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Life Improvement, Life Satisfaction and Care Arrangement Among AIDS Orphans in Rural Henan, China

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Abstract

The Chinese government's response to the increasing number of children orphaned in the HIV epidemic included setting up AIDS orphanages and supporting community-based group homes for double orphans (children who lost both parents to HIV). The impact of these strategies, compared to traditional kinship care, on children's outcomes has not been studied in China. The purpose of this study was to compare perceived life improvement and life satisfaction among double orphans in 3 main care arrangements (group home, AIDS orphanage, kinship care) in 2 rural Chinese counties. Participants included 176 children from 4 orphanages, 30 from 8 group homes, and 90 from kinship households. Findings indicated that children living in government-supported group homes were more likely to report greater life improvement and positive attitudes toward their current lives than children in orphanages and kinship care. Results suggested that perceived life improvements may have resulted from access to basic needs in extremely poor communities.

Keywords

AIDS orphans; care arrangement; China; life improvement; life satisfaction

The HIV pandemic remains a serious global challenge to public health. As of the year 2007, approximately 18 million children had been orphaned by HIV (Platt-McDonald, 2007). The United Nations estimates that by 2010 there will be at least 20 million AIDS orphans worldwide (Akukwe, 2007). AIDS orphans may be at risk of poorer nutritional status and higher levels of psychological distress than other children (Atwine, Cantor-Graae, & Bajunirwe, 2005; Li, Naar-King et al., 2008; Lindblade, Odhiambo, Rosen, & DeCock, 2003). Therefore there is great urgency to develop appropriate care arrangements for children orphaned by AIDS.

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Most studies regarding care arrangements of AIDS orphans have been conducted in Sub-Saharan Africa. In many African countries the extended family traditionally forms the basis for orphan care (Abebe & Aase, 2007; Nyamukapa & Gregson, 2005). Studies on the sustainability of the extended family system provide two different views. One is that with the drastic increase in the number of orphaned children, the extended family system may no longer be adequate to support the orphans' needs (Nyambedha, Wandibba, & Aagaard-Hansen, 2001; Nyambedha, Wandibba, & Aagaard-Hansen, 2003; Oleke, Blystad, & Rekdal, 2005). The other view suggests that, with appropriate community support, the informal care system can still support many orphans (Foster, Makufa, Drew, Mashumba, & Kambeu, 1997; Madhavan, 2004; Meintjes & Giese, 2006). Most of the Africa-based literature regarding care of orphans has focused on community-based interventions and community-based orphan care (Beard, 2005; Drew, Makufa, & Foster, 1998; Thurman et al., 2008). Community-based orphan care is believed to be the most common strategy for orphan care in Africa, and it may be the most cost-effective strategy while keeping children in familiar communities (Barnett & Blaikie, 1992; Beard, 2005; Hunter, 1990; UNICEF/UNAIDS, 1999). In Sub-Saharan Africa, orphan care seldom relies on institutional care. Hunter and Williamson (1997) indicated that the availability of institutional services for orphaned children was only sufficient to support less than 1% of the total number of orphans in the most affected countries. Institutional care is assumed to be highly undesirable, if not pathogenic, by some researchers (Larose, Bernier & Tarabulsky, 2005; Marsh, McFarland, Allen, McElhaney, & Land, 2003). Institutions often have limited capacity, only really catering to physical needs, and often are very expensive to operate (Drew et al., 1998). In the United States, public policies and legal standards also emphasize a preference on the extended-family-care arrangement for AIDS orphans (Levine, 1995). However, most of the literature depicts qualitative descriptions of care arrangements (Abebe & Aase, 2007; Beard, 2005; Drew et al., 1998; Nyambedha et al., 2001; Nyamukapa & Gregson, 2005; Oleke et al., 2005; Zhao et al., 2007), and there is a lack of empirical data to assess the impact of different care arrangements on AIDS orphans in developing countries, including China.

China has approximately 700,000 people living with HIV, with 20,000 individuals succumbing to AIDS in the year 2007 (UNAIDS, 2007). While the actual number of children orphaned by AIDS in China is unknown, the China Ministry of Health estimated that there were at least 100,000 AIDS orphans in China in 2004 (Zhao et al., 2007). The China Ministry of Civil Affairs projected that in the absence of effective prevention programs, the number of AIDS orphans will swell to 260,000 by 2010 (He & Ji, 2007). Limited data indicated that most of the orphans in China were living in a stressful environment and many of them were struggling with unmet basic needs such as food, shelter, education, and medical care, as well as unmet psychological needs (Zhao et al., 2007).

Many of the AIDS orphans in China live in Henan Province, an agricultural province in central China with a population of 96.66 million (Li, Fang et al., in press). Some commercial blood stations/centers started collecting cheap blood in remote rural areas of Henan province in the late 1980s. Because of extreme poverty, many farmers sold their blood to centers that used unhygienic blood collection procedures, resulting in the rapid spread of HIV (Cohen, 2004). Many of the infected people have subsequently died, leaving children behind (He & Ji, 2007; Zhao et al., 2007). Currently, there are four possible care strategies in China for children orphaned by AIDS: legal adoption, extended family/kinship care, institutional care (e.g., government-supported AIDS orphanages), and group homes (e.g., government-supported and community-based simulative families; Xinhuanet, 2007a). Because of the stigma and fear associated with HIV, few households adopt AIDS orphans in China (Wang, 2003), leaving the kinship or extended family as the primary family-based option for the orphans (Zhao et al., 2007). Based on a report from the civil affair department of Henan province, less than 5% of AIDS orphans were legally adopted and about 85% were raised by their extended families in

Henan province (Xinhuanet, 2007b). Institutional care and small group homes were recently developed by the government and local communities as alternatives to kinship care for double orphans to whom no other care option was available (West & Wedgwood, 2006).

Since 2004, the Chinese government has begun construction of AIDS orphanages in areas hardest hit by HIV. These efforts were part of the Chinese government's overall relief efforts entitled "the China Comprehensive AIDS Responses" or China CARES program (Population Reference Bureau, 2005). The basic strategies in China CARES were "four frees and one care": free antiretroviral drugs, free prevention of mother-to-child transmission, free voluntary counseling and testing, free schooling for children orphaned by AIDS, and care and economic assistance to the households of people living with HIV/AIDS (Wang, 2005). The local government in Henan Province also implemented the "Six Ones" programs for each of those villages that were hit hardest by HIV (i.e., building one paved road, one water well, one school, one health clinic, one orphanage, and one education room; Population Reference Bureau, 2005). As part of the China CARES and the Six Ones programs, AIDS orphanages were built in areas with a high prevalence of HIV to take care of some double orphans. The first of such government-sponsored orphanages was built in late 2004 in Henan Province.

AIDS orphanages were set up to meet orphans' basic needs: food, living quarters, medical care, and education. The orphanages were mainly funded by the local government or non-government organizations. Approximately 160 Yuan (or about \$20 in 2006–2007) was allocated to each child per month. The children were admitted to the AIDS orphanages according to three main informal criteria: (a) having lost both of their parents to AIDS, (b) having no extended family members who were physically capable of taking care of them, and (c) not being infected with HIV or other infectious diseases. The number of orphans in each orphanage in Henan Province ranged from 20 to 150. A typical AIDS orphanage was operated in dormitory fashion with children living in double-occupancy rooms and following a pre-established daily schedule for meals, bed time, entertainment (e.g., playing table tennis, board games, or watching TV), and other activities. The administrators and caregivers in the orphanages were usually selected from the local community by village leaders. Because governmental guidelines regarding the children-caregiver ratio were not established, there was a wide variation in this ratio, ranging from 6:1 to 15:1. Some large orphanages offered onsite classes for elementary school children, while generally middle school and high school children went to nearby village schools or public boarding schools for their education.

However, based on the experience of orphan care in Africa, many public health workers and AIDS advocates do not think institutional care is the best care arrangement for orphans (China Central Television [CCTV], 2004; Gao, 2004). In addition, because of limited budgets from local government to fund and operate AIDS orphanages, the existing orphanages were not sufficient to accommodate all the needy double orphans in these areas. Therefore, other community-based strategies, such as small group homes in community settings, were created to take care of additional double orphans. Group homes are usually managed by local residents who serve as "house parents" for a small number (4 to 6) of orphans in family style (e.g., the orphans would call house parents "father" and "mother" and call each other brothers or sisters). According to the local government's guidelines for AIDS relief, these group homes receive financial assistance based on the number of children being taken care of (e.g., about 160 Yuan per child per month). To qualify for the local government's financial subsidies, the house parents must meet standards established by the government. For example, the house parents must be legally married and healthy couples (i.e., without infectious diseases and physically able to take care of children); at least one of them must have completed middle school education; and they must be willing to foster AIDS orphans (Du & Wang, 2007). While there was no official criterion for selection of children, group homes usually take double orphans without known HIV infection status from the same (or nearby) villages.

Despite efforts by the Chinese government and local communities to improve the care for AIDS orphans, virtually no data are available regarding the quality of various care arrangements from children's perspectives. Because perceived life improvement and life satisfaction in each care setting are important indicators of the quality of care, it is important to assess these perceptions among children in various care arrangements, so both health care providers and policy-makers can be informed and the quality of orphan care can be improved. Therefore, this study was designed to compare AIDS orphans' perceptions of their life improvement and life satisfaction across three care arrangements in China (i.e., AIDS orphanage, group home, and kinship care).

Method

Participants and Sampling Procedure

Participants in the current study were a subsample of the baseline cohort of a longitudinal assessment of psychosocial needs of children affected by AIDS in China. The sampling and recruitment processes of the larger study have been described in detail elsewhere (Li, Fang et al., in press). The sample in the current study was only children who had lost both of their parents to HIV (i.e., double orphans). Children 6 to 18 years of age were eligible to participate in the study. Children with HIV infection and other chronic infectious diseases were eligible to participate, although no test for HIV or other infectious diseases was performed in the current study. Participants in the current study included a sample of 176 double orphans from four government-funded orphanages in two counties (2 orphanages in each county), 90 double orphans in extended family/kinship households, and 30 double orphans in eight group homes. Other AIDS orphanages have been built in these two counties, but only these four had admitted children at the time of the baseline survey. A total of 244 AIDS orphans were enrolled in these four AIDS orphanages at the time of survey and 176 (72%) participated in the survey. Eight group homes in one of these two counties had enrolled a total of 43 double orphans and 30 (70%) participated in the survey.

To recruit the double orphans from kinship households, we worked with village leaders to generate a list of the families caring for double orphans. We approached the families on the list and recruited one orphan in each household that was available to participate in the assessment. For siblings living in an orphanage or household, one child was randomly selected by tossing coins. This process was repeated until all eligible (and available) double orphans in the targeted villages were approached and recruited.

Consenting Procedure

When an eligible child was identified, local research team staff (accompanied by local community members) visited the child (at either the AIDS orphanage, home, or school) and provided him/her with a detailed description of the study design and potential benefit and risk (including confidentiality issues) and invited him/her to participate. Written assent was used for children 13 to 18 years of age; oral assent was used for children 6 to 12 years of age. Written or oral permission (in case of illiteracy) was obtained from caregivers/legal guardians who were available to sign a consent for the children's participation. In cases of oral consent/assent, community members accompanying the interviewers served as witnesses for the consenting procedure. In situations where no legal guardians were available to provide permission/consent, a "resource person" was identified for the child as a means of protection. Resource persons included legal representatives of the orphanages, community leaders, caregivers, older siblings (16 years of age or older), or school teachers. Each resource person received an information sheet with a detailed description of the study design and potential benefits and risks (including confidentiality issues) in order to help the child make the decision to participate or not to participate in the research. The research protocol, including consenting procedure, was

approved by the institutional review boards at both Wayne State University in the United States and Beijing Normal University in China.

Survey Procedure

Interviewers (i.e., trained education and psychology faculty and graduate students from local universities) administered an assessment battery (including the measures used in the current study) to children one-on-one or in a small group. Two children had difficulty reading; interviewers read each question in the assessment to these children and the children gave oral responses to the interviewers who recorded the responses in the questionnaire. During the survey, necessary clarification or instruction was provided promptly when needed. The entire assessment battery took about 75 to 90 minutes, depending on the age of the child. Younger children (e.g., those younger than 8 years) were offered a 10–15 minute break after every 30 minutes of assessment. Each child received a gift at completion of the assessment as a token of appreciation. The gifts included age-appropriate toys or school supplies such as books, notebooks, and pencils/pens.

Measures

Demographic characteristics—Children were asked to provide a number of individual and family characteristics during the survey. These characteristics included age, sex, and ethnicity. Four items were employed to assess the children's family socioeconomic status (SES): paternal and maternal education (no schooling, elementary school, middle school, \geq high school) and the main occupations their parents engaged in before death (farmer, migrant worker, small business vender, or other). A composite score was created to provide an estimate of children's family SES by indexing those children whose parents (father and mother) had more than an elementary school education and engaged in non-farming occupational activities. The SES composite score had a range of 0 to 4 with a higher score indicating a better family SES. Missing data on any of the four SES items were allowed during the calculation of the composite score.

Life improvement—Four items were used to ask children to compare some aspects of their current lives with those before the death of their parents (i.e., overall living condition, schooling, mood, and peer relationships). The items had a 5-point response option: 1 (*much worse*), 2 (*worse*), 3 (*the same*), 4 (*better*), 5 (*much better*). The Cronbach alpha for the four items was .74 (.70 for children \leq 12 years old; .75 for children $>$ 12 years old).

Life satisfaction—Two items were used to measure children's subjective evaluation of current living conditions. The first item asked children to rate the overall quality of their current life along a 5-point response option ranging from 1 (*very bad*) to 5 (*very good*). The second item asked children to indicate the degree to which they were satisfied with their current lives using a 5-point response option ranging from 1 (*very unsatisfied*) to 5 (*very satisfied*). The Cronbach alpha for the two items was .86 (.83 for children \leq 12 years old; .86 for children $>$ 12 years old).

Statistical Analyses

Chi-square test (for categorical variables) and ANOVA (for continuous variables) were employed to examine the group differences among children in three care arrangements in individual characteristics. Perceived life improvement and life satisfaction were examined by sex and age using ANOVA. One-way ANOVA with post hoc multiple comparisons using the least significant difference criterion was employed to assess the group differences of perceived life improvement and life satisfaction by care arrangement (i.e., group home, AIDS orphanage, kinship care). Finally, general linear model (GLM) analysis controlling for age (as a continuous

variable), sex, and family SES were used to assess the overall difference among different care arrangements. All statistical analyses were performed using SPSS for Windows version 11.5.

Results

Sample Characteristics

As shown in Table 1, the sample in the current study consisted of 165 boys (55.7%) and 131 girls (44.3%). There were more boys in the orphanage sample (61.4%) than either the group homes sample (53.3%) or the kinship care sample (45.6%). The mean age of the entire sample was 12.71 years with 13.20 for the group home sample, 12.42 for the orphanage sample, and 13.12 for the kinship care sample. The children's age ranged from 6 to 17 years with more than 95% being 9 years of age or older. Most of the sample (98.3%) was of Han ethnicity. More than 50% of the study sample reported that their fathers or mothers had no more than middle school education. About one third of the children did not know the education level that their parents had attained. Compared to children in the orphanages and kinship households, the children in group homes reported a higher level of parental education, although only the difference regarding paternal education reached statistical significance ($p < .001$). Family SES composite score was similar across the three groups.

Sex and Age Differences in Perceived Life Improvement and Life Satisfaction

As shown in Table 2, there was no sex difference in all items of perceived life improvement and life satisfaction. The younger children (≤ 12) reported higher scores than the older children (> 12) in all the items. A significant age difference existed in three of the four items of life improvement (i.e., living condition, schooling, and mood) and the two items of life satisfaction.

Perceived Life Improvement and Life Satisfaction by Care Arrangement

Table 3 depicts the group differences of perceived life improvement and life satisfaction by care arrangement. The bivariate comparison showed that there were significant differences among the three groups (i.e., group home, AIDS orphanage, and kinship care) in all six items of perceived life improvement and life satisfaction. The post hoc pair-wise comparison revealed that children living in group homes felt better than children in orphanages in all items, although the improvement in schooling and the two life satisfaction items didn't reach statistical significance. Likewise, the children living in orphanages reported a greater improvement than children in kinship households in all items except for peer relationships.

The GLM analysis (Table 4) revealed both multivariate and univariate significance ($p < .001$) with regard to the effect of care arrangement (i.e., group home, AIDS orphanage, and kinship care) on the six items of perceived life improvement and life satisfaction while controlling for age, sex, family SES, and the interaction term between care arrangement and sex. GLM analysis confirmed the results of bivariate analysis with significant main effects of care arrangement ($F = 10.45, p < .001$) and age ($F = 5.49, p < .001$). There was no significant effect with sex and its interaction with care arrangement in either multivariate test or univariate test. In addition, age was a significant covariate for mood improvement ($F = 6.19, p < .05$), the quality of current life ($F = 30.05, p < .001$), and satisfaction with the current life ($F = 8.54, p < .01$). Family SES was not a significant covariate in either multivariate or univariate test.

Discussion

Findings in the current study suggest that double AIDS orphans living in government-supported community-based group homes generally reported a higher level of life improvement and life satisfaction than their counterparts living in either the government-funded orphanages or kinship households. Some findings from this study are consistent with results regarding orphan

care arrangements in Sub-Saharan Africa where community-based orphan care was shown to be better than institutional care for AIDS orphans (Drew et al., 1998; Thurman et al., 2008). However, the situation of community-based care in China may differ from that in Africa in some aspects. Community-based care in Africa tends to be informal, relying on community-based organizations or non-governmental organizations (NGOs) (Desmond, Gow, Loening-Voysey, Wilson, & Stirling, 2002; Foster, Makufa, Drew, Kambeu, & Saurombe, 1996; Madhavan, 2004), while the community-based care in China (at least those included in the current study) received strong financial and logistic support from the local government.

Findings in the current study indicate that children living in group homes and orphanages felt better about their current living situations than children living in kinship households. This finding may be a result of a larger degree of unmet basic needs in kinship households, in comparison with government-supported programs. Participants in this study were selected from economically poor rural areas in Henan Province. Most of the children lost their parents to AIDS because of the extreme poverty (i.e., parents sold their blood to meet the family's financial needs). Because AIDS often precipitates financial collapse in families with marginal resources, children in such families, once they lost their parents to AIDS, were in desperate need of food, clothes, shelter, education, and medical care. With financial support from the local government, the material living conditions in orphanages and group homes were often better than those in extended families or kinship households (He & Ji, 2007). Although children in extended family care or kinship households were also entitled to financial support from local governments (i.e., 160 Yuan per child per month), such support might not be used directly for the orphans (China Development Brief, 2008; Wu, 2003). The findings in the current study underscore the importance of meeting basic needs of children orphaned by AIDS in poverty-dense communities.

The findings in the current study also suggested that children living in group homes reported better improvement than children in orphanages in some aspects of mental health (e.g., mood and peer relationships). This finding suggested that group homes may serve the children's psychological needs better than AIDS orphanages. In group homes, children live in a small group with their "parents" and "siblings" in an atmosphere of "a family" in their own communities. By contrast, the orphanage's centralized care model and the separation of children from their original communities might cause social isolation or distress among children (West & Wedgwood, 2006). The children also might have experienced stigmatization or discrimination from others in the community because they were placed in isolation and identified (or labeled) as AIDS orphans by living in an orphanage (West & Wedgwood, 2006). The low child-to-caregiver ratio in group homes, compared to that in orphanages, may be another factor contributing to the better mental health status among children in group homes.

Limitations

There are several limitations in the current study. First, although all the group homes in the area were sampled, the sample size of group home children ($n = 30$) was relatively small and limited the statistical power of the data analysis. However, even with this limited statistical power, the data revealed significant differences between group homes and other care arrangements across all items, which suggested a potentially strong effect of care arrangement on the well-being of those children. Second, the data were based on self-report of children's perceptions on life improvement and life satisfaction with no objective data available to further validate the findings. Finally, the findings of the current study may be confounded by other factors for which data were not available in the current study. For example, AIDS orphanages and group homes only accepted orphans without known HIV infection. It is possible that some of the orphans living in kinship households were infected with HIV, which would affect both physical and psychological aspects of their lives as their health deteriorates. Despite these

potential limitations, this study is one of the first efforts to examine the impact of AIDS orphan-care arrangements on the psychosocial well-being of orphans.

Implications and Future Research Directions

Findings in the current study have some important policy implications for orphan care in China. First, AIDS orphan care must first meet the basic needs of children. Considering the current socioeconomic situation in rural China and especially in most of the HIV epicenters, the top priority in AIDS orphan care is to meet the children's basic needs, such as food, shelter, clothing, schooling, and medical care. For orphans living in extended families or kinship households, the prevailing care option for AIDS orphans in most developing countries, relevant government agencies should develop a realistic approach to make sure financial support from the government and other sources will be mostly used for improving orphans' lives.

Second, government-funded orphanages are a very important component in AIDS orphan care in China, especially in resource-poor communities. However, the orphanages need to incorporate necessary psychological support into care. Children should be encouraged to maintain normal contact with relatives, friends, or peers in local communities. Orphanage administrators and caregivers should pay particular attention to the children's psychological needs and should be trained to provide some basic psychological support to the children.

Third, the local government should consider promoting group homes over other care options. As suggested by the findings in the current study, group homes provided better care arrangements compared with the other two care options in terms of children's perceptions of life improvement and life satisfaction. The local government and local community should take necessary measures to encourage more community volunteers to set up group homes and provide necessary training to house parents on parenting skills and psychological support. Based on the findings regarding the advantageous care of small group homes, the government and community should further promote legal adoption of children orphaned by HIV as an alternative option of community-based and kinship-based AIDS orphan care. The main barrier of legal adoption is the stigma and fear of HIV. Therefore, it is necessary to reduce stigma and discrimination against people living with HIV and children orphaned by AIDS through education and media campaigns. The government, NGOs, and other community-based organizations can make more efforts to raise awareness about HIV and AIDS orphans among the public so more families are willing to adopt children orphaned by AIDS. In addition, government and adoption agencies should establish some policies to facilitate the smooth transition of AIDS orphans into the adopting families and reduce unnecessary administrative burdens on post-adoption settlement, such as household registration and school admission.

Future study is needed to examine the effect of various care arrangements on meeting the psychosocial needs of AIDS orphans. Such psychosocial needs include children's interactions with their peers in local communities. Based on different care arrangements and different developmental stages of children, cost-effective and feasible psychological counseling or training in psychological coping skills should be provided to help these children.

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Table 1

Demographic Characteristics of Study Sample

Variables N (%)	Overall	Group Home	Orphanage	Kinship
N (%)	296(100%)	30(10.1%)	176(59.5%)	90(30.4%)
Gender *				
Boy	165(55.7%)	16(53.3%)	108(61.4%)	41(45.6%)
Girl	131(44.3%)	14(46.7%)	68(38.6%)	49(54.4%)
Ethnicity				
Han	286(98.3%)	28(100%)	173(98.3%)	85(97.7%)
Others	5(1.7%)	0(0%)	3(1.7%)	2(2.3%)
Mean Age (SD)	12.71(2.37)	13.20(1.16)	12.42(2.56)	13.12(2.22)
Age (year)				
6	1(0.3%)	0(0.0%)	1(0.6%)	0(0.0%)
7	4(1.4%)	0(0.0%)	4(2.3%)	0(0.0%)
8	9(3.1%)	0(0.0%)	9(5.2%)	0(0.0%)
9	16(5.4%)	0(0.0%)	10(5.7%)	6(6.7%)
10	31(10.5%)	0(0.0%)	21(12.1%)	10(11.1%)
11	26(8.8%)	2(6.7%)	19(10.9%)	5(5.6%)
12	46(15.6%)	7(23.3%)	25(14.4%)	14(15.6%)
13	32(10.9%)	8(26.7%)	12(6.9%)	12(13.3%)
14	50(17.0%)	9(30.0%)	27(15.5%)	14(15.6%)
15	45(15.3%)	4(13.3%)	27(15.5%)	14(15.6%)
16	29(9.9%)	0(0.0%)	16(9.2%)	13(14.4%)
17	5(1.7%)	0(0.0%)	3(1.7%)	2(2.2%)
Father's Education ***				
≤ Primary	84(29.3%)	2(8.0%)	47(26.9%)	35(40.2%)
Middle school	88(30.7%)	4(16.0%)	63(36.0%)	21(24.1%)
≥ Higher school	19(6.6%)	7(28.0%)	8(4.6%)	4(4.6%)
don't know	96(33.4%)	12(48.0%)	57(32.6%)	27(31%)
Mother's Education				
≤ Primary	96(34.4%)	5(18.5%)	56(33.1%)	35(42.2%)
Middle school	58(20.8%)	6(22.2%)	40(23.7%)	12(14.5%)
≥ Higher school	15(5.4%)	3(11.1%)	9(5.3%)	3(3.6%)
don't know	110(39.4%)	13(48.1%)	64(37.9%)	33(39.8%)
Father's Occupation				
Farming	177(63.4%)	23(79.3%)	105(63.3%)	49(58.3%)
Migrants	46(16.5%)	2(6.9%)	23(13.9%)	21(25.0%)
Others	56(20.1%)	4(13.8%)	38(22.9%)	14(16.7%)
Mother's Occupation				
Farming	195(70.4%)	23(79.3%)	114(67.9%)	58(72.5%)
Migrants	26(9.4%)	1(3.4%)	15(8.9%)	10(12.5%)
Others	56(20.2%)	5(17.2%)	39(23.2%)	12(15.0%)
Mean of SES (SD)	2.02(1.19)	1.93(1.05)	2.12(1.15)	1.84(1.28)

*
 $p < .05$;

 $p < .001$

Table 2
Gender and Age Differences in Perceived Life Improvement and Life Satisfaction

Variables Mean (SD)	Gender		Age	
	Male	Female	≤ 12	> 12
Life improvement				
Living condition	3.37(1.32)	3.21(1.32)	3.52(1.31)	3.11(1.29) **
Schooling	3.40(1.33)	3.38(1.37)	3.61(1.32)	3.21(1.34) *
Mood	2.96(1.38)	2.74(1.35)	3.06(1.39)	2.71(1.33) *
Peer relationship	3.33(1.16)	3.31(1.27)	3.41(1.29)	3.24(1.15)
Life satisfaction				
Overall quality	3.73(1.19)	3.63(1.25)	4.14(1.18)	3.31(1.13) ***
Satisfaction	3.73(1.14)	3.63(1.25)	4.02(1.22)	3.42(1.09) ***

* $p < .05$;

** $p < .01$;

*** $p < .001$

Table 3
Group Differences in Perceived Life Improvement and Life Satisfaction

Variables Mean(SD)	Overall	Group home(g)	Orphanage (o)	Kinship (k)	Post hoc pair-wise comparison ¹
Life improvement					
Living condition	3.30(1.32)	4.35(1.09)	3.61(1.15)	2.38(1.16) ^{***}	(g, o) [*] (o, k) ^{***} (g, k) ^{***}
Schooling	3.39(1.34)	3.75(1.48)	3.57(1.28)	2.94(1.32) ^{**}	(g, o) (o, k) ^{**} (g, k) ^{**}
Mood	2.86(1.37)	3.93(1.11)	3.10(1.30)	2.07(1.17) ^{***}	(g, o) ^{***} (o, k) ^{***} (g, k) ^{***}
Peer relationship	3.32(1.21)	4.18(0.95)	3.36(1.21)	2.96(1.13) ^{***}	(g, o) ^{***} (o, k) (g, k) ^{***}
Life satisfaction					
Overall quality	3.69(1.22)	4.31(0.85)	4.12(0.95)	2.64(1.13) ^{***}	(g, o) (o, k) ^{***} (g, k) ^{***}
Satisfaction	3.69(1.19)	4.34(0.72)	4.06(0.98)	2.76(1.14) ^{***}	(g, o) (o, k) ^{***} (g, k) ^{***}

¹Note: adjusted for age, gender, and family SES

* $p < .05$;

** $p < .01$;

*** $p < .001$

GLM Analysis of Perceived Life Improvement and Life Satisfaction by Care Arrangement

Table 4

	Main effect			Interaction		Covariates	
	Group of care arrangement	Sex	Group by sex	Age	SES		
Multivariate Test	10.45 ^{****}	< 1	< 1	5.49 ^{****}	1.55		
Life improvement							
Living condition	35.47 ^{****}	< 1	< 1	1.21	< 1		
Schooling	8.91 ^{***}	< 1	< 1	1.45	< 1		
Mood	22.33 ^{****}	< 1	< 1	6.19 [*]	< 1		
Peer relationship	8.07 ^{***}	< 1	< 1	2.28	< 1		
Life satisfaction							
Overall quality	51.96 ^{****}	< 1	1.16	30.05 ^{****}	1.01		
Satisfaction	38.38 ^{****}	1.61	2.42	8.54 ^{**}	2.73		

* $p < .05$;

** $p < .01$;

*** $p < .001$