custody (n = 370). However, we acknowledge that we need more knowledge on the well-being of those with more complex family arrangements.

Regrettably, there is no indication of time since separation in the data. It may be that those with recent separations report higher levels of worry due to this life event, and if they also have joint custody to a higher extent, the finding of higher worry/anxiety among those with joint custody could partly reflect this transitional stress.

Since the study is cross-sectional we cannot make any conclusions as to the causality of different associations. It is possible that part of the association between family type and health is due to health selection. The outcome used is a single item measure with associated drawbacks, and it is likely to capture both lighter and more severe problems with worry/anxiety. Due to small numbers of cases indicating severe problems, this category could not be investigated separately. It should be noted that self-reported mental health problems such as worry and anxiety may, but do not necessarily, affect the functional ability of an individual, and is often a normal reaction to a stressful life situation.

Mental health problems may however develop into mental disorders, which may in turn lead to severe consequences, both socially and financially. For instance, there has been an increase in the frequency of sick-leave due to depression and other psychiatric disorders in Sweden among other countries in recent years (Järvisalo et al., 2005).

Applying the intersectionality lens, we analyzed whether there were any interactions between family type and employment and ethnicity respectively. These analyses were adjusted for age and educational attainment and conducted separately for men and women. Not having employment indicates a low income, but analyses focusing whether there are any interactions with income in itself could also be of interest for future studies.

An important strength of this study is the large sample size which allows for identification of different family types, and controlling for several important confounders.

Conclusion

Mothers and fathers in two biological parent families report less mental health problems than parents in other family types. Some of the differences found in mental health between family types may be explained by varying economic and social conditions. The results indicate that joint physical custody is associated with higher levels of worry and anxiety for re-partnered and single mothers and for single fathers. As the ideology of parenting is changing and joint physical custody is ever more common, our results suggest that more support is needed for parents with joint physical custody to cope with associated stressors, to make sure that the worry and anxiety experienced by the parents do not translate into more severe conditions. Among mothers, the synergy effects found for single motherhood and non-employment highlight the vulnerable situation faced by this group of women in terms of mental health, and the importance of the intersectionality approach.

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Ethical approval

The study was approved by the Regional Ethics Committee in Stockholm, EPN, Dnr 2017/2457-31.

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