Preplanned Studies

Health Status of Left-Behind Children and Parenting Behaviors of Caregivers in Poor Rural Areas — 6 Provinces, China, 2018

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Summary

What is already known about this topic?

China has a significant population of left-behind children, and their health and living environments remain a major public health challenge. Children under 6 years old are especially vulnerable to poor health knowledge and behaviors of their caregivers.

What is added by this report?

The prevalence of stunting, being underweight, and often sick were 13%, 3.4%, and 5%, respectively. Only 53.9% of left-behind children could eat meat often, and 59.5% could control their intake of sugary drinks. The proportions of children who had a safe home environment, a safe play environment, and no family violence were 22.5%, 75.3%, and 45.9%, respectively. The percentages of caregivers who ensured that they rarely left their children alone and were always in their sight are 76.1% and 92.4%, respectively.

What are the implications for public health practice?

The implementation of early home visits is necessary to improve the physical health and safety of the living environment of left-behind children. Primary health workers should pay attention to improving the health knowledge and behaviors of caregivers.

China is experiencing massive population movements from rural to urban areas. In 2015, official estimates suggest there are 68.77 million left-behind children aged 0–17 years old in China, accounting for 25.4% of the entire population of children (*1*). For left-behind children under the age of 6, the family provides the primary environment for socialization, and family education and healthcare parenting at this stage will affect their future physical and mental health. Some studies showed that children benefited from the allowances their parents sent home. However, some surveys show that the health status of left-behind children is still not adequate and that family separation might have long-term psychological and societal costs.

To assess the health status and family support of left-behind children aged 0–6 years old in China, a survey was conducted for left-behind children under 6 years old and their caregivers in 6 project counties of 6 provinces in 2018 based on the Rural Left-Behind Children's Health and Development Promotion Project, which was implemented in 2016–2020. The prevalence of stunting, being underweight, and often sick were 13%, 3.4%, and 5%, respectively; only 53.9% of left-behind children could eat meat often, and 59.5% could control their intake of sugary drinks. The proportions of children who had a safe home environment, a safe play environment, and no family violence were 22.5%, 75.3%, and 45.9%, respectively. The percentages of caregivers who ensured that they rarely left their children alone and were always in their sight were 76.1% and 92.4%, respectively. Overall, 77.6% were able to maintain hand hygiene in caring for children. The health status of left-behind children and the knowledge and behavior of caregivers still needs to be improved. Early home visits and comprehensive health care services may benefit left-behind children and their families.

The Chinese government conducted the Rural Left-Behind Children's Health and Development Promotion Project. The purpose of the project is to explore early home visit services and comprehensive healthcare intervention models for left-behind children and their caregivers in rural areas to provide family support and promote the health and development of left-behind children. The project was implemented in Hebei, Henan, Jiangxi, Guizhou, Sichuan, and Shanxi. One low-income county in each province was randomly sampled. Several townships from each project county were selected for investigation. The project started in 2016 and ended in 2020. This cross-sectional survey was conducted in 2018 and was the baseline survey. Ethical approval was obtained from the Peking University Institutional Review Board (No. IRB00001052-17109).

The investigator is the primary staff member in the project counties. Investigators measured the height and

weight of left-behind children, and other health indicators were self-reported by the caregivers. According to the home environment risk factor screening form, the investigators observed and evaluated the home environment and recorded and evaluated parent-child interactions and parenting behaviors by questioning caregivers. A stratified analysis was conducted based on age group (<3 years and 3–6 years) and gender (male and female). The determination of stunting and being underweight were based on the World Health Organization (WHO) Child Growth Standard (*2*). SAS software (version 9.4, SAS Institute, Cary, NC, USA) was used for analysis. Cochran-Mantel-Haenszel χ^2 tests and Fisher's exact tests were used for comparison of categorical outcomes. Continuous outcomes were analyzed by using Student's *t*-test; $P<0.05$ were considered to indicate statistical significance.

Table 1 showed the sociodemographic characteristics of left-behind children and caregivers in 6 counties. Overall, 953 children were surveyed in 6 project counties, and the response rate was 100%. Due to the lack of important demographic data, the data of 21 children were withdrawn and 932 children were included in analysis (97.8%). Of these children, 500 (53.6%) were male and 432 (46.4%) were female. The average age of left-behind children was 36.84±17.95 months; 663 (72.1%) children had parents that lived separately and migrated away from the original home; and 767 (82.3%) children had caregivers that were

TABLE 1. The sociodemographic characteristics of left-behind children and caregivers in poor rural areas — 6 provinces, China, 2018.

Variables	Shanxi	Henan	Hebei	Guizhou	Sichuan	Jiangxi	Total
Gender (N, %)							
Male	134 (52.1)	81 (56.3)	45 (43.7)	127 (58.5)	29 (46)	84 (56.4)	500 (53.6)
Female	123 (47.9)	6 2(43.7)	58 (56.3)	90 (41.5)	34 (54)	65 (43.6)	432 (46.4)
Age, months (mean±SD)	33.9±17.56	44.09±16.18	39.34±18.71	38.94±16.8	29.54±24.49	33.22±15.01	36.84±17.95
Parent migration (N, %)							
Father	142 (55.9)	5 (3.6)	47 (46.5)	3 (1.4)	1 (1.7)	24 (16.3)	222 (24.20)
Mother	3 (1.2)	0 (0.0)	0 (0.0)	1 (0.5)	0 (0.0)	30 (20.4)	34 (3.7)
Both	109 (42.9)	135 (96.4)	54 (53.5)	213 (98.2)	59 (98.3)	93 (63.3)	663 (72.1)
Insured family (N, %)							
Yes	11 (4.3)	15 (10.5)	2 (1.9)	14 (6.5)	2 (3.2)	7 (4.7)	51 (5.5)
No	246 (95.7)	128 (89.5)	101 (98.1)	203 (93.5)	61 (96.8)	142 (95.3)	881 (94.5)
Height, cm (mean±SD)	92.26±15.45	96.52±18.41	91.09±16.94	93.37±13.82	57.65±48.17	69.56±42.76	87.07±27.89
Weight, kg (mean±SD)	13.47±4.0	15.99±4.14	14.42±4.18	14.35±3.84	6.78±8.45	10.68±7.22	13.27±5.56
Caregivers' age, years (mean±SD)	43.04±14.49	55.37±6.77	51.28±13.98	55.97±7.28	55.56±9.43	54.85±11.47	51.59±12.45
Caregivers' gender (N, %)							
Male	15 (5.8)	52 (36.4)	19 (18.4)	48 (22.1)	10 (15.9)	30 (20.1)	174 (18.7)
Female	242 (94.2)	91 (63.6)	84 (81.6)	169 (77.9)	53 (84.1)	119 (79.9)	758 (81.3)
Caregivers' education level (N, %)							
Illiteracy	17 (6.6)	8 (5.6)	4 (3.9)	45 (20.7)	19 (30.2)	18 (12.1)	111 (11.9)
Primary school	81 (31.5)	49 (34.3)	32 (31.1)	112 (51.6)	38 (60.3)	87 (58.4)	399 (42.8)
Junior high school	91 (35.4)	57 (39.9)	50 (48.5)	50 (23.0)	6 (9.5)	39 (26.2)	293 (31.4)
High school	28 (10.9)	28 (19.6)	15 (14.6)	10 (4.6)	0 (0.0)	4 (2.7)	85 (9.1)
College	40 (15.6)	1 (0.7)	2 (1.9)	0 (0.0)	0 (0.0)	1 (0.7)	44 (4.7)
Caregivers' relationship (N, %)							
Mother	111 (43.2)	3 (2.1)	30 (29.1)	0 (0.0)	0 (0.0)	10 (6.7)	154 (16.5)
Father	1 (0.4)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (0.1)
Grandparents	145 (56.4)	140 (97.9)	72 (69.9)	210 (96.8)	63 (100.0)	137 (91.9)	767 (82.3)
Other relatives	0 (0.0)	0 (0.0)	1 (1.0)	7 (3.2)	0 (0.0)	2 (1.3)	10 (1.1)

grandparents. The average age of the caregivers was 51.59±12.45 years. Most caregivers were female (81.3%) and had not received high school education or higher (86.1%).

The prevalence of stunting, being underweight, and often sick were 13%, 3.4%, and 5%, respectively. Overall, 59 (6.3%) children were moderately stunted and 62 (6.7%) were severely stunted. No differences in stunting were identified between male and female children(P=0.423); however, the differences between children aged <3 years and 3–6 years old was significant. Furthermore, 21 (2.3%) children were moderately underweight and 10 (1.1%) were severely underweight. No differences were identified between <3 years and 3–6 years old for being underweight. (P=0.468) The differences between male and female was significant (P<0.001) (Table 2).

Table 3 showed the parenting behavior of caregivers in health, nutrition, and family safety. Of the 953 participants, 502 (53.9%) children could eat meat often and 555 (59.5%) could control their intake of sugary drinks. The proportions of children who had safe living environments and safe play environments were 22.5% and 75.3%; 428 (45.9%) children had not experienced family violence; the percentages of caregivers who ensured that they rarely left their children alone and were always in their sight were 76.1% and 92.4%, respectively; and 77.6% of left-behind children could maintain proper hand hygiene.

DISCUSSION

A cross sectional survey in 6 counties in China was conducted to investigate the health status of left-behind children and the knowledge and behavior of their caregivers. A total of 932 children were included in analysis. The prevalences of stunting, being underweight, and often sick were 13%, 3.4%, and 5%, respectively.

Compared with previous surveys of left-behind children in China, the growth and development of left-behind children in this study had largely better results. The prevalence of stunting and being underweight were 13% and 3.4%, respectively, which was lower than that among children aged under 5 years that the National Nutrition and Health Monitoring System reported in 2013 (19.0% and 5.1%, respectively)(*3*). The prevalence of stunting was also lower than the data from China's Food and Nutrition Monitoring in 2010 (20.3%) (*4*). The prevalence of children that were sick often was 5%, which was lower than results reported by the Fifth National Health Service Survey in 2013

TABLE 2. Prevalence of stunting and underweight across genders and age groups of left-behind children in poor rural areas — 6 provinces, China, 2018.

Item	Male	Female	*P*	<3 years	3–6 years	*P*
Stunting			0.423			<0.001
Moderate	28	31		28	31	
Severe	35	27		38	24	
Underweight			<0.001			0.468
Moderate	15	6		12	9	
Severe	2	8		5	5	

TABLE 3. Parenting behavior of caregivers of left-behind children in poor rural areas — 6 provinces, China, 2018.

Item	N	Percentage (%)
Children often washed their hands	723	77.6
Children rarely became sick	606	65.0
Children ate meat often	502	53.9
Children rarely drank sugary drinks	555	59.5
Children were not allowed to stay alone for more than an hour	709	76.1
When looking after the child, the child was always in sight	861	92.4
No family violence	428	45.9
The child did not play with animals alone	711	76.3
No risk factors in the family living environment	210	22.5

Notes: 1) N is the number of positive cases of corresponding investigation items. 2) The total number of participants is 953.

that suggested the two-week prevalence of sick often of left-behind children under 5 years was 10.5%.

Most of the parents of left-behind children migrate to urban areas to work, leaving the children to their grandparents. Most of these left-behind children were under 3 years old when their parents left. Therefore, intergenerational parenting was a common phenomenon for left-behind children, but the education level of caregivers in this study was generally low.

The 2018 census data showed that the floating population reached 241 million, accounting for 18% of the total population. In the past 35 years, economic development has driven the increase in the number of migrants and also brought opportunities for China's social development. But population migration has caused many family problems. The Fifth National Health Service Survey reported that left-behind children mainly suffered from respiratory diseases. After the illness occurred, 87% of the parents of left-behind children took their children to see a doctor and 9.4% self medicated (*5*).

Some reviews suggested that children benefited from the allowances their parents sent home through improved education and reduced child labor, which could result in improved health, but reported that family separation might have long-term psychological and societal costs (*6*). However, we found that the health and living environments of left-behind children also needed to be improved.

For children under 6 years old, the knowledge and behavior of the caregiver has an important impact on the health of the child. Most of the guardians of left-behind children were their grandparents, which was similar to the results of other studies (*7*–*8*). Although most left-behind children used various communication devices to keep in touch with their parents, they still feel lonely (*9*). The lack of grandparents' knowledge of early childhood development and physical health may adversely affect the physical, educational, and psychological development of left-behind children (*10*). Therefore, conducting early home visits might be a necessary intervention. Primary health workers can help improve the family environment and the nurturing behavior of caregivers to promote the health of left-behind children.

This study was subject to several limitations. The research sample came from underdeveloped areas in China and cannot represent other rural areas in China. Some studies compared the left-behind children with children of non-migrants and found that left-behind children had increased risk of depression and higher depression scores, anxiety suicidal ideation, conduct disorder, substance use, and wasting and stunting, but children of non-migrants were not recruited. Furthermore, the two-week prevalence and disease types of left-behind children were not collected. This may limit our understanding of the health status of left-behind children.

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