Title: Family structure transition and early childhood development: evidence from a population-based birth cohort in Taiwan

Background

There has been a body of literature that sheds light on differential child outcomes associated with family structure, and examines what impacts an event of family transition, mainly divorce and remarriage may bring about to children. Recently, societies including the US and UK are raising great concerns over more complicated changes in family situations such as an increased fraction of out-of-wedlock births and experiences of multiple transitions. This has led to emerging inquiries which consider more diverse specifications of family structure and take family instability into account on studying the well-being of children. However, this line of literature is primarily developed from the US and Western European countries, and limited knowledge is yet available for non-Western countries given that their family systems are more typically built on extended ties of kinship and remain relatively stable. Rooted in the traditional Chinese culture where families set the foundation and organization for all society, a belief in the stability of the family system has been held strongly in Taiwan. Nonetheless, family systems in Taiwan have experienced noteworthy changes that may pose important concerns for the life of children. Within the past two decades, the share of children born out-of-wedlock has tripled, and children under age 12 are becoming more likely to ever live in a family where parents are divorced. Thus, in this study we aim to: (a) describe family structure transition of children in Taiwan since birth to age three; and (b) examine the relationship and potential pathways between family structure transition and young children's developmental and behavioral outcomes.

Methods

Data came from the Taiwan Birth Cohort Study (TBCS), consisting of a nationally representative sample of 24,200 live births in 2005. Face-to-face interviews were conducted at age 6, 18 and 36 months with child's mother or primary caregiver. The interview content across all survey points contains child's developmental, behavioral and health outcomes, as well as detailed information on family characteristics such as parents' relationship status, living arrangement, socioeconomic conditions, parenting practices, and parents' health and well-being. Our analysis was based on 19,499

children who completed all three waves of surveys, yielding a response rate of 80.6%. Family structure transition is the independent variable which captures family structure at birth combined with its stability through the first three years of life and was classified into six groups: stable married, stable cohabiting, stable single, unstable married, unstable cohabiting, and unstable single. The outcome variable concerns child's cognitive and socio-emotional development at age 3 which was assessed by caregivers' report using the TBCS Developmental Inventory. Three mediators to be tested included income poverty history, level of family support and the quality of home environment. We applied hierarchical multiple regressions to compare children's developmental outcomes across types of family structure transition, and followed Baron and Kenny's criteria to justify a mediation effect.

Main findings

We first presented the distribution of family structure transition among Taiwanese children before age three. Stable married families made up the largest group (n=18,414, 94.55%), followed by married unstable (n=639, 3.28%), single stable (n=193, 0.99%), cohabiting unstable (n=91, 0.47%), cohabiting stable (n=72, 0.37%), and single unstable group (n=66, 0.34%). Entry into single parenthood due to divorce, separation or spouse's death accounted for the majority of family structure transitions for both married unstable (27.23% in the 18-month survey and 57.59% in the 3-year survey) and cohabiting unstable groups (35.16% in the 18-month survey and 20.88% in the 3-year survey). On the other hand, about half of the children in single unstable families experienced the cohabitation (31.82%) or remarriage (19.70%) of a single parent with a non-parent partner.

Table 1 presents the results from multiple regressions on two developmental outcomes. For cognitive development after family selection factors and child characteristics controlled (Model 1c), children in single stable and married unstable families scored significantly lower than their counterparts in married stable families. Nevertheless, the differences no longer existed when income poverty status was introduced (Model 2c). The measures of family support and parenting quality were respectively included in Model 3c and 4c. Both variables were statistically significant and reduced the coefficients of income poverty history. As for socio-emotional development, children living in single stable and married unstable families performed less well than those

from married stable families holding family selection factors and child characteristics constant (Model 1s). After introducing income poverty history into Model 2s, no significant difference existed between children in married unstable versus stable families and the coefficient for single stable group substantially reduces by 42.86%. The addition of family support (Model 3s) and parenting quality (Model 4s) into the models showed that the coefficients for stable single group did not change much while reduced moderately for income poverty history. That may imply, the mediating effect of family support and parenting quality can work indirectly through the income poverty status. However, it is out of expectation that children growing up in cohabiting stable families fared better in socio-emotional development than those in married stable families, an association that borders on significance ($p=0.06$) (Model 1s). Including income poverty history in Model 2s, family support in Model 3s and parenting quality in Model 4s did not reduce but even increases the coefficient for cohabiting stable group, indicating no mediating effects.

Conclusion

The majority of Taiwanese children in their early years of life live in stable intact families. The relatively small group of children who have been living in single-parent families or ever experienced parent's divorce or separation do have poorer developmental outcomes, mainly due to poverty, lack of family support and ineffective parenting quality. Interestingly, children whose biological parents keep a cohabiting form do similarly well with their counterparts in stable two-parent families, and even perform better in their socio-emotional skills. Whether the results can be linked with parental values in childrearing or socio-cultural factors embedded in Taiwan's society is worthy of further exploration.

Table 1. Hierarchical multiple regression analysis of family transition type on developmental outcomes at age three

	Cognitive development				Socioemotional development			
	Model 1c	Model 2c	Model 3c	Model 4c	Model 1s	Model 2s	Model 3s	Model 4s
Family structure transition type								
Married, stable (ref.)								
Cohabiting, stable (5)	-.24 (.23)	-.13 (.23)	-.08 (.23)	-.16 (.22)	.33 (.18)†	.39 (.18)*	.42 (.18)*	.37 (.17)*
Single, stable (4)	-.60 (.14)***	-.25 (.14)†	-.22(.14)	-.20 (.13)	-.42 (.11)***	-.24 (.11)*	-.22 (.11)*	-.21 (.11)*
Married, unstable (3)	-.24 (.08)**	-.13 (.08)	-.10(.08)	-.06 (.07)	-.12 (.06)*	-.06 (.06)	-.04 (.06)	-.02 (.06)
Cohabiting, unstable (2)	-.13 (.20)	.02 (.20)	.03 (.20)	-.01 (.19)	-.10 (.16)	-.03 (.16)	-.02 (.16)	-.04 (.16)
Single, unstable (1)	-.25 (.24)	-.10 (.24)	.00 (.24)	-.12 (.23)	-.13 (19)	-.05 (.18)	.02 (.18)	-.05 (.18)
Income poverty history								
Non-poverty (ref.)								
Intermittent poverty		-.30(.04)***	-.26 (.04)***	-.20 (.04)***		-.17 (.03)***	-.14 (.03)***	-.13 (.03)***
Persistent poverty		-.83 (.07) ***	-.76 (.07)***	-.59 (.07)***		-.41 (.06)***	-.36 (.06)***	-.28 (.05)***
Psychosocial pathways								
Family APGAR score			.08 (.01)***				.06 (.01)***	
Parenting quality								
Cognitive stimulation				.11 (.01)***				.04 (.03)***
Emotional support				.08 (.01)***				.07 (.03)***
F value	119.16	115.08	121.71	211.24	29.94	30.52	38.65	77.73
Model fit (adjusted R^2)	.078***	.086***	.095***	.163***	.021***	.024***	.032***	.066***

Note. †p<.10, *p<.05, **p<.01, ***p<.001. Standard error in parentheses. All models controlled for child characteristics (sex, preterm status), and family selection factors (mother's mental health, parental education, maternal age, cross-border marriage group)