

Report on the State of Children in China



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1. Introduction

Significance of the Study

According to the 2010 China Population Census data, the country is home to 222.6 million children between the ages of zero and 14, accounting for 16.6% of the total population in mainland China (National Bureau of Statistics of China, 2011). Since the early 1980s, the living conditions and environments of Chinese children have changed dramatically due to rapid industrialization, massive urbanization, and a stringent family planning policy (see World Bank, 2015a).

On the one hand, with industrialization and economic development, the economic conditions and physical well-being of Chinese children have generally improved. This is especially true for children in rural areas where tens of millions of parents can earn extra income from industrial or service jobs other than agriculture (NWCCW, NBS, & UNICEF, 2014). Meanwhile, China's family planning policy that allows one child for each urban couple and at most two for a rural couple has led to smaller family size. This has helped boost the economic resources and emotional cherishment for the single child to the extent that they are treated by their families like "little emperors" (Rosenzweig & Zhang, 2009).

However, the unbalanced economic growth in recent decades has also posed serious challenges for the well-being of children, especially those in rural areas. Four challenges especially stand out. First, economic disparity between rural and urban areas has remained and even increased in this period. The urban per capita disposable income has been over three times the rural per capita net income (National Bureau of Statistics [NBS], 2011). In 2012, 128 million Chinese people, mostly rural residents, were still living in poverty with an annual per capita income of less than 2,300 Yuan (equivalent to 1.6 USD per day) (China Academy of Sciences, 2012). The income gaps between urban and rural areas have contributed to rural-urban disparities in child care and educational resources available to children. Second, multiple researchers have identified various developmental deficits for migrant children (Wang & Zou, 2010). Due to exclusionary policies and practices against migrant laborers in many municipalities, children of migrant workers have difficulty attending local public schools and gaining access to other public services (Chan, 2009). The relatively meager income, poor living conditions, and housing instability of most migrant laborers have also put their children at a disadvantage in comparison to their urban counterparts.

Third, exclusionary policies imposed in many urban areas have forced migrant laborers to leave their children behind in rural homes. In 2010, there were 61 million children who were left behind in rural areas, 22 percent of all children in China (NWCCW, NBS, & UNICEF, 2014). Previous research shows long periods of parental absence may adversely affect the psychological, social, and cognitive development of children, leading to problems such as low self-esteem, depression, and lack of motivation at school, among others (Wen & Lin, 2012; Xiang, 2007). Without proper adult supervision, left-behind children are also more likely to be victimized (Chen, Huang, Rozelle, Shi, & Zhang, 2009). Fourth, other government policies and practices in some rural regions – particularly the consolidation of rural schools – have exacerbated the plight of many rural children. This policy is blamed for the fact that children living in remote areas have difficulties accessing education.

The conditions of Chinese children, especially left-behind children and migrant children, have caused great concern among government administrators and the general public. There have been plenty of journalistic reports on the plight of rural children. In addition to media coverage, many organizations and scholars, both in China and abroad, have conducted academic studies and research on the socioeconomic conditions of children in China and their developmental outcomes. They have also made policy recommendations to address the developmental disparities between rural and urban areas and improve the well-being of children (Xiang, 2007; All-China Women's Federation, 2013; New Citizen Program, 2014; Zou, Qu, & Zhang, 2005).

Despite the many studies of the situation of children in China, most of them are focused on a limited number of aspects of child development without providing a full picture of children's conditions. For instance, in terms of child well-being, official government reports only present limited indicators, such as infant mortality, physical health, and school enrollment, while social-emotional well-being indicators and other subjective well-being indicators – such as self-esteem and sense of happiness – are absent. Besides, most studies on child well-being are based on non-representative samples drawn only from a few regions and certain age groups. Therefore, their findings cannot be generalized to the whole child population at a national level.

Our study, which is based on nationally representative household survey data, strives to offer a comprehensive view of the conditions of today's children in China. In this report, we cover all major domains of child development, including children's physical health, mental and psychological well-being, social well-being, and their cognitive and educational development. Our report focuses on examining the developmental disparities between children of rural and urban regions and between children who have different living arrangements (for instance, between left-behind children and migrant children). We also strive to reveal variations in the ecological contexts of these children (i.e., the different conditions of their families and communities that may have contributed to their different developmental trajectories).

Hopefully our efforts will help identify the most vulnerable groups of children in China and their developmental deficits. Our efforts to find the risk and protective factors in these children's social contexts may also help government agencies and other stakeholders to formulate and implement targeted policies and programs to promote child well-being.

Multiple Contexts of Child Well-being

Scientific research in child development has long recognized the importance of living environments and nurturing relationships for the healthy development of children (Bronfenbrenner, 1979; Shonkoff & Phillips, 2000). Early childhood experiences in multiple contexts – such as families, peer groups, schools, and communities – will have a profound long-

term impact on children's development and well-being. Typically, children spend most of their infancy and toddlerhood with parents and other caregivers at home. Therefore, aside from economic resources of the family, a nurturing relationship with caregivers and a cognitively stimulating home environment are essential to children's social and cognitive development (Conger, Conger, & Martin, 2010). Child care institutions and schools are also major venues where children learn important social and emotional skills as well as academic knowledge (Durlak, Weissberg, Dymnicki, Taylor, & Schelling, 2011; Reynolds, Temple, & Ou, 2011). These skills formed in the school years are essential for children to become constructive members of society when they grow up. One last major social context in which children learn to interact is the neighborhood. Neighborhood social norms, collective efficacy, safety, poverty level, and access to social service facilities are all important to the well-being of children and their caregivers alike (Sampson, 2003).

Given the close relationship between living environment and well-being, children of lower socioeconomic status often face multiple disadvantages. Without effective policy interventions, the toxic environments of these vulnerable children will have a serious impact on their short-term development and long-term well-being. Therefore, this study aims to understand various aspects of social contexts, such as family functioning and community quality, that may contribute to the developmental deficits of vulnerable children in China. We pay special attention to the rural-urban disparities in child well-being, describing the developmental deficits of rural children, especially left-behind and migrant children, in contrast to their urban counterparts. We also examine the family and social contexts of the children to reveal various factors that may have contributed to the rural-urban disparities of child well-being.

Data and Methodology

This study is based on the 2010 baseline wave of the China Family Panel Studies (CFPS). Designed and administered by Peking University, CFPS is a longitudinal survey of a nationally representative sample of nearly 15,000 families.¹ It adopts a stratified three-stage cluster sample design where over 600 urban and rural communities are selected. From each community, 25 households are chosen at random (see Xie, Qiu, & Lu, 2012). Data are collected for all sample communities and all members of sample households, including family members who are migrant workers. The 2010 CFPS has complete data for 8,990 children between the ages of zero and 15 years old, including caregiver reports for all children and direct interviews with children between 10 and 15 years old. Information collected includes outcomes on major domains of child well-being such as physical health, social-emotional development, cognitive development, and educational achievement. Contextual information includes family living conditions, poverty level, parent education and employment, parenting behavior, community contexts, and other areas. The wealth of information on children provides us with the opportunity to achieve a comprehensive understanding of the development and well-being of the children in China.

Due to the complex sampling design and oversampling of children in some strata, the 2010 CFPS data introduce a population weight variable that accounts for sampling design, nonresponse, and post-stratification adjustment (Lu & Xie, 2013). In order to depict an unbiased and accurate picture of the conditions of children in China, we decided to use the survey data analysis methods that take into account the survey design effect and unequal population weights. The statistical analysis software we used is Stata/SE 12, and we applied Stata's survey data analysis commands in all of our analysis (Stata Corp, 2013).

¹ Six provinces, Hainan, Inner Mongolia, Ningxia, Qinghai, Xinjiang, and Tibet, are not included in the sample for various reasons. Four of the regions are in remote border regions and Hainan is a small island province located in the South China Seas. Together they make up only 5 percent of the total population in China.

We conducted univariate and bivariate analysis to examine the child well-being outcomes in different social and familial contexts and analyze the associations between them. We also adopted multiple linear and logistic regression methods to understand the unique contribution of demographic and contextual factors to child well-being outcomes.

The basic demographic information of the sampled children grouped by urban and rural community type is shown in Table 1.1. The grouping of communities as rural or urban is based on whether the sampled community is reported by the village administrator as a Village Committee (村委会) or Urban Resident Committee (居委会). As shown in the table, 27 percent of the sampled children are living in urban communities. Our estimate of the urban population is conservative compared to the estimate of the National Bureau of Statistics, which, based on different criteria, identifies half of the population as urban. Our estimate is more in line with the residence registration (*hukou*) status of the children since it captures most of the 24 percent of children with urban *hukou* but excludes most children with rural *hukou*. Based on their family structure, number of parents living at home, and community type, we further categorized the sample children into five groups: children in rural intact families (with both parents married and at home), urban intact families (with both parents married and at home), children left behind by one or both parents (both parents married but only one or no parent at home), migrant children without local *hukou* (both parents married), and single-parent or no-parent children (parents divorced, or one or both parents died or unknown). As shown in Table 1.1, 67 percent of all children live in intact families with both parents married and living together with the child. The left-behind children are concentrated in rural communities because their father or mother (or both) have left home to work in urban areas. They number over 49 million, or 21 percent of all children in China.² Migrant children are those whose *hukou* is not within the local county or district where they currently live with their parents. They are called migrant children because, most probably, their parents have migrated to the current community in search of jobs and brought the children along. Our analysis indicates that over 16 million children are those who have migrated to new communities with their parents, nearly 7 percent of all children.³ While 60 percent of the migrant children live in urban areas, the remaining migrant children live in rural communities. The last group of children (about 5%) is single- or no-parent children because one or both parents have died or their parents are divorced and no longer living with the children. Nearly two-thirds of these children live in rural areas.

2 According to the report by National Bureau of Statistics of China(2105), the 2010 Census identifies 69.73 million children aged zero to 17 as left-behind children, taking up nearly 25% of the child population in China. If we count in the children from single/no parent families whose parents have migrated to work, our estimate is similar to the census report.

3 The 2010 Census data indicates that the total number of migrant children zero to 17 years old numbered 35.81 million, about 12 percent of the total child population(see Duan, Lu, Wang, & Guo,2013). If we exclude about 38 percent of the children that migrate within a county/district and exclude the children who are 16 or older, the total number of migrants will be nearly 17 million, which is similar to our estimate based on the CFPS data. Since the CFPS data we can access does not provide information on within-count migration, we cannot identify children who have migrated within counties/districts.

Table 1.1 Characteristics of Children in Rural and Urban Areas in China

Characteristic	Rural		Urban		Total	
	%	<i>n</i>	%	<i>n</i>	%	<i>N</i>
All children	73.1	6,795	26.9	2,195	100	8,990
Child age						
0 to 5	37.0	2,526	34.1	817	36.2	3,343
5 to 10	31.2	2,068	31.8	681	31.4	2,749
10 to 15	31.8	2,201	34.1	697	32.4	2,898
Gender *						
Female	45.1	3,189	47.4	1,049	45.7	4,238
Male	54.9	3,606	52.6	1,146	54.3	4,752
Ethnicity *						
Ethnic minority	19.1	940	9.9	188	16.6	1,128
Han ethnicity	80.9	5,855	90.1	2,007	83.4	7,862
Hukou Registration *						
Urban hukou	7.6	584	69.0	1,533	24.1	2,117
Rural hukou	92.4	6,211	30.9	662	75.9	6,873
# of Parents at Home *						
None	15.0	1,001	7.9	174	13.1	1,175
1 parent	15.5	1,126	12.7	268	14.8	1,394
2 parents	69.5	4,668	79.4	1,753	72.1	6,421
Residence Type *						
Rural intact family	67.1	4,494	0.0	0	49.0	4,494
Urban intact family	0.0	0	66.6	1,463	17.9	1,463
Left-behind children	24.8	1,744	12.0	265	21.4	2,009
Migrant children	3.7	273	15.4	344	6.8	617
Single/No parent family	4.4	284	6.0	123	4.8	407
Total	100.0	6,795	100.0	2,195	100.0	8,990

Note: 2010 CFPS child sample N=8,990. Percentages are weighted; counts are unweighted.

** $p < .05$ based on designed-based Pearson chi square statistic.*

Overview

Including this introductory section, this report has nine sections. In Section 2, we provide a general overview of the national environment and policy context for the development and well-being of the children. We describe the *hukou* system, the urbanization process, the family planning policy, and school consolidation, and discuss their implications for child well-being. Sections 3 through 6 address different domains of child well-being outcomes in rural and urban areas and by residence type. Section 3 covers the economic well-being of children in China, including family poverty level and living conditions. Section 4 describes the children's physical health, including incidences of low birth weight, sickness and hospitalization, and overweight and obesity. In Section 5, we address the psychological and social well-being of children, such as sense of happiness, depression, self-esteem, social skills, and number of good friends. Section 6 analyzes children's cognitive development and educational outcomes. We examine the proportion of children in kindergarten and schools in rural and urban areas as well as their study performance, vocabulary and math test scores, and school satisfaction. Section 7 examines the family and community contexts of children, including family structure, parenting behavior, and community resources. In Section 8, we detail a series of multiple regression models we ran to estimate the effects of different aspects of family and social contexts on child development. Section 9 summarizes our findings and points out their major policy implications for promoting the welfare of children in China.

2. Laying the Groundwork: National Environment and Policy Context

Though child well-being and development is a universal concern, each country faces unique challenges, including those presented by the cultural and political context. In China, the most influential contexts are the *hukou* system and the country's controversial family planning policies. These institutions have posed specific challenges to child development in China, as we describe below.

The urban rural divide and the *hukou* system

Established in the late 1950s during the heyday of central planning policy, the *hukou* system is the Chinese household registration system that categorizes an individual resident as a “non-agricultural resident” (居民) in an urban area or an “agricultural resident” (农民) in a rural area. *Hukou* ties people's access to public services and welfare such as education, employment, and healthcare to their residential status, leading to an entrenchment between rural and urban residents (Chan & Zhang, 1999; Wang, 2005, 2010). Urban residents are entitled to a range of social, economic, and cultural benefits that rural residents cannot receive, creating an underclass for rural residents. This has led to high income inequality between rural and urban residents and posed great barriers for residential and social mobility of rural residents.

The *hukou*-based governance system has largely limited rural migrant workers' access to services and welfare in urban areas, including education, health care, pensions, and life insurance. While they can move freely to seek jobs, they cannot settle down with full urban resident status, full rights as citizens, and unlimited access to public services and social welfare services. Their children are denied access to urban public schools, and oftentimes have to be left behind in the countryside. Even in urban areas where migrants outnumber local residents and contribute tremendously to local economic growth, the distribution of public resources is only intended for local *hukou* residents (Xiang, 2007).

As a response to the increasing social problems, the *hukou* system has been gradually reformed since the 1990s. “Temporary urban residency permits” for migrant workers to work legally in cities were launched in the 1990s. Since 2001, reform measures by various local governments have further weakened the system due to the overwhelming number of rural residents working in cities and their contribution to urban economy. But these reforms have not fundamentally changed the system. *Hukou* continues to contribute to China’s rural and urban disparity (Chan & Buckingham, 2008). On December 4, 2014, the Legal Affairs Office of the State Council released a draft residence permit regulation intending to abolish the *hukou* system in small cities and towns. The implementation is ongoing and the effect of this latest policy remains to be seen.

The urbanization drive, migrant population, and rural family structure

Despite the rural-urban divide created by the *hukou* system, China experienced rapid industrialization and urbanization in the last two decades. According to the NBS, by the end of 2013, 53.7 percent of the total population lived in urban areas, up from 26 percent in 1990. The massive transfer of rural workforce from countryside to cities has greatly contributed to this dramatic jump (Ren, 2013).⁴ However, due to the *hukou* barriers discussed above, few of the migrants can obtain permanent urban citizenship that offers benefits of, for instance, government-provided housing and children’s education (Chan & Buckingham, 2008). Besides institutional discrimination, in cities there is also cultural and individual discrimination against people with rural *hukou* (Jin, Wen, Fan, & Wang, 2012). Therefore, most migrant workers and their families can hardly settle down in cities. According to the NBS, there were 168 million rural-urban migrant workers by the end of 2014. Around 130 million workers migrated alone and only 35 million migrated with families (National Bureau of Statistics of China, 2015); women and children are often left behind in the countryside, leading to the prevalent split households in rural areas (Guo & Huang, 2014; Ma, Xu, Qiu, & Bai, 2011; Ye, Wang, Wu, He, & Liu, 2013; Zhang & Zeng, 2013).

Given this context, the children of migrant workers have been largely disadvantaged, whether they are migrant children in urban cities or children left behind in rural areas. According to the All-China Women’s Federation (ACWF, 2013), by the end of 2010, there were around 35.8 million rural-to-urban migrant children between ages zero and 17. They are faced with many institutional and cultural barriers to living in their new homes, most important being limited access to education. In general, migrant children face formidable barriers to enrolling in local public schools (Pong, 2014). With a few exceptions, migrant children can be admitted to local schools as long as they pay extra fees, which most migrant families cannot afford. Even if migrant children can afford an urban school, they have to return to their *hukou* registered place to take the entrance examination for a higher level of education. However, what children have learned in their schools may be substantially different from what is taught and tested in the *hukou* residence, making it difficult to enroll in a higher level of education (Ding, 2012; Xiang, 2007). Aside from educational barriers, migrant children also suffer from other problems, including emotional difficulties such as low self-esteem and loneliness, behavioral problems such as smoking and drinking, and physical health problems such as a higher prevalence of infectious diseases (Hu, Fang, & Lin, 2009; Luo, 2005; Zhang, Qin, & Wu, 2010).

Children who are left behind in rural areas also encounter many challenges. According to the All-China Women’s Federation (2013), there were more than 61 million rural left-behind children in China at the end of 2010, 21.88

⁴ Besides the influx of immigrants, the en mass reclassification of many rural areas surrounding central cities and many rural towns as surban has also raised the percentage of urban population (see Ren, 2013 for details).

percent of the total population of children. Unlike migrant children, the biggest challenge faced by left-behind children is the absence of parents. As reported by the ACWF, 46.74 percent of the left-behind children are left behind by both parents, of which 32.67 percent are living with grandparents, 10.7 percent are living with other people (relatives or friends of their parents), and 3.37 percent are living on their own. While the money that migrant workers sent home may increase household income, migration has led to a lack of parental support and supervision of children's development. Grandparents, as primary guardians, usually have low literacy skills and limited energy to educate and take care of children. As a result, left-behind children are susceptible to subpar educational achievement, increased risky behaviors, psychological difficulties, physical safety problems, human trafficking, sexual harassment, and other types of abuse (Chen, et al., 2009; Pan, 2014; Zheng and Wu, 2014). However, there is also competing evidence indicating that parents' migration is not necessarily detrimental to child welfare and development, mainly due to return transfers of income and parents' recognition of the importance of education after migrating to urban cities (Ren & Treiman, 2013; Wen & Lin, 2012; Fan, Su, Gill, & Birmaher, 2010). Simply put, parental migration has been an important factor in child welfare and development of rural families for both left-behind and migrant children.

Family planning policy and family structure

In addition to internal migration, family planning policies in China have also had major influence on child development. Numerous studies have documented the effect of family structure and parenting style on child development. According to Becker (1981), there is a strong negative correlation between the quantity of children and quality of their lives, indicating that lower fertility may encourage people to increase their investments in children, including providing better education, more parenting time, and more emotional and financial supports. The impact of the controversial family planning policy, also known as the "one-child policy," on child development has been intensely debated over the last two decades. On one hand, academic findings support the positive effect of the quantity-quality tradeoff brought about by the one-child policy (Rosenzweig & Zhang, 2009). It is good for child well-being in terms of greater parental investment and more available resources for children. On the other hand, single children in a family may be spoiled by parents who focus all their love and money on them. Prior research has studied the psychological consequences experienced by children without siblings. Despite mixed conclusions, there is evidence that single children tend to be self-centered, less independent, and less sociable. As a result, they have been called "little emperors" in China (Liu, Wang, Yin, & Gu, 1988).

A more serious effect of the one-child policy is the change of the sex ratio at birth (SRB). According to the NBS data, SRB in China peaked at 1.20 in 2008, indicating 120 newborn boys for every 100 newborn girls. At the end of 2014, the SRB is 1.16. Selective abortion of female fetuses prompted by the one-child policy has led to great gender imbalance and a high surplus of men. This ratio is higher in rural areas where preference for boys is stronger and fetal gender screening devices are easily accessible (Festini & de Martino, 2004). In urban areas, however, studies suggest that daughters have benefited from the one-child policy: they have enjoyed unprecedented parental support because they do not have to compete with brothers for parental investment (Fong, 2002).

The family planning policy that has been implemented for over three decades has led to the gradual decline of the child population in both urban and rural areas. The dwindling number of school-aged children has triggered school consolidation practices in many areas, with inadvertent consequences for child well-being, as we discuss next.

School consolidation and dwindling child population in rural areas

Besides the persistent challenges posed by migration and family planning policies, there has been a special challenge to child well-being due to an educational policy change that began in the early 2000s: the launch in 2001 of “Adjustment on the Layout of Rural Schools,” also called “rural school closures and consolidations.” This campaign aimed to close a large portion of village primary schools and expand “central” schools located in townships and county seats. The campaign was stopped in 2012 due to its controversial effects on child education.

The policy was formulated in response to the sharp decline of the school-age population in rural areas caused by the one-child policy and rural-urban migration (Lei, 2010; Wan, 2009). The government also wanted to improve education quality and equity by reallocating and centralizing education resources from failing village schools to “central schools” (Fang & Liu, 2013; Xu, 2013). The direct outcomes of this policy were remarkable. In 2000, there were 440,000 rural primary schools in China. Ten years later, this number had decreased to 230,000 – a decrease of over 50 percent (21st Century Education Institute, 2013). On the positive side, the school consolidation policy may have partially achieved its goals. It may have boosted educational efficiency through economies of scale (Fan & Guo, 2009; Li, Zeng, & Yang, 2012) and improved education quality and promoted regional equity (Fang & Liu, 2013; Ma, Lu & Li, 2011). However, school consolidation policy has also been attacked due to its adverse effect on rural children’s development.

There are many examples of this adverse effect. First and foremost, education has become less accessible to students living in remote areas, leading to increased dropout rates of rural students. Many studies reported that school relocation strikingly increased the distance between students in remote areas and central schools in townships, leading to higher transportation costs and higher safety risks (Chu & Zhang, 2012; Ke, Xu, & Zhang, 2015; Yi et al., 2012). Researchers also argue that the policy has exacerbated the polarization between remote villages in the county periphery and urban areas in the county core, increasing the potential for greater regional disparities. Thus, the claimed policy goal of promoting equity in education was not achieved (Cai & Kong, 2014; Fan & Hao, 2011; Xu, 2013). To address the problem, the Chinese government launched the “no tuition and no fee” national policy and also required central schools to provide school shuttle services. However, the effect on school enrollment has been minimal (Xu, 2013).

National policy has also encouraged the construction of boarding schools in response to increasing distances between school and home. However, due to a shortage of funding and human resources, many boarding schools in rural areas suffer from unsanitary and overcrowded living conditions. Besides, young children living far away from intimate family members often suffer from psychological problems due to the lack of family supervision and parental emotional support (Cui, 2012). Taken together, unqualified boarding schools have detrimental effects on students’ physical and psychological health and pose high risks in food and living safety for students (Chu & Zhang, 2012; Wan, 2009). In addition, school consolidation has also led to giant classes in central schools with inadequate teachers and facilities, which is detrimental to education quality (Fang & Liu, 2013; Tao & Lu, 2011).

Opponents of this policy also claimed that this campaign has caused a cultural crisis in rural communities. The closure of village schools makes fragile village culture more vulnerable, leaving villages to suffer further poverty and other types of decline (Xiong, 2009; Zhao & Wu, 2015). Overall, the school consolidation policy has presented special challenges to child well-being and development in the countryside, especially in remote rural areas.

3. Economic Well-being

Economic well-being refers to the material resources and conditions available to children in their immediate living environment (such as in their families). While various aspects of economic well-being in family and social contexts are not domains of child development, they do have major and direct impact on child development. Persistent family economic hardship and early material deprivation not only affect children's physical health – leading to problems such as malnutrition and stunting of growth – but also lead to long-term detrimental effects on socioemotional, self-regulation, and cognitive development due to their toxic influence on family processes and parenting (Bradley & Corwyn, 2002; Hamoudi, Murray, Sorensen, & Fountaine, 2014; Linver, Brooks-Gunn, & Kohen, 2002; Yeung, Linver, & Brooks-Gunn, 2002). Eradicating extreme poverty is one of United Nation's eight Millennium Development Goals (MDGs).⁵ Despite China's rapid economic development for the past three decades, at the end of 2012 there were still nearly 100 million people living below the poverty line of 2,300 Yuan⁶ per capita annual net income (World Bank, 2015a). Furthermore, the poorest people are concentrated in poor rural communities that often lack basic health care facilities, public hygiene, and infrastructure.

In this section, we examine the economic well-being of Chinese children, including the living conditions of children, especially those living in poverty. We compare children living in rural and urban areas and discuss the extent of rural-urban disparities in various aspects of economic well-being. We also examine the family economic status of children of different residence types, including rural children who are left behind by one or both migrant parents and migrant children living with their parents in urban areas.

5 See MDG's website at: <http://www.un.org/millenniumgoals/>.

6 The rural poverty line of 2300 yuan per year is equivalent to 1.6 USD per person per day based on Purchasing Power Parity exchange rate in 2005. See NBS. (2015). Poverty Monitoring Report of Rural China 2015.

As shown in Table 3.1, over 20 percent of Chinese children live below the poverty line of 2,300 Yuan per capita (1.6 USD per day at the 2005 PPP exchange rate). Less than half of the children live in households with access to tap water, clean fuel for cooking, flush toilet, or trash collection service.

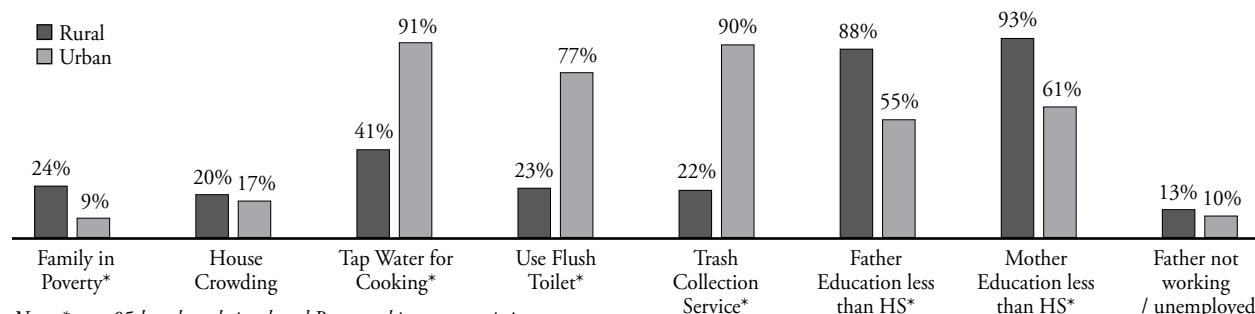
Table 3.1. Distribution of Children’s Family Conditions in Rural and Urban China in 2010

Variables	Community Type		
	Rural (%)	Urban (%)	Total (%)
Family in poverty*	24.4	8.9	20.2
House crowding	20.2	16.9	19.3
Tap water for cooking*	41.1	90.6	45.6
Clean fuel for cooking*	35.4	84.9	48.7
Use flush toilet*	23.3	76.6	37.7
Trash collection service*	22.4	89.7	40.5
Father education less than HS*	88.2	55.3	79.4
Mother education less than HS*	93.3	61.3	84.7
Father unemployed/not working	12.8	9.7	11.9

Note: CFPS child sample N = 8,990, results are weighted. * $p < .05$ based on design-based Pearson chi square statistic.

Furthermore, the rural-urban disparity in poverty level and living conditions is striking, as shown in Chart 3.1. While 9 percent of urban children live in poverty, over 24 percent of rural children live in poverty. The living conditions of rural children are also much poorer with most rural families having no tap water, flush toilets, or trash collection service.

Chart 3.1. Family Conditions of Children in Rural and Urban China in 2010



Note: * $p < .05$ based on design-based Pearson chi-square statistic.

Source: CFPS (2010).

As shown in Table 3.1, the educational levels of children’s parents in China are fairly low. Seventy-nine percent of fathers and 85 percent of mothers have no high school diploma. The rural-urban disparity is equally stark, with 88 percent of rural fathers and 93 percent of rural mothers having less than high school education versus 55 percent and 61 percent respectively for urban children (see Chart 3.1). In addition, a higher percentage of rural fathers are unemployed or not working than urban fathers (13% versus 10%).⁷

⁷ Those unemployed or not working only include people who clearly indicate they are not working or unemployed. Since all migrant workers and those with unknown employment status are counted as employed, our estimate of the unemployment rate should be conservative.

A comparison of children in different residential types reveals that children in urban intact families have better family financial and living conditions as well as having a higher level of parents' education (see Table 3.2). Although less well-off than urban children, migrant children are still doing better than the other three groups of children: their family poverty level is lower than that of children in rural intact families, left-behind children, and children in single/no parent families. Their parents' educational level is also higher. Left-behind children are similar to children in rural intact families in family poverty level. They report less house crowding, but a lower proportion of the left-behind children report using tap water and clean fuel than rural intact families, probably due to the fact that most left-behind children are located in less developed central and western regions of China. However, a higher proportion of the parents of left-behind children have a high school education than parents of children in rural intact families. This is because parents of left-behind children tend to be younger and have received more schooling.

Table 3.2. Percent Distribution of Children's Family Conditions by Residence Type in China in 2010

Variables	Rural Intact (%)	Urban (%)	Left Behind (%)	Migrant (%)	Single/No Parent Family (%)
Family in poverty*	23.6	6.6	23.9	11.8	31.9
House crowding *	20.9	15.7	16.6	20.1	26.9
Tap water for cooking*	44.3	91.3	40.0	71.8	59.8
Clean fuel for cooking*	39.3	85.0	33.8	72.4	42.6
Use flush toilet*	24.2	76.5	26.8	64.9	39.8
Trash collection service*	26.1	91.5	22.1	67.2	40.7
Father education less than HS*	88.5	51.3	84.1	70.9	82.8
Mother education less than HS*	93.5	58.4	89.6	75.0	85.1

*Note: CFPS child sample N = 8,990, results are weighted.
* p < .05 based on design-based Pearson chi square statistic.*

By far the most economically disadvantaged are children in single/no parent families. Nearly one third of these children live in poverty, in contrast to 7 percent of urban children and 24 percent of children in rural intact families and left-behind children who live in poverty. Children in single/no parent families are also more likely to report house crowding. Although a higher percentage of their families use tap water, clean fuel, a toilet, and trash collection service, this is largely because some single/no parent families live in urban areas where public utilities are more accessible.

The results described above reveal a glaring disparity between rural and urban children in various aspects of economic well-being. Low parental educational attainment, unemployment or underemployment, low family income, and poorer living conditions put rural children at a disadvantage and pose great risks for their development. Children from single/no parent families in both urban and rural areas are the most economically disadvantaged.

4. Physical Health

Physical health refers to the biological status of children, including their overall physical functioning, incidence of disease and hospitalization, age- and gender-appropriate body mass index (BMI), and healthy lifestyle (Moore et al., 2008).

Physical health is the foundation of children's overall development and affects all other domains of child well-being. Physical health indicators such as low birth weight, infant mortality rate, and malnutrition have long been the focus of the health promotion policies and intervention programs in China (for instance, see Chinese Children Development Outline released by State Council⁸). As indicated by official statistics, the physical status of children has greatly improved in the past half century with the increasing availability of health care services and better living conditions (Meng et al., 2012).

This section describes the various aspects of physical health of children in China based on the 2010 CFPS survey data. We cover the following indicators: the rate of low birth weight children, incidence of sickness and hospitalization, health insurance coverage, overweight and underweight, and regular exercise behavior.

We define low birth weight as a weight of 2.5 kilograms (5.5 pounds) or less at birth for the children. As birth weight in the CFPS survey is reported by the caregiver instead of measured objectively, we restrict the sample to zero to three-year-olds in order to minimize recall bias. Table 4.1 indicates that low birth weight children account for 8.5 percent of all zero to three-year-olds. According to their caregivers, 30 percent of all children have been sick in the last month, and nearly eight percent of all have been hospitalized in the last year. Medical insurance programs, most of them publicly funded, are used by just 63 percent of children.⁹ For healthy life style, we use self-reported frequency of physical exercise in the past month as the indicator. As shown in the table, 72 percent of children between 10 and 15 years old have engaged in physical exercise twice or more in the last month.

8 See “中国儿童发展纲要(2011-2020)” http://www.gov.cn/zwjk/2011-08/08/content_1920457.html

9 Only 10 percent of the children have private or commercial medical insurance plans. Public health insurance programs include New Rural Cooperative health care, urban employee health insurance, urban resident health insurance (see Chen, Jiang, & Huang, 2009).

The other major indicator of child physical soundness is the body mass index (BMI) which is a person's weight in kilograms divided by the square of height in meters. Since a high BMI often indicates high body fat, BMI can be used to screen for weight categories such as obese or overweight that may lead to health problems. As there are no national standards for BMI for age in China, we use the United States CDC's child growth standards instead. We calculated each child's BMI percentile from its gender-specific BMI for age and classified the children as obese (\geq 95th percentile), overweight (85th to 95th percentile), normal (5th to 85th percentile) and underweight (\leq 5th percentile).¹⁰

As shown in Table 4.1, 19 percent of the children aged one to 15 years old are underweight, while eight and 18 percent are overweight or obese, respectively.¹¹ Only 55 percent of all children in China have a BMI classified as "normal." We reiterate that body weight and height of the children used to calculate their BMI are reported by caregivers instead of measured; therefore, some percentiles may not be accurate.

Table 4.1. Distribution of Children's Health Conditions in Rural and Urban Areas in China in 2010

Variables	Community Type		
	Rural (%)	Urban (%)	Total (%)
Low birth weight (age 0-3 years old) *	9.8	5.0	8.5
Sick last month	30.1	28.9	29.8
See doctor last year *	48.6	55.4	50.4
Hospitalized last year	7.3	8.7	7.7
Have medical insurance *	64.5	58.3	62.8
Self-reported health (10-15 years old)	73.0	74.3	73.4
Exercise last month (10-15 years old)	70.6	74.8	71.8
BMI Categories (1-15) *			
Underweight	19.1	17.9	18.8
Normal	52.9	60.9	55.1
Overweight	8.1	9.0	8.3
Obese	20.0	12.2	17.8

Note: Sample sizes vary according to age group, results are weighted.

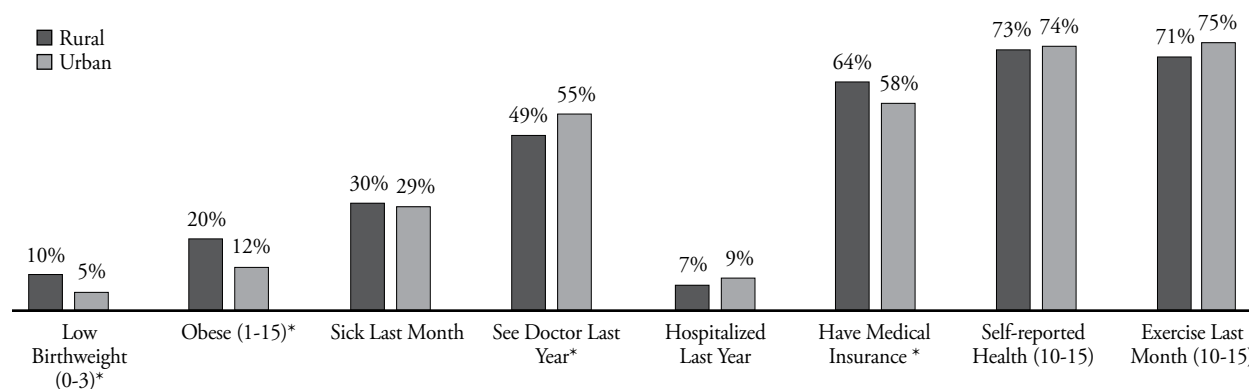
** $p < .05$ based on design-based Pearson chi square statistic.*

10 See http://www.cdc.gov/healthyweight/assessing/bmi/childrens_bmi/about_childrens_bmi.html.

11 In the US, among young people aged 2 to 19, about 31.8 percent are considered to be either overweight or obese (<http://www.niddk.nih.gov/health-information/health-statistics/Documents/stat904z.pdf>). See also Ogden, Carroll, Kit, & Flegal, 2014.

There is an obvious rural-urban disparity in low birth weight and child obesity. As shown in Chart 4.1, while 5 percent of urban children aged zero to 3 have a low birth weight, nearly 10 percent of rural children do. Poverty, malnutrition, lack of prenatal care, and poor living and working conditions of some rural families may have contributed to low birth weight (Kramer, 1987). Additionally, rural children are more likely to be obese than urban children (20% vs. 12%).¹² Our finding also shows that, although there are similar proportions of rural and urban children who get sick, rural children are less likely to see a doctor than urban children. This is more likely due to a lack of availability of or access to medical services in rural areas rather than a reflection of their different health status. An encouraging finding for rural children is that 64 percent of rural children have health insurance in contrast to 58 percent of urban children. This reflects the achievement of the New Rural Cooperative Medical Care that was launched in 2003 (Wagstaff, Lindelow, Wang, & Zhang, 2009; World Bank, 2005). Although the coverage and payment standards of the rural program are not as generous as the medical insurance types enjoyed by many urban residents, it still can protect rural families from financial devastation in case of severe illness and get children the treatment they need (Fan, Xie, & Yin, 2009; Wang, Gu, Du, & Wang, 2007; Yao & Zhang, 2013).¹³

Chart 4.1. Health Conditions of Children in Rural and Urban Areas in 2010



Note: * $p < .05$ based on designed-based Pearson chi square statistic.
 Data Source: CFPS (2010)

12 This finding is different from some prior research findings showing a lower percentage of rural children as obese than urban children (e.g., Ministry of Public Health, 2012).

13 Studies also show that the New Rural Cooperative Medical Care increases use of preventive care, but does not lead to more use of formal medical service or better health conditions (Lei & Lin, 2009).

Table 4.2. Distribution of Children's Health Conditions by Residence Type in China in 2010

Variables	Rural Intact (%)	Urban Intact (%)	Left Behind (%)	Migrant (%)	Single/ No parent Family (%)
Low birth Weight (0-3 years old)†	9.1	4.6	9.9	5.9	28.5
Sick last month (0-3 years old) *	43.3	38.9	56.7	43.4	51.2
See doctor last year*	46.7	55.8	55.6	49.1	46.9
Hospitalized last year	6.9	8.1	9.0	8.5	7.4
Have medical insurance *	66.1	60.7	61.9	48.5	62.0
Self-reported health (10-15 years old)	73.6	73.4	73.9	71.5	71.3
Exercise last month (10-15 years old)	71.5	74.5	69.9	73.6	69.8

*Note: Sample sizes vary based on age group. Results weighted. † .05 < p < .10; * p < .05 based on design-based Pearson chi square statistic.*

For children with different residence types (see Table 4.2), a major finding is that children left behind in rural areas are much more vulnerable to illness than either rural or urban intact families as well as migrant children and those from single/no parent families.

In fact, as many as 57 percent of the left-behind children between zero and three years old were reported to be sick in the last month, compared to 43 percent, 39 percent, 43 percent, and 51 percent for normal rural, urban, migrant children and single/no parent children, respectively. They were also somewhat more likely to be hospitalized in the last year than the other children and reported getting less physical exercise. Migrant children are less likely to have low birth weight than rural intact and left-behind children, but they have the lowest percentage of public medical insurance coverage at 48 percent, compared to over 60 percent for any other groups of children. The health conditions of children in single/no parent families are not much better than the left-behind children. Over half of them have been sick in the last month. As many as 28 percent of these children are born with low birth weight, versus 10 percent of left-behind children.

In summary, rural children are at a disadvantage in many aspects of physical health. The most vulnerable children are the largely rural, left-behind children and the children living in single/no parent families in both rural and urban areas.

5. Psychological and Social-Emotional Well-being

Psychological well-being and social well-being are two separate, but related, developmental domains for children. Psychological health refers to the mental and emotional state of children and their opinions about themselves and their future. Indicators include self-esteem, self-efficacy, depression, and sense of happiness. Social well-being indicates the ability and skills of children to get along with others and make friends in their social milieu. The two domains are closely related because children with mental problems – such as depression, anxiety, and other emotional self-regulation disturbances – often act out in socially undesirable ways, such as showing social withdrawal, aggressiveness, and antisocial behaviors. Children and adolescents with mental health problems and social deficits often have difficulty in normal cognitive development and school performance (see, for example, Breslau, Lane, Sampson, & Kessler, 2008). The Center for Disease Control and Prevention (CDC) has been monitoring children’s mental health in the US through various ongoing national surveys and registry systems.¹⁴ Although no comprehensive national statistics about children’s mental health state in China are available, various studies have examined different mental health issues of children and youth in various regions of China (see, for example, Tang & Qin, 2015).

In this section, we examine the psychological well-being of 10- to 15-year-old children from several aspects, including depression, sense of happiness, confidence for the future, self-esteem, and self-efficacy.¹⁵ The composite index of depression comes from the adapted Chinese version of the K6 screening tool (see Green, Gruber, Sampson, Zaslavsky, & Kessler, 2010). It consists of 6 questions asking respondents how often they experience each of six symptoms of major depression and generalized anxiety disorder in the past month. In this study, depression is indicated when the

¹⁴ See: http://www.cdc.gov/mmwr/preview/mmwrhtml/su6202a1.htm?s_cid=su6202a1_w

¹⁵ Self-esteem and self-efficacy scales are only available for 10- year-old children.

child reports that he/she experiences at least one of the six symptoms at least 2 or 3 times per week. Happiness and confidence for the future are both based on single questions asking the respondents how happy they feel they are and how confident they are in their future. Children who report a score of 4 or 5 on a five-point Likert scale from very unhappy (“1”) to very happy (“5”) or no confidence at all (“1”) to very confident (“5”) are regarded to be “happy” or “confident in their future.”

Self-esteem is based on the Chinese version of the Rosenberg Self-Esteem Scale. Each child’s total score is the sum of scores for each of 9 statements.¹⁶ Higher scores indicate higher self-esteem.¹⁷ Bandura (1989) defined self-efficacy as the confidence individuals have in their ability to organize and execute courses of action required to attain specific performance outcomes. CFPS used the first 4 items of the 7-item Pearlin Mastery Scale designed to measure the perception of individuals for their ability to control forces that significantly impact their lives. After reverse coding three items, we summed the four items to get the self-efficacy score, with higher scores indicating higher self-efficacy.¹⁸

To assess social well-being, we use three indicators that are based on three single questions asked of 10- to 15-year-old children. They are asked to assess their personal relations and their social skills on a five-point Likert scale from 1 to 5, with 1 representing “very bad” and 5 representing “very good.” Children who report a score of 4 or 5 on each of the two scales are regarded as having good relations and social skills. The children are also asked to report the number of good friends they have, which is a continuous variable.

16 One statement, “I wish I could have more respect for myself,” is excluded from the original ten because of the inaccurate translation in the Chinese version.

17 The composite self-esteem scale has an unadjusted mean of 25.78 (sd = 2.24, min = 19, max = 35).

18 The composition self-efficacy scale has an unadjusted mean of 10.96 (sd = 1.38, min = 6, max = 15).

As shown in Table 5.1, 21 percent of the 10 to 15 years olds have depression symptom(s) more than two times a week, 20 percent do not feel happy, and 22 percent have no confidence in their future. As shown in Chart 5.1, there are significant disparities between rural and urban children in their feelings of happiness and confidence. A higher percentage of rural children than urban children regard themselves as unhappy or have no confidence in their future (22% versus 16% are unhappy, and 24% versus 19% have no confidence in their future). The mean self-esteem and self-efficacy scores of rural children are significantly lower than urban children (Table 5.1).

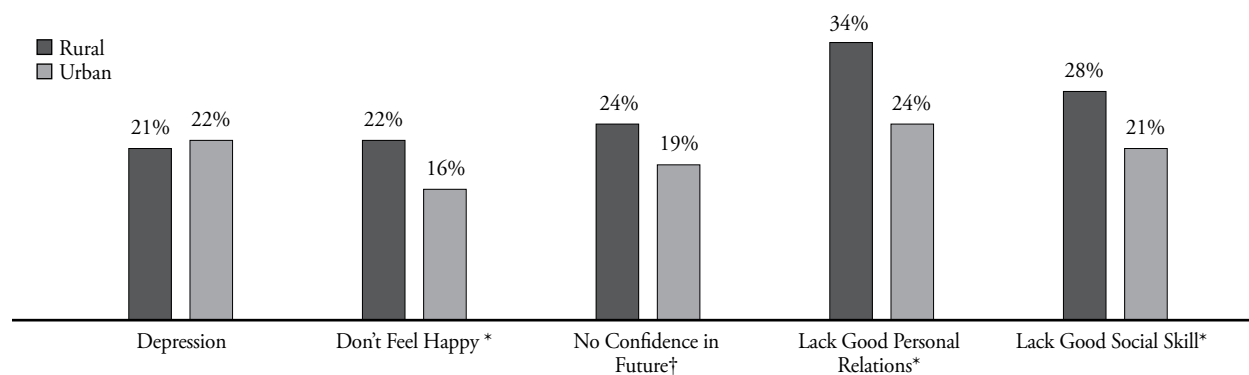
Table 5.1. Psychological and Social Well-being for Children Ages 10 to 15 China in 2010

Variables	Rural	Urban	Total
Depression (%)	20.5	22.1	21.0
Don't feel happy (%) *	21.6	16.4	20.1
No confidence in future (%) †	23.5	18.7	22.1
Lack good personal relations (%) *	34.0	23.7	31.1
Lack good social skills (%) *	27.7	21.2	25.8
Self-esteem score (mean; age 10) *	25.4	26.9	25.9
Self-efficacy score (mean; age 10) *	10.8	11.5	11.0
Number of good friends (mean) *	6.2	8.3	6.8

Note: Sample size N=3,464. The means test is based on post-estimation test of means. † .05 < p < .10; * p < .05 based on design-based Pearson chi square statistic.

The results on social well-being reveal that rural children lag behind their urban counterparts in all three indicators of social well-being (Chart 5.1). Over a third of rural children report not having good personal relations, in contrast to a quarter of urban children. Rural children have on average six good friends while urban children report an average of eight.

Chart 5.1. Psychological and Social Well-being of Children in Rural and Urban China in 2010



Note: *p < .05 based on design-based Pearson chi square statistic. † .05 < p < .10 based on design-based Pearson chi square statistic. Source: CFPS(2010).

Children in different residence types also tend to differ in levels of psychological and social well-being. Table 5.2 shows that left-behind children and children of single/no parent families are the two groups vulnerable to psychological ill health. Around 30 percent of the children of single/no parent families suffer from symptoms of depression and are unhappy. Both left-behind children and children of single/no parent families have lower efficacy scores than children of rural and urban intact families. Children of single/no parent families are the most disadvantaged in terms of social well-being. Thirty-eight percent report that they do not have good personal relations in contrast to 33 percent of rural intact children and 23 percent of urban intact children.

Table 5.2. Psychological and Social Well-being for Children Ages 10 to 15 by Residence Type in China

Variables	Rural Intact	Urban Intact	Left Behind	Migrant	Single/ No Parent Family
Depression (%) †	18.9	24.7	21.4	18.2	29.8
Don't feel happy (%) †	20.3	17.7	20.1	16.4	30.7
No confidence in future (%)	21.1	18.6	26.0	24.5	28.6
Lack good personal relations (%) *	33.4	23.0	33.6	22.5	38.0
Lack good social skills (%)	26.4	22.1	27.8	20.6	32.2
Self-esteem score (mean; age 10) *	25.5 ^a	26.9 ^{ab}	25.3 ^b	25.9	26.1
Self-efficacy score (mean; age 10) *	11.1 ^{abc}	11.5 ^{def}	10.6 ^{bd}	10.8 ^c	10.2 ^{cf}
Number of good friends (mean) *	6.4 ^a	8.6 ^{abc}	6.0 ^b	7.6	6.5 ^c

*Note: Sample size N=3,464. † .05 < p < .10, * p < .05 for percentages based on design-based Pearson chi square statistic. * p < .05 for post-estimation test of means. The categories with the same subscripted letters are significantly different at p < 0.05 level.*

On the other hand, migrant children are the least likely to report depression symptoms and feeling of unhappiness. This is despite the fact that they are more likely to show no confidence in their future than rural and urban intact children. Additionally, migrant children are more likely to report having good personal relationships than any of the other groups of children.

It is also noteworthy that, although children of urban intact families have the highest self-esteem and self-efficacy scores, and are more likely to be happy and have confidence in the future, they have a higher probability of reporting depression symptoms than children of rural intact families, left-behind children, and migrant children. This finding is contrary to the higher levels of social-emotional well-being for urban children in almost all other aspects, and warrants further examination.

The results presented in this section demonstrate the rural-urban disparities in psychological and social well-being, with rural children, left-behind children, and children of single/no parent families at a clear disadvantage.

6. Educational Achievement and Cognitive Development

Educational and cognitive well-being refers to the ability of children to learn language, mathematics, and other knowledge appropriate for their age level. It also includes their development of cognitive skills required to effectively understand their environment and communicate with people. Kindergartens and schools are major formal settings where children learn new knowledge and master various cognitive skills. It has been established that early childhood education at high quality child care centers, preschools, and elementary schools are crucial for children's later educational achievement and future economic success (Cunha & Heckman, 2010; Heckman, Moon, Pinto, Savelyev, & Yavitz, 2010; Reynolds, Temple, & Ou, 2011). Since the 1980s, with the implementation of the nine-year compulsory education system, most children in China have been able to complete nine years of elementary and junior high school. Early childhood education through public and private kindergartens and nurseries is also developing rapidly in both urban and rural areas.¹⁹ However, major challenges still remain in bridging the gap between rural and urban areas in terms of available educational resources and the quality of school education (Dollar, 2007; Qian & Smyth, 2008).

This section describes the educational and cognitive well-being of children in China. We present the proportion of children enrolled in kindergarten and schools and compare the levels of engagement in school, school satisfaction, and school performance between rural and urban children. We also compare rural and urban children in their college aspirations as well as their scores on math and vocabulary tests.

19 For instance, see the NBS "Report on Implementation of Chinese Children Development Outline" (2013年中国儿童发展纲要实施情况统计报告). Available at: http://www.stats.gov.cn/tjsj/zxfb/201501/t20150129_675797.html

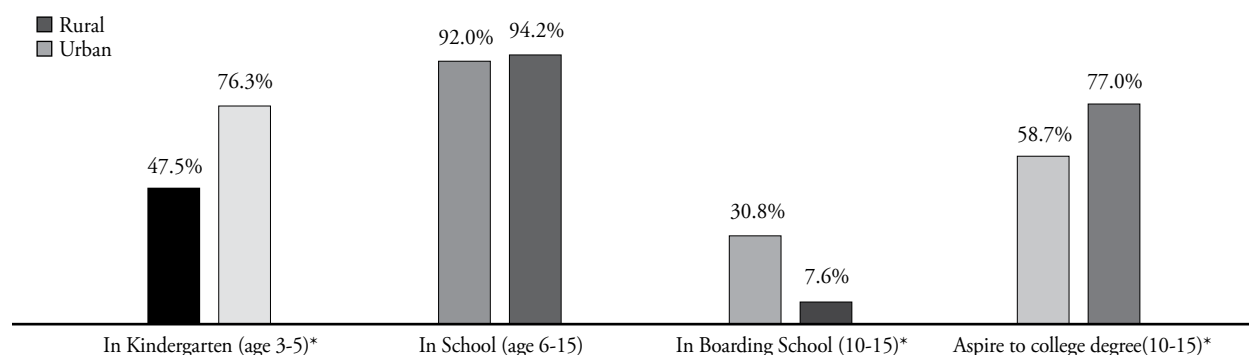
As Table 6.1 indicates, 55 percent of the 3-to 5-year-old children are in nursery or kindergarten. However, while 76 percent of urban children are enrolled in kindergarten, only 48 percent of rural children are enrolled (see Chart 6.1). This clearly reveals the rural-urban discrepancy in early education resources for preschool-age children. Yet, the rural-urban disparity in school enrollment is minimal; ninety-two percent of rural children age six to 15 and 94 percent of same age urban children are enrolled in schools. The high enrollment rate of school age children reflects the achievement of the 9-year compulsory education policy. However, nearly a third (31%) of 10- to 15-year-old students in rural communities attend boarding schools, which are often of poor quality. In contrast, only eight percent of urban students aged 10 to 15 are boarders. Overall, as many as 64 percent of 10- to 15-year-olds aspire to complete a college education.²⁰ However, there are significant disparities in college aspirations of rural and urban students. While 77 percent of urban students harbor college aspirations, only 59 percent of rural children do so (see Chart 6.1).

Table 6.1. Distribution of Child Schooling in Rural and Urban China in 2010

Variables	Community Type		
	Rural (%)	Urban (%)	Total (%)
In kindergarten (age 3-5) *	47.5	76.3	54.8
In school (age 6-15)	92.04	94.2	92.6
In boarding school (age 10-15)*	30.8	7.6	24.2
Aspire to college degree (age 10-15)*	58.7	77.0	63.9

Note: Sample size varies according to age group. Results weighted. * $p < .05$ based on design-based Pearson chi square statistic.

Chart 6.1. Schooling for Children in Rural and Urban China in 2010



Note: * $p < .05$ based on design-based Pearson chi square statistic.

Source: CFPS(2010).

20 "College education" as defined here includes two-year colleges (similar to associate degrees in the US), four-year colleges and post-graduate study.

Table 6.2 shows the schooling status for children by residence type. Compared to children in the other residence types, fewer left-behind children are enrolled in kindergarten or other preschool programs. Children of single/no parent families are less likely to aspire to a college degree than other groups of children. Although migrant children lag behind urban children in intact families in kindergarten enrollment and college aspiration, they perform much better on both aspects than children of rural intact families, left-behind children, and children of single/no parent families.

Table 6.2. Child Schooling by Residence Type in 2010

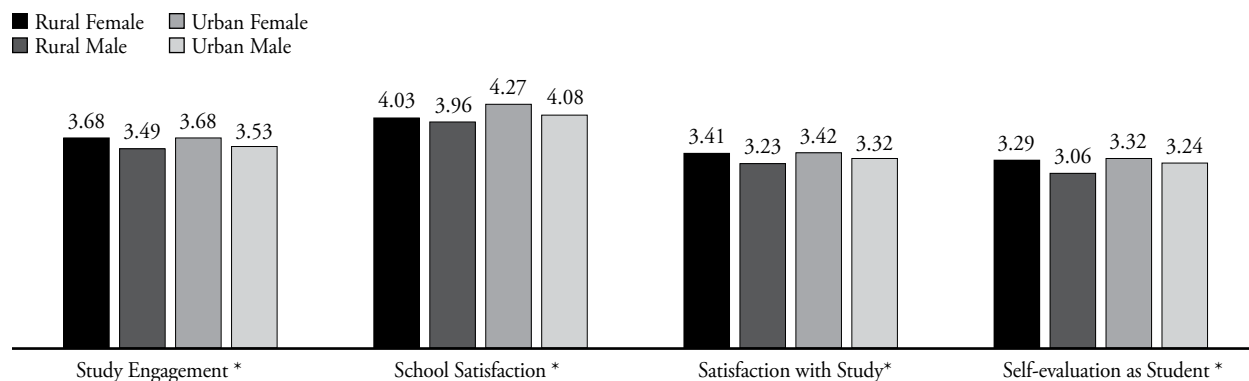
Variables	Rural Intact	Urban Intact	Left Behind	Migrant	Single/ No Parent Family
In kindergarten (age 3-5) *	50.3	79.8	45.8	61.9	56.7
In school (age 6-15)	92.6	94.7	92.3	90.8	89.5
In boarding school (age 10-15)*	31.8	7.8	25.6	13.9	17.8
Aspire to college degree (age 10-15)*	60.2	78.7	60.4	69.2	53.3

*Note: Sample sizes vary. Results weighted. * $p < .05$ based on design-based Pearson chi square statistic.*

The data presented on study engagement are based on the average score of five items asking students about their study habits on a five-point Likert scale from totally disagree (1) to totally agree (5): “study hard,” “pay attention to study in class,” “double check homework after completion to guarantee correctness,” “obey school rules and disciplines,” and “don’t play until completing homework.” School satisfaction is measured by the average score of five items asking children about their satisfaction with school, their head teacher, Chinese teacher, math teacher, and English teacher on a five-point Likert scale from very dissatisfied (1) to very satisfied (5). Satisfaction with study performance is measured by a single item (“How do you think of your academic performance?”) on a scale from very dissatisfied (1) to very satisfied (5). Self-evaluation as a student is measured by another single item (“How excellent do you think you are as a student?”) on a scale from very bad (1) to very excellent (5).

Chart 6.2 shows the mean scores of study engagement, school satisfaction, satisfaction with study performance, and self-evaluation of rural and urban children by gender. For study engagement of children who are 10 to 15 years old, although there are significant gender differences in favor of girls, no difference is found between rural and urban children. Comparing school satisfaction between rural and urban students, we do find some significant differences. Rural children, especially boys, are the least satisfied with their schools. Rural girls tend to like their schools better than rural boys, but are less satisfied than urban girls with their schools. On the measure of self-evaluation as a student, rural males also tend to be the least satisfied (also see table 6.3).

Chart 6.2. Study Engagement and Satisfaction for Children 10 and 15 by Gender and Community Type in China in 2010



Note: * $p < .05$ for post-estimation t-test of means for one or more two-category comparisons.
Source: CFPS (2010).

Table 6.3. Mean Scores of Study Engagement and Satisfaction for Children Aged 10 to 15 by Community Type and Gender in 2010

Indicator	Rural Female		Rural Male		Urban Female		Urban Male	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Study Engagement	3.676 ^{ac}	0.025	3.488 ^{ab}	0.027	3.679 ^{bd}	0.033	3.528 ^{cd}	0.034
School Satisfaction	4.029 ^{ac}	0.037	3.964 ^{abd}	0.036	4.267 ^{bce}	0.048	4.081 ^{de}	0.045
Satisfaction with Study Performance	3.405 ^a	0.038	3.228 ^{ab}	0.031	3.418 ^b	0.051	3.319	0.065
Self-evaluation as a Student	3.287 ^a	0.039	3.055 ^{abc}	0.040	3.319 ^b	0.055	3.237 ^c	0.068

Note: Sample size $N=3,359$. Results weighted.
The categories with same subscripted letters are significantly different at $p < 0.05$ based on postestimation T test of means.

Table 6.4 shows the means of study engagement and school satisfaction by residence type. It is encouraging to find that both the left-behind children and migrant children are better able to engage in their studies than children in rural intact families. However, migrant children are more satisfied with their schools than the left-behind children and children of rural intact families. Left-behind children are also significantly less satisfied than urban children with their academic performance and self-evaluation as a student.

Children's scores on the vocabulary and math tests administered directly by the CFPS survey interviewer are objective measures of the cognitive ability of 10- to 15-year-olds. The vocabulary test is a cognitive test of language ability designed by CFPS for recognition of Chinese words according to level of difficulty. The math test is a test for children and adults containing math skills questions based on levels of difficulty.²¹

Table 6.4. Mean Scores of Study Engagement and Satisfaction for Children Aged 10 to 15 by Residence Type

Indicator	Rural Intact		Urban Intact		Left Behind		Migrant		Single/No Parent Family	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Study engagement	3.55 ^{ab}	0.024	3.59	0.031	3.62 ^a	0.028	3.66 ^b	0.038	3.62	0.059
School satisfaction	4.01 ^{ac}	0.034	4.16 ^{ab}	0.047	3.97 ^{bd}	0.052	4.19 ^{cd}	0.046	4.10	0.071
Satisfaction with study performance	3.31	0.03	3.38 ^a	0.05	3.28 ^a	0.047	3.41	0.069	3.36	0.087
Self-evaluation as a student	3.16 ^a	0.036	3.30 ^{ab}	0.06	3.13 ^b	0.06	3.26	0.079	3.26	0.068

Note: Sample size N=3,359. Results weighted. The categories with the same subscripted letters are significantly different at $p < 0.05$ level.

²¹ The mean, standard deviation, and range of test scores based on unweighted data are: vocabulary test (21.7, 7.13, 0–34), math test (11.20, 4.45, 0–24).

The results demonstrate that rural children, both boys and girls, perform poorly in both word recognition and math calculation compared to urban children (see Table 6.5). Rural males have the lowest average scores. Children of urban intact families have better scores than children of rural intact families, left-behind children, and children of single/no parent families on both vocabulary and math tests (see Table 6.6). However, similar to urban children, the vocabulary test scores of migrant children are significantly higher than those of rural intact families, left-behind children, and children of single/no parent families. Their average vocabulary score is even higher than that of children from urban intact families, although this difference is not statistically significant. Migrant children's comparatively high performance on the vocabulary test is a finding worthy of future exploration.

Table 6.5. Mean Test Scores of Children Aged 10 to 15 by Community Type and Gender in China in 2010

Type of Test	Rural Female		Rural Male		Urban Female		Urban Male	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Vocabulary	21.64 ^{abc}	0.509	20.23 ^{adc}	0.489	24.56 ^{bd}	0.444	23.73 ^{cc}	0.382
Math	10.93 ^{ab}	0.261	10.73 ^{cd}	0.23	12.19 ^{ac}	0.266	12.41 ^{bd}	0.239

Note: Sample size $N=3,360$, results weighted. The categories with same subscripted letters are significantly different at $p < 0.05$ level.

Table 6.6. Mean Test Scores of Children Aged 10 to 15 by Residence Type in China in 2010

Type of Test	Rural Intact		Urban Intact		Left Behind		Migrant		Single/No Parent Family	
	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Vocabulary	20.89 ^{ab}	0.471	23.98 ^{acd}	0.428	21.09 ^{ce}	0.821	24.27 ^{bef}	0.53	22.18 ^{df}	0.692
Math	10.91 ^a	0.214	12.36 ^{abc}	0.23	10.87 ^{ab}	0.375	11.7	0.411	11.13 ^c	0.385

Note: Sample size $N=3,360$, results weighted. The categories with same subscripted letters are significantly different at $p < 0.05$ level.

In this section we examined the cognitive and educational well-being of children in China. We found that rural children, especially males, have lower cognitive test scores than their urban counterparts. They are also less satisfied with their school and less engaged with school work than urban children.

7. Family and Community Contexts

Theories and research on human development have put great emphasis on the importance of various contexts and how they interrelate and affect child development (e.g., Bronfenbrenner, 1979). In previous sections, we examined the developmental well-being of children in different domains. In this section, we describe the multiple contexts of child development, especially the influence of families and communities.

Families are the most common setting in which children are raised and educated. Family functioning is crucial for healthy child development in various domains, especially during the early years when children's physical growth and cognitive and social development are most rapid and time-sensitive (Henrich & Gadaire, 2008; Weiss, Caspe, & Lopez, 2006). In particular, material resources and family relationships are highly influential aspects of family context. In the section on economic well-being, we highlighted family poverty and parental education as important indicators of economic well-being. In this section, we examine the role of family structure, the observed home environment, parental engagement and interaction with children (including reading to the child), and parenting styles. Community context, which covers the physical and social venues where children interact and socialize with others, is also analyzed in this section.

Family Structure

As we showed in Table 1.1, 13 percent of Chinese children do not live with their parents and another 15 percent live with only one parent. Most of these children are rural left-behind children whose parents work in urban areas. Left alone or in the care of grandparents – who tend to be less educated and in frail health – rural children, especially the left-behind, are at a developmental disadvantage. Children of single/no parent families, who account for 5 percent of the child population, are in a similar situation; in addition to the lack of typical parental care, they may also suffer from the psychological trauma of parental separation or early parental death (see, for example, Maier & Lachman, 2000).

Observed Home Environment

The home environments of rural and urban children, as observed by the interviewer, are clearly different (see Table 7.1). Sixty-five percent of urban children from intact families have a stimulating home environment with books and other reading materials. This is the case for only 43 percent of rural intact families, 41 percent of left-behind children, and 37 percent of children of single/no parent families. Migrant children have significantly better home environments than those from rural intact families, left-behind children, and children of single/no parent families. Children from single/no parent families have the least favorable home environments of all the groups. Caregivers of rural intact and left-behind children are less likely to communicate with children than caregivers of urban and migrant children. Caregivers in single/no parent families are the least likely to communicate with their children.

Table 7.1. Percentage of Children with Positive Observed Home Environment by Residence Type

Home Environment	Rural Intact (%)	Urban Intact (%)	Left Behind (%)	Migrant (%)	Single/ No Parent Family (%)
Stimulating home environment *	43 ^{abc}	65 ^{ade}	41 ^{dfg}	55 ^{b^h}	37 ^{cegh}
Parents communicate with child *	55 ^{abc}	71 ^{ade}	49 ^{dfg}	65 ^{b^h}	40 ^{cegh}

Note: Sample size N=8,990, results weighted. * The categories with same subscripted letters are significantly different at $p < 0.05$ level based on post-estimation test of means.

Parental Involvement In Child Education

To understand parents' or other primary caregivers' involvement in their children's education, we used four indicators: reading to the child, buying the child books, homework supervision, and tutoring (see Table 7.2).²² Among children three to five years old, more than half of caregivers read to them often and purchase books for them. For children aged 10 to 15, 79 percent and 39 percent of caregivers often supervise their homework and provide tutoring, respectively. Most Chinese parents are very much involved in their children's education from early childhood through their school years.

Table 7.2. Caregivers' Involvement in Child Education in Rural and Urban China in 2010

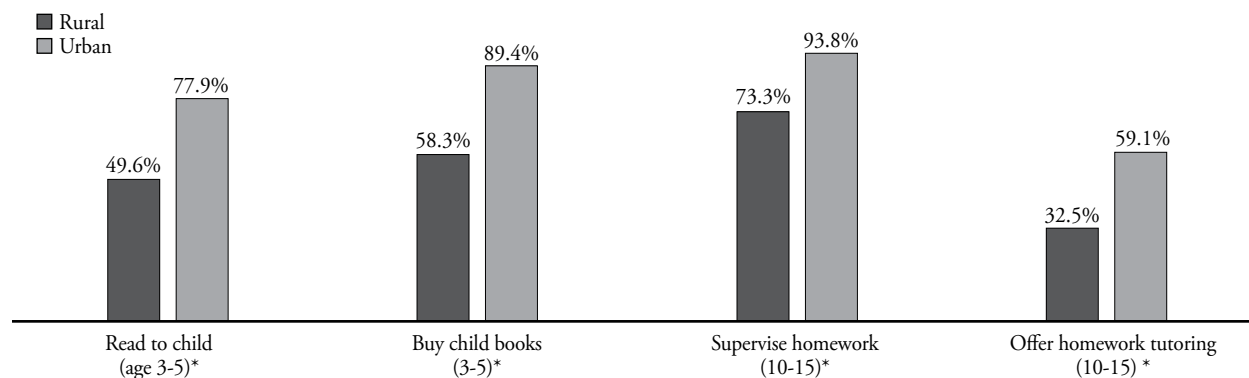
Caregiver Often...	Community Type		
	Rural (%)	Urban (%)	Total (%)
Read to child (age 3-5) *	49.6	77.9	56.8
Buy child books (3-5) *	58.3	89.4	66.3
Supervise homework (10-15)*	73.3	93.8	78.5
Offer homework tutoring (10-15)*	32.5	59.1	39.3

Note: Sample sizes differ based on age group. * $p < .05$ based on design-based Pearson chi square statistic.

22 For "read to child," reading to child at least once a month as reported by caregiver is considered "often". "Buy books" means buy children's books at least several times a year, also reported by caregiver. "Homework supervision" means caregiver demanding child complete homework at 2 times a week. "Tutoring" means caregiver checking on child's homework at least 2 times a week. The last two items are reported by students.

However, there are considerable differences between rural and urban children in the extent of parental involvement. For example, 78 percent of urban parents often read to their children in contrast to the 50 percent of rural caregivers (see Chart 7.1). If we examine caregiver involvement by residence type, we find that children who are left behind and, to some extent, children of single/no-parent families are most disadvantaged (see Table 7.3). Only 42 percent of left-behind children have caregivers who often read to them compared to more than half of children from rural intact families, urban intact families, migrant children, and children of single/no-parent families. Only 30 percent of left-behind children receive homework tutoring from their caregivers, a lower rate than any other group of children.

Chart 7.1. Parental Involvement in Child Education in Rural and Urban China in 2010



Note: * $p < 0.05$ based on design-based Pearson chi square statistic.

Source: CFPS 2010.

Table 7.3. Caregivers' Involvement in Child Education by Residence Type in China in 2010

Caregiver Often...	Rural Intact (%)	Urban Intact (%)	Left Behind (%)	Migrant (%)	Single/ No Parent Family (%)
Read to child (age 3-5) *	55.3	81.4	42.3	66.8	55.4
Buy child books (3-5) *	62.2	92.5	56.5	77.7	55.4
Supervise homework (10-15)*	78.2	85.8	72.8	80.7	73.1
Offer homework tutoring (10-15)*	36.7	52.1	30.4	49.3	36.6

Note: Sample size varies based on age group, results weighted.

* $p < .05$ based on design-based Pearson chi square statistic.

Parenting Behavior

Different parenting styles and behaviors can have a major impact on the psychological and cognitive development of children (Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987). The CPFS survey includes a 12-item module on positive parenting behaviors reported by 11-year-old children. Through Varimax factor analysis, we can identify three distinct factors representing different aspects of parenting behavior, which we term “encouragement,” “engagement,” and “interaction.”²³ Caregivers of rural children perform poorly in all three aspects of positive parenting based on mean factor scores (see Table 7.4).²⁴ Our statistical tests of mean factor scores of positive parenting for children in different residence types also indicate that caregivers of urban intact families are more likely to engage in positive parenting practices than rural caregivers and caregivers of left-behind children. However, no significant difference exists between left-behind children and children from rural intact families (see Table 7.5). It is noteworthy that caregivers for children of single/no parent families are more likely to engage with their children than caregivers of rural intact families; they also tend to interact more with their children than caregivers of left-behind children.

Table 7.4. Mean Score of Parenting Behavior for 11-year-old in Rural and Urban China in 2010

Parenting Behavior	Rural		Urban	
	Mean	S.E.	Mean	S.E.
Encouragement*	-0.101	0.053	0.191	0.078
Engagement *	-0.022	0.056	0.290	0.104
Interaction *	-0.095	0.052	0.251	0.080

Note: Sample size $N=566$, results weighted. Analysis based on factor scores from a Varimax factor analysis of 12 items. * $p < 0.05$ level based on design-based Pearson chi square statistic.

Table 7.5. Mean Score of Parenting Behavior for 11-year-olds by Residence Type in China in 2010

Parenting Behavior	Residence Type				
	Rural Intact	Urban Intact	Left Behind	Migrant	Single/No Parent Family
Encouragement†	-0.077 ^{ab}	0.116 ^a	0.082	0.187	0.227 ^b
Engagement *	0.017 ^a	0.321 ^{abc}	-0.020 ^b	-0.068 ^c	0.171
Interaction *	-0.056 ^a	0.252 ^{ab}	-0.141 ^{bc}	0.093	0.312 ^c

Note: Sample size $N=566$, results weighted. Analysis based on factor scores from a Varimax factor analysis of 12 items. Any two categories with same subscripted letter are significantly different at † $p < 0.10$, * $p < 0.05$ level.

23 Parenting style refers to the three factors extracted through factor analysis of child-reported frequencies of 12 parenting behaviors: (1) encouragement – caregiver encourage child in study and independent problem-solving, use fair rules and reasoning in handling problem behavior; (2) engagement – caregivers help with homework and learn about school activities; and (3) interaction – caregivers talk and play with children, and tell stories.

24 The descriptive statistics for the three factor scores are: encourage ($M=0$, $SD=.84$), engage ($M=0$, $SD=.83$), interact ($M=0$, $SD=.73$).

Response to Low Grades

We also examined caregivers' preferred response when their children receive low grades. These items assess whether caregivers typically punish or scold the children, require them to study more, or provide more help. Corporal punishment and scolding are clear indicators of harsh parenting, which are detrimental to child development (Johnson et al., 2001; Vissing, Straus, Gelles, & Harrop, 1991). Our findings show that while only 15 percent of caregivers resort to harsh parenting behavior when their children get lower than expected grades, even fewer (8 percent) respond by offering children more help and support (see Table 7.6). Significant rural-urban discrepancies also exist; seventeen percent of rural caregivers prefer corporal punishment or scolding in contrast to 10 percent of urban caregivers. Caregivers of migrant children are the least likely to resort to corporal punishment and scolding and the most likely to offer more help (see Table 7.7).

Table 7.6. Parents' Response to Low Grades for 10 to 15 Year Olds in Rural and Urban China in 2010

Parents Response to Low Grades *	Community Type		
	Rural (%)	Urban (%)	Total (%)
Punish, scold	17.3	9.7	15.1
Tell child study more	75.1	80.1	76.5
More help to child	7.7	10.2	8.4

Note: Sample size $N=3,323$, results weighted. * $p < .05$ based on design-based Pearson chi square statistic.

Table 7.7. Parents' Response to Low Grades for Children Ages 10 to 15 by Residence Type

Parents Response to Low Grades *	Rural Intact (%)	Urban Intact (%)	Left Behind (%)	Migrant (%)	Single/ No Parent Family (%)
Punish, scold	17.0	9.6	19.1	4.8	15.0
Tell child study more	75.5	80.8	73.0	82.9	75.6
More help to child	7.6	9.6	7.9	12.3	9.3

Note: Sample size $N=3,323$, results weighted. * $p < .05$ based on design-based Pearson chi square statistic.

Community Context

In addition to the family environment, community and neighborhood contexts have an effect on child development (Sampson, 2003). Major aspects of neighborhood context that are crucial for child development and well-being include poverty level, safety, neighbor relations, access to child care facilities and schools, and access to other social service resources.

Our results indicate that economic and living conditions of rural communities are much poorer than those in urban communities, as reported by community administrators or observed by interviewers (see Table 7.8). For example, while over 90 percent of urban children live in communities with tap water and clean cooking fuel, only 39 percent of rural children live in communities with access to tap water, and 38 percent of rural children live in communities with clean cooking fuel. Also, rural communities have fewer public service institutions or facilities – such as pharmacies, sports grounds, or playgrounds – than urban communities. Eighty percent of urban children have access to a kindergarten in their community compared to only 45 percent of rural children. However, a higher percentage of rural children than urban children (71% vs. 55%) have a primary school in their community.

Table 7.8. Community Conditions for Children in Rural and Urban China in 2010

Variables	Rural		Urban	
	% Mean	S.E.	% Mean	S.E.
Tap water as main drinking water source*	39%	0.037	94%	0.021
Gas/Solar/methane as primary cooking fuel *	38%	0.039	91%	0.026
Kindergarten in community *	45%	0.039	80%	0.044
Primary school in community *	71%	0.036	55%	0.048
Proportion of immigrants in population *	0.06	0.009	0.27	0.028
Observed economic conditions by interviewer *	3.89	0.118	4.63	0.121
Street cleanliness observed by interviewer *	4.19	0.116	4.95	0.121
Number of public service institutions/facilities (≤ 8) *	3.36	0.127	4.79	0.172
Number of infrastructure / utilities (≤ 8)	5.38	0.126	5.76	0.208

Note: Sample size $N=8,990$, results weighted. † .05 < p < .10, * p < .05 based on design-based Pearson chi square statistic. All variables are community-level indicators reported by community administrators or interviewers.

Neighborhood Relationships

Several questions in the CFPS ask whether and how often each family interacted with their neighbors in various ways during the last month (i.e., no contact with their neighbors, just talk to each other, or visit and help each other). Our analysis reveals significant differences between families of rural and urban communities (see Table 7.9). Rural families are more likely (54 percent) than urban families (42 percent) to interact with neighbors in a close manner, such as by visiting each other, providing help, or offering food and other gifts. The positive neighborhood relationship in rural areas may provide a supportive buffer for rural children. However, when we examined rural intact families and families of left-behind children separately, we found that a much smaller percentage of families with left-behind children (47 percent) report positive neighborhood relationships than rural intact families (56 percent). Single/no parent families are the least likely to report positive neighborhood relations (40 percent). The lack of neighborhood supportiveness may put left-behind children and children in single/no parent families at a further disadvantage. The situation is similar for left-behind children and children of single/no parent families in their relationships with friends and relatives.

Table 7.9. Neighborhood and Friends/Relative Relationship by Community Type and Resident Type in 2010

Parenting Behavior	Community Type			Residence Type				
	Rural (%)	Urban (%)	Total (%)	Rural Intact (%)	Urban Intact (%)	Left Behind (%)	Migrant (%)	Single/ No Parent Family (%)
Neighbor relations *								
No contact	20.4	26.8	22.1	19	25	25	23	28
Only chat	25.4	31.0	26.9	25	30	28	28	32
Visit and help	54.2	42.2	51.0	56	45	47	49	40
Friends/relative relations *								
No contact	35.4	25.2	32.6	32	22	44	30	38
Only chat	9.4	6.1	8.5	9	6	9	6	10
Visit and help	55.3	68.7	58.9	59	73	47	64	52

Note: Sample size N=8,990, results weighted. * $p < .05$ based on design-based Pearson chi square statistic.

In this section, we described the family and neighborhood contexts of the children. Rural-urban disparities exist in multiple aspects of family context, such as stimulating home environment, positive parenting behavior, and caregiver support for school work. The economic and living conditions of rural communities are also worse than those in urban communities. Although positive neighborhood relationships provide some support for rural children, left-behind children seem to lack this crucial asset.

8. Association of Family and Social Contexts with Child Development

In previous sections, we examined several domains of child well-being and development and family and community context for children in China. We found significant disparities between children in rural and urban areas. The findings also indicate that rural left-behind children and children of single/no parent families are especially disadvantaged. Earlier research has found that ecological contexts such as the family have major impact on the development of child outcomes (Bronfenbrenner, 1994; Bornstein and Bradley, 2012). This section shows the results of multiple regression statistical models to examine the effects of family and community factors on the various domains of child development (after taking into consideration demographic attributes of the children). Selected domains of well-being are used as dependent variables. The goal is to determine whether and to what extent the contextual factors affect different domains of child well-being and whether they contribute to the disparity in well-being between rural and urban children.

Physical Well-being

Low birthweight is an important indicator of children's physical well-being. We have shown that the percentage of children with low birthweight is higher in rural areas than in urban areas and higher in single/no parent families than in intact families. In order to examine the validity of the bivariate results, we estimated three multiple logistic regression models after adjusting for demographic characteristics and mother's age at birth.

The results shown in Table 8.1 indicate that children of single/no parent families and left-behind children are significantly more likely to have low birthweight than children of urban and rural intact families (Model 1). Mother's birth age is a very important predictor of low birthweight, with mothers younger than 25 having nearly two times the odds of having low birthweight babies than mothers aged 25 to 35. However, Model 2 shows that after controlling for mother's birth age and child's gender and ethnicity, the disparity between rural left-behind and urban children becomes insignificant; children of single/no parent families still have a higher probability of being low birthweight, although the magnitude of the odds ratio has decreased. In Model 3, we added the family poverty indicator to estimate the effect of family economic contexts. Family poverty level is not a significant predictor of child low birthweight.

It should be noted that the low birthweight of children in single/no parent families does not necessarily mean that such a status causes a child's low birth weight, because family breakup may occur after the child is born or may even be due to the birth of a low birthweight child. The causal mechanism between a child's low birth weight and family functioning warrants further examination.

Table 8.1. Survey Logistic Regression for Low Birth Weight for Children Aged 0-3 Years in China in 2010, CFPS

Covariates	Model 1		Model 2		Model 3	
	Odds Ratio	S.E.	Odds Ratio	S.E.	Odds Ratio	S.E.
Residence Type (urban intact as ref)						
Rural intact family	2.088	1.042	1.721	0.872	1.595	0.792
Left-behind children	2.277†	1.100	2.180	1.149	2.019	1.049
Migrant children	1.297	0.778	1.367	0.880	1.300	0.839
Single/No parent family	8.292**	6.056	7.043*	5.922	6.174*	5.526
Male			0.763	0.184	0.779	0.188
Han ethnicity			0.39†	0.212	0.414†	0.218
Mother's birth age						
25 to 35			0.539**	0.126	0.536**	0.126
Over 35			1.229	0.544	1.106	0.497
Family Poverty					1.489	0.378
Intercept	0.048	0.019	0.163	0.093	0.151	0.086
N	1495		1489		1480	
Model Fit	F(4,153)=2.31		F(8,149)=2.98		F(9,148)=2.76	

Note: Models 1, 2, and 3 are for children aged 0 to 3 years. Models are weighted, with 162 PSUs and 6 strata.

† $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Psychological well-being: Sense of Happiness

As a major indicator of psychological well-being, a feeling of happiness has been associated with children's demographic characteristics as well as various features of family and social context (Ren & Treiman, 2013). We have shown that rural children are not as happy as children in urban areas. In order to understand different factors' unique contribution to

happiness, we ran a series of multiple logistic regressions, adjusting for children's demographic characteristics, family poverty level, and caregiver parenting behavior. As information on parenting behavior is only collected for 11-year-old children, our sample for the models is restricted to these children.

As Models 1, 2, and 3 in Table 8.2 demonstrate, rural children – both from rural intact families and left-behind children – feel less happy than their urban counterparts, even after controlling for their demographic characteristics, family poverty, and mother's education. Rural children, including left-behind children, are only 40 percent as likely to be happy as children in urban intact families. Socioeconomic status of a family has no significant impact on children's feelings of happiness.

Model 4 shows that the coefficients for children of rural intact families and left-behind children become less significant when we add parenting behavior to the model. Among the three aspects of parenting behavior, parental encouragement is most relevant to children's sense of happiness, followed by the caregiver interacting with children. Children with more supportive parents (1 unit increase of factor score) are 2.7 times more likely to feel happy than those with less supportive parents. To some extent then, the plight of rural children can be attributed to their caregivers' lack of positive parenting behavior.

Table 8.2. Survey Logistic Regression Model for Sense of Happiness for Children in China in 2010, CFPS

Covariates	Model 1		Model 2		Model 3		Model 4	
	Odds Ratio	S.E.	Odds Ratio	S.E.	Odds Ratio	S.E.	Odds Ratio	S.E.
Residence Type (urban intact as ref)								
Rural intact family	0.359**	0.136	0.369*	0.141	0.404**	0.158	0.446†	0.202
Left-behind children	0.367*	0.154	0.363*	0.152	0.390**	0.160	0.517	0.233
Migrant children	0.515	0.327	0.481	0.308	0.491	0.319	0.537	0.435
Single/No parent family	0.800	0.661	0.872	0.714	0.895	0.739	0.757	0.655
Child male			0.776	0.167	0.776	0.172	0.899	0.229
Han ethnicity			1.159	0.516	1.087	0.491	0.701	0.375
Family poverty					0.754	0.261	1.049	0.393
Mother high school					1.193	0.567	0.726	0.346
Parenting behavior								
Encourage							2.662**	0.503
Engage							1.304†	0.193
Interact							1.465†	0.289
Intercept	11.354	4.197	11.480	7.269	11.835	8.304	17.696	13.987
N	571		571		571		566	
Model Fit	F(4,153)=2.22		F(6,151)=1.55		F(8,149)=1.25		F(11,146)=4.40	

Note: Models 1, 2, 3, and 4 are for children 11 years old. Models are weighted, with 162 PSUs and 6 strata. † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Social Well-being: Social Skills

Whether children and adolescents have good interpersonal relationships is a direct reflection of their social well-being. We learned earlier that a significantly lower percentage of rural children consider themselves as having good interpersonal relationships. In the multiple logistic regression models shown in Table 8.3, we examined the unique association between residence type, family poverty, parenting behavior, and a child's interpersonal skills, controlling for children's demographic characteristics.

The results demonstrate that even after controlling for demographic characteristics, children in rural families, children in single/no parent families, and migrant children show a significant lack of good interpersonal skills when compared to children in urban intact families. The situation is especially dire for children in single/no parent families, whose odds of having good interpersonal skills are less than 10 percent of that for children in urban intact families.

Family poverty is negatively associated with children's interpersonal relationships. In this domain, positive parenting behavior, especially encouragement and interaction, is associated with a better outcome. For rural intact and left-behind children, adding parenting behavior and family poverty to the model reduces the significance level of the odds ratios and increases their magnitude. This indicates that for rural children, a lack of supportive parenting and family poverty may be a major cause of their comparatively poor interpersonal relationships.

Table 8.3. Survey Logistic Regression Model for Social Skills for Children in China in 2010, CFPS

Covariates	Model 1		Model 2		Model 3		Model 4	
	Odds Ratio	S.E.	Odds Ratio	S.E.	Odds Ratio	S.E.	Odds Ratio	S.E.
Residence Type (urban intact as ref)								
Rural intact family	0.340**	0.132	0.357**	0.130	0.445*	0.167	0.438*	0.161
Left-behind children	0.399†	0.207	0.388†	0.200	0.463	0.244	0.489	0.242
Migrant children	0.274*	0.143	0.249*	0.135	0.258*	0.143	0.234*	0.132
Single/No parent family	0.095**	0.063	0.103**	0.067	0.109**	0.074	0.087**	0.067
Child male			0.728	0.181	0.741	0.191	0.713	0.188
Han ethnicity			1.688*	0.426	1.490†	0.340	1.133	0.266
Family Poverty					0.587*	0.155	0.625†	0.164
Mother high school					2.089	0.952	1.665	0.790
Parenting Behavior								
Encourage							1.339†	0.208
Engage							1.029	0.134
Interact							1.387†	0.233
Intercept	5.291	1.859	4.046	1.768	3.927	1.785	5.385	2.416
N	571		571		571		566	
Model Fit	F(4,153)=4.47		F(6,151)=3.96		F(8,149)=3.55		F(11,146)=3.15	

Note: Models 1, 2, 3 and 4 are for children aged 11. Models are weighted, with 162 PSUs and 6 strata.
 † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Cognitive Well-being: Math and Vocabulary Test Scores

Vocabulary and math tests administered to children in the CFPS survey are intended to assess their cognitive development levels. High test scores indicate high levels of cognitive well-being. Our bivariate analysis in Section 6 reveals a disparity between rural and urban children. The multiple linear regression models below investigate the unique association between rural residence, family poverty, parenting behavior, and cognitive test scores after controlling for children’s demographic characteristics.

Table 8.4. Survey Linear Regression Model for Vocabulary Test Scores for Children in China in 2010, CFPS

	Model 1		Model 2		Model 3		Model 4	
Covariates	Odds Ratio	S.E.	Odds Ratio	S.E.	Odds Ratio	S.E.	Odds Ratio	S.E.
Residence Type (urban intact as ref)								
Rural intact family	-2.998*	1.159	-2.690*	1.105	-1.754	1.150	-1.904†	1.039
Left-behind children	-2.281†	1.264	-2.354†	1.249	-1.528	1.257	-1.661	1.233
Migrant children	3.778**	1.245	3.577**	1.248	3.803**	1.275	3.432**	1.231
Single/No parent family	-2.674	2.135	-2.420	2.015	-2.214	1.923	-2.788	1.721
Child male			-0.956	0.664	-0.932	0.653	-0.657	0.648
Han ethnicity			3.741**	1.297	3.209*	1.246	2.446*	1.090
Family poverty					-2.315*	0.949	-1.701†	0.894
Mother high school					1.815†	0.999	1.105	1.018
Parenting behavior								
Encourage							2.372**	0.436
Engage							0.376	0.467
Interact							-0.597	0.424
Intercept	21.169	0.952	18.420	1.704	20.200	1.844	20.214	1.679
N	571		571		571		566	
R-squared	0.059		0.105		0.132		0.204	
Model fit	F(4,153)=9.05		F(6,151)=6.99		F(8,149)=6.07		F(11,146)=8.67	

Note: Models 1, 2, 3 and 4 are for children aged 11. Models are weighted, with 162 PSUs and 6 strata.
 † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

Our results (see Tables 8.4 and 8.5) show that after controlling for demographic variables, rural children and left-behind children tend to have lower math and vocabulary scores than children of urban intact families. Family poverty level and mother’s primary caregivers’ education level are also significant predictors of vocabulary and math test scores. When parental

behavior variables are added to the model, the effect of caregiver education becomes insignificant for both tests. Instead, we find significant effect of positive parenting behavior, especially parental encouragement, on children's test scores.

As noted above, it is noteworthy that migrant children have significantly better vocabulary test scores than even children of urban intact families, although their math test scores are not much different than those of urban children.

Table 8.5. Survey Linear Regression Model for Math Test Scores for Children in China in 2010, CFPS

Covariates	Model 1		Model 2		Model 3		Model 4	
	Odds Ratio	S.E.	Odds Ratio	S.E.	Odds Ratio	S.E.	Odds Ratio	S.E.
Residence Type (urban intact as ref)								
Rural intact family	-1.334**	0.418	-1.311**	0.393	-0.984*	0.384	-0.961*	0.398
Left-behind children	-1.369**	0.477	-1.367**	0.468	-1.073*	0.443	-1.021*	0.499
Migrant children	0.156	0.708	0.276	0.695	0.374	0.700	0.342	0.673
Single/No parent family children	-1.067	0.715	-1.255†	0.675	-1.143	0.711	-1.324†	0.703
Child male			0.418	0.280	0.454	0.280	0.583*	0.288
Han ethnicity			1.016**	0.370	0.890*	0.361	0.549	0.341
Family poverty					-0.311	0.325	-0.001	0.280
Mother high school					0.961*	0.405	0.621	0.429
Parenting behavior								
Encourage							0.846*	0.218
Engage							0.245	0.212
Interact							-0.061	0.226
Intercept	9.456	0.378	8.361	0.526	9.089	0.624	8.965	0.607
N	571		571		571		566	
R-squared	0.035		0.052		0.065		0.113	
Model Fit	F(4,153)=3.47		F(6,151)=4.17		F(8,149)=3.68		F(11,146)=4.31	

Note: Models 1, 2, 3 and 4 are for children aged 11. Models are weighted, with 162 PSUs and 6 strata.

† $p < 0.10$, * $p < 0.05$, ** $p < 0.01$

In this section, we presented the results of multiple regression analysis. First, the results confirm that even after adjusting for children's demographic characteristics, the rural-urban disparity in child well-being persists. Second, they demonstrate the importance of economic and family contexts on the well-being of children. While family poverty influences children's social skills and vocabulary test scores, positive parenting has a positive influence on most aspects of child well-being, especially children's psychological and social well-being. The results further reveal that the rural-urban disparity in child well-being is partly explained by the higher poverty level and less supportive parenting behavior in rural families.

9. Conclusion and Policy Implications

In this study, we examined different aspects of the well-being of children in China, including their developmental outcomes and their social and family contexts. In the section below, we discuss the findings, which we hope will help policymakers and stakeholders in child well-being identify the most vulnerable children in need of help.

Since rural and urban residency as established by the *hukou* system has been a major marker of socioeconomic status in China, we compared the well-being outcomes and social contexts of rural and urban children. The results reveal significant disparities between rural and urban children in multiple domains of well-being. A higher proportion of rural children are born with low birth weight. Rural children also lag behind urban children in social-emotional development. They tend to be less happy and have less confidence in their future. Rural children report having fewer good friends and lacking good social skills. Compared to urban children, rural children also have lower levels of educational achievement and cognitive development. They have lower scores on both math and vocabulary tests.

Consistent with their developmental deficits, many rural children have to grapple with multiple risk factors in their family, at school, and in their community. One out of four rural children lives below the poverty line of 1.6 dollars a day. More than half of preschool-age rural children are not enrolled in preschool education. Due to their parents' lower education levels and lack of other resources, rural children receive much less academic support and help from their parents (such as providing a stimulating home environment, reading to children, and mentoring with homework). Moreover, many rural children are so-called "left-behind" children, with one or both parents having gone to work in urban areas. Over 15 percent of children in rural areas do not live with their parents, while another 15 percent of rural children have only one parent at home. Often in the care of elderly grandparents, left-behind children do not get as much academic and social support from their caregivers. They do not have as much confidence in their efficacy or in their future as urban and other rural children. That said, rural children who migrate with their parents to urban areas seem to do better than their rural counterparts in many developmental areas, including academic performance, although they do

not fare as well as urban children. Still, like left-behind children, migrant children have far less confidence in their future than children in rural intact families and urban families, most likely due to the exclusionary policies and discriminatory practices in their host communities.

Our analysis identified a group of children living in single/no parent families who are especially vulnerable to developmental risks, although they account for less than 5 percent of the child population. With their parent(s) either divorced, deceased, or unknown, they live with only one parent or other kin caregivers. Many of these children have low birthweight, and their family economic and living conditions are poorer than other groups of children, including left-behind children. A much higher proportion of these children feel depressed and unhappy and lack confidence in their future. They also lag behind other groups of children in areas like having good social skills and interpersonal relationships. Most of these children live in rural areas; and many are left behind by the remaining parent migrating to urban areas in search of jobs.

While the proximal causes of rural-urban disparity in child well-being can be found in differences in living conditions, parenting style, family functioning, and community contexts, the ultimate cause can be traced to national policies and practices discussed in Section 2. Although a signatory to the UN Convention on the Rights of the Child, China still needs to restructure many current government policies and practices in order to promote the best interests and well-being of children.

We have pointed out that the plight of rural children, in particular those left behind by their migrant parents and children who migrate to urban areas with their parents, stems to a significant extent from the exclusionary policies and practices against rural residents and migrants that are based on the household registration (*hukou*) system. Although regional practices may differ, large numbers of rural migrants in cities are denied access to social services, such as poverty relief, low-income housing, health care, and enrollment of their children in urban public schools (see Huang, 2012; Pong, 2014). Therefore, migrants are often forced to leave their children behind in rural areas. Otherwise, they would have to enroll their children in low-quality migrant schools that lack government financial support. Therefore, an obvious most important task is abolishing the policies that exclude migrant workers and integrate migrant schools and migrant children into the public school system. This will require central and local governments to make both political and financial commitments to the proper education of migrant children, which has been neglected in many urban areas. With enrollment of migrant children in urban public schools and access to other urban resources, the number of left-behind children should decrease as children are able to migrate with their parents. In “Opinions on Further Promoting Reform of the Household Registration System,” promulgated by the State Council in 2014, the Chinese central government set the goal of establishing an integrated resident registration system based on current residence by 2020 in place of the rigid discriminatory *hukou* system (State Council, 2014). The other goal is to enable 100 million rural migrants and other permanent residents in urban areas to become urban residents entitled to equitable public services as local residents by the year 2020. If these goals can be realized, migrant children in urban areas will benefit from enrollment in local public schools and access to other social services.

For rural children in general, many researchers have noted government underinvestment in public schooling and have recommended increasing investment in human capital in rural areas (Heckman, 2005). In Section 2, we discussed the unintended adverse effects of the rural school consolidation policies on the well-being of children and their families. As a result of the consolidation, rural children either have to travel longer distances to school or become boarders in school at a very young age. Although the consolidation policy was suspended a few years ago, damage may have been done to

the long-term well-being of some of these rural children. Despite declining enrollment and a financial shortfall, local governments should carefully balance the short-term cost savings of school consolidation against its possible short- and long-term adverse effect on the well-being of rural children. To prevent such measures from compromising rural students' access to education and their academic achievement, local governments should invest in student transportation, school facilities, and teacher training and compensation to improve the quality of public schooling for rural children.

Besides boosting rural public schools, one other measure that can improve the well-being of rural children and redress the rural-urban disparity is the provision of early childhood education for rural children. The short- and long-term benefits of preschool programs, especially for children from disadvantaged families, have been reported in the US and other developed countries (Duncan & Magnuson, 2013). Local governments can improve the availability and affordability of high quality kindergartens and nurseries by formulating licensing and operational standards of child care centers, providing training to caregivers, and offering child care assistance to rural families. Rural children, especially those from left-behind and single/no parent families, consistently lag behind their urban counterparts in the domains of family environment and parental involvement. Due to income constraints and lower education of parents, rural children tend to have much less cognitively stimulating home environments and parents with fewer positive parenting skills. High-quality early childhood education programs that incorporate both cognitive and non-cognitive elements in their curriculum can substitute for an enriched home environment and promote children's cognitive and socio-emotional skills.

In addition to rural-urban gaps in academic achievement, we have noted developmental deficits among rural children in physical health and social-emotional well-being. For children who are left-behind by their parents and children from single/no parent families, the needs for adequate health care and socio-emotional enrichment are especially acute. However, China still lacks an integrated child welfare system with the resources and manpower to serve the various needs of vulnerable children and families. We recommend that local governments in regions where vulnerable children are concentrated set up an agency with professional personnel dedicated to coordinating the provision and delivery of various services to these children and families. In recent years, there have been efforts in some rural communities to assign a dedicated person, called a "child welfare supervisor," to work with vulnerable children and their caregivers (China Philanthropy Research Institute, 2013). Among the many duties of the child welfare supervisor are identifying children and families with special needs, assisting them in obtaining necessary services from different agencies, and teaching parents and caregivers proper parenting skills. Unfortunately, most of these child welfare workers in rural communities do not have professional training in child development or social work. Therefore, the children's needs for social-emotional competency are often not addressed. Besides intervention efforts in the rural communities, rural boarding schools are another major setting where effective measures can be taken to meet the social-emotional needs of children. These schools should retain the services of social workers who are trained in school social work and student counseling. They will not only assist students with children's social and emotional difficulties but also make home visits to counsel caregivers in proper parenting. Besides the service of school social workers, students in rural schools would also benefit if universal social-emotional learning programs are incorporated in their learning experiences (Durlak et al., 2011). Many such programs have been successful in improving the social-emotional competencies of the students in the US.

Despite the broad coverage of our report on child well-being, we should note the limitations of the data and our report findings. First, some of the indicators such as BMI and low birthweight are based on caregiver reports that can be affected by recall bias. Onsite measurements of children's height and weight and birthweight from birth records should produce more accurate information than caregiver reports. Second, we lack detailed information on some important aspects of

child development and surroundings. We would like to have more data on children's behavioral problems and their experience of victimization in both home and school settings. We would also like the CFPS survey to collect additional data on family functioning (such as domestic conflicts) and on schools (such as class size and facilities).

CFPS is the only national survey data that collects detailed information on a representative sample of children in China. This enables us to examine the well-being of children from different aspects and in multiple contexts. So far as we know, this report is the most comprehensive in examining the well-being of the children in China. However, because this report is based on the first wave of CFPS data that was collected in 2010, its findings may not be completely applicable to the conditions of children today. Since CFPS is an ongoing longitudinal survey, it will be important to update the report findings with the latest CFPS data on child well-being. This will not only reveal the current conditions of children in China but also demonstrate the temporal change in various aspects of child well-being.

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