Maternal Migration and Early Children Development in Rural China

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ABSTRACT

- With accelerating process of urbanization in rural China, many rural residents migrate to urban in seeking jobs, especially for females (Zhang, 2018; Cortes 2015).

- Female migrants contribute to local development, but also have larger influence on their child development because they are usually primary caregivers for children.

- First, most children are being left by mothers and stay at registered locations, which refers to left-behind children (Duan and Zhou, 2005)

- Second, some children migrate to host cities with their mothers, we define them as migrant children (Mu and Jia, 2016).

- One the one hand, there is a positive effect of increased income when mother migrates out.

- Also, mothers could receive more information about parenting knowledge, which helps them improve parenting behaviors.

- However, on the other hand, maternal migration would harm the outcomes of children.

- For left-behind children, they will suffer separation from their mother.

- For migrant children, they are under negative effect of discrimination both directly (e.g., inadequate health care) and indirectly (e.g., psychologically stressful)).

- Whether maternal migration helps, or harms early child development depends on the balance of the (positive) effects of increased income and parenting information against the (negative) effects of parental absence.

- Most studies lack information about parental migration history, which will also lead to a biased result because the effect differs if children experience maternal migration at different points or duration in their lives.

METHODS

Data collection
- The baseline survey was conducted in two waves in October 2017 and April 2018 at the Maternal and Child Care Service Center in Shaanxi Province.
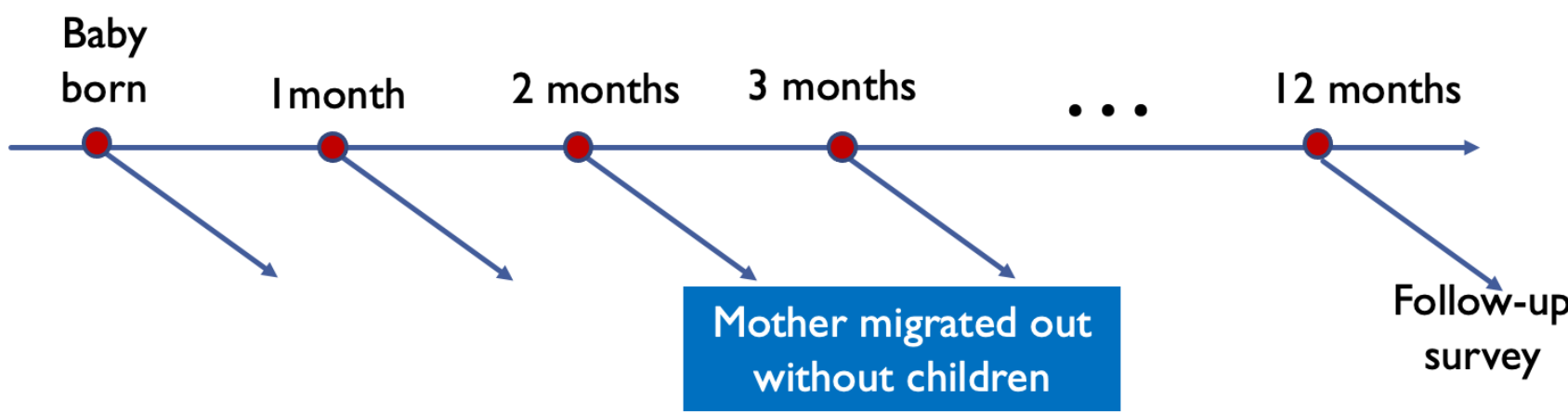- 1,091 mothers with a gestational age of 20-32 weeks attended the survey.
- We followed 770 mothers in August 2019 and surveyed them at their household.

- Baseline survey:
  - Household characteristics
  - Maternal parenting knowledge
- Follow up survey:
  - Child characteristics:
  - Children development:
  - Family care indicators, FCI
  - Maternal parenting behaviors

Baby born — 1month — 2 months — 3 months — … — 12 months — Follow-up survey

Mother migrated out without children

Mother had ever migrated out: Yes
Maternal migration time without children: 2 months
Maternal migration ratio without children : 2/12

Identify the casual effect of maternal migration on early child development
- Explore mechanism of effect
  - Positive: parenting material investment and parenting knowledge
  - Negative: parenting time investment

STATISTICAL ANALYSES

- Propensity-score matching was used to analyze the effect of maternal migration on child developmental outcomes, maternal parenting knowledge score and parenting investment.
- We make sever continuous variables for the fraction of time mother was gone and living with or separating from children and estimate a dose-response using a "generalized propensity score."
- The generalized propensity score is calculated by child and household characteristics.

RESULTS

Table 1. Comparisons of the sample characteristics between the migrant and non-migrant household

	Full sample	Non-migrant	Migrant	(1) vs. (2) p-value
	(1)	(2)	(3)	(4)
Age of child (months)	15.585	15.450	15.952	0.054
	(3.103)	(0.131)	(0.222)	
Female (1=yes;0=no)	0.557	0.561	0.560	0.967
	(0.497)	(0.021)	(0.036)	
Whether child is first baby in the family (1 = yes; 0 = no)	0.412	0.340	0.617	0.000
	(0.493)	(0.020)	(0.035)	
Premature birth (1 = yes; 0 = no)	0.055	0.050	0.071	0.310
	(0.228)	(0.010)	(0.021)	
Paternal age (year)	29.160	29.527	27.675	0.000
	(4.559)	(0.196)	(0.253)	
Maternal age (year)	26.665	26.970	25.244	0.000
	(4.308)	(0.184)	(0.257)	
Parental education	3.528	3.448	3.645	0.010
	(0.939)	(0.039)	(0.066)	
Maternal education	3.390	3.297	3.553	0.000
	(0.922)	(0.036)	(0.063)	
Household receives government welfare (1 = yes; 0 = no)	0.099	0.105	0.102	0.894
	(0.299)	(0.013)	(0.022)	
Treatment group (1=yes;0=no)	0.501	0.483	0.523	0.330
	(0.500)	(0.021)	(0.036)	
N	770	573	197	

Table 2. Ordinary least squares (OLS) regression: correlation between maternal migration and early child development outcomes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	CREDI standardized score for the overall development	CREDI standardized score for the cognitive domain	CREDI standardized score for the language domain	CREDI standardized score for the motor domain	CREDI standardized score for the soc-emot. domain	ASQ raw score at follow-up survery	ASQ final score at follow-up survery	ASQ is at risk (1=yes)
Migration & no separation ratio	0.631**	0.585**	0.618*	0.627**	0.551**	-18.335*	-18.420**	-0.063
	(0.266)	(0.264)	(0.328)	(0.252)	(0.253)	(9.355)	(9.348)	(0.096)
Migration & separation ratio	-0.730**	-0.600**	-0.925**	-0.649**	-0.579**	32.098***	32.050***	0.285***
	(0.305)	(0.303)	(0.375)	(0.290)	(0.291)	(10.545)	(10.538)	(0.109)
Observations	665	665	665	665	665	663	663	672

Table 3. PSM: Effect of maternal migration on children development

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	CREDI standardized score for the overall development	CREDI standardized score for the cognitive domain	CREDI standardized score for the language domain	CREDI standardized score for the motor domain	CREDI standardized score for the soc-emot. domain	ASQ raw score at follow-up survery	ASQ final score at follow-up survery	ASQ is at risk (1=yes)
Migration & no separation ratio	0.821*	0.628	1.005*	0.731*	0.582	-22.145	-22.697	-0.044
	(0.442)	(0.440)	(0.540)	(0.423)	(0.417)	(16.405)	(16.360)	(0.163)
Migration & separation ratio	-0.766	-0.768	-1.010	-0.703	-0.398	23.696	23.349	0.102
	(0.641)	(0.637)	(0.784)	(0.613)	(0.604)	(21.874)	(21.826)	(0.231)
Observations	683	683	683	683	683	680	680	692

Table 4. PSM: Effect of maternal migration on parenting investment and knowledge

Panel A Material Investment

	(1) Sources of play materials	(2) Varieties of play materials	(3) Play activities	(4) Household books
Migration & no separation ratio	0.546	0.837	0.381	-1.354
	(0.346)	(0.553)	(0.528)	(2.456)
Migration & separation ratio	-0.966***	-1.211**	-0.982*	-10.475***
	(0.371)	(0.597)	(0.566)	(2.633)
Observations	761	760	760	759

Table 4. PSM: Effect of maternal migration on parenting investment and knowledge

Panel B Time Investment

	(6) Telling story books with children yesterday	(7) Singing with children yesterday	(8) Playing outside with children yesterday	(9) Playing toys with children yesterday
Migration & no separation ratio	-0.085	0.147	0.052	0.070
	(0.170)	(0.169)	(0.144)	(0.143)
Migration & separation ratio	-0.061	-0.427**	-0.179	-0.160
	(0.183)	(0.181)	(0.155)	(0.153)
Observations	760	760	760	760

Table 4. PSM: Effect of maternal migration on parenting investment and knowledge

Panel C Parenting Knowledge

	(10) Standardized values of KIDI raw score	(11) KIDI accuracy score	(12) Standardized values of parenting knowledge
Migration & no separation ratio	0.377	0.031	0.503
	(0.353)	(0.034)	(0.310)
Migration & separation ratio	-0.413	-0.096***	-1.107***
	(0.377)	(0.037)	(0.326)
Observations	766	766	773

CONCLUSION

- Maternal migration has positive effect on children who has migrated with them
  - The positive effect is not from parenting investment increasement or parenting knowledge improvement
  - It may be due to positive peer effect from children in urban areas
  - Change in feeding behaviors and children nutrition

- Maternal migration has no significant effect on left-behind children
  - Mother spent less time on stimulating activities with children after migrating and separating from children
  - No increase on parenting material investment or parenting knowledge after mother migrated out

- Grandmother is primary care givers after maternal migration. They have more power on parenting decision
  - Lack scientific parenting knowledge
  - Reduce parenting time investment

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