

## Letter to the Editor



## Subjective Well-being and Family Functioning among Adolescents Left Behind by Migrating Parents in Jiangxi Province, China\*

ZHOU Jia<sup>1,2,^</sup>, HU Fang<sup>3,^</sup>, WU Jing<sup>4</sup>, ZOU Zhi Yong<sup>1</sup>, WANG Yi Xin<sup>1</sup>, PENG Hua Can<sup>1</sup>,  
VERMUND Sten H<sup>5</sup>, HU Yi Fei<sup>6,#</sup>, and MA Ying Hua<sup>1,#</sup>

**We sought to identify the differences between adolescents left behind in their home villages/towns (LBA) and non-left behind adolescents (NLB) on subjective well-being and family functioning due to parental migration in south China. We used a stratified cluster sampling method to recruit middle school students in a city experiencing population-emigration in Jiangxi Province in 2010. Participants included adolescents from families with: (1) one migrant parent, (2) both parents who migrated, or (3) non-left behind adolescents (i.e., no migrant parent). To determine predictors of subjective well-being, we used structural equation models. Adolescents left behind by both parents (LBB) were less likely to express life satisfaction ( $P = 0.038$ ) in terms of their environments ( $P = 0.011$ ) compared with NLB. A parent or parents who migrated predicts lower subjective well-being of adolescents ( $P = 0.051$ ) and also lower academic performance. Being apart from their parents may affect family functioning negatively from an adolescent's viewpoint. Given the hundreds of millions of persons in China, many who are parents, migrating for work, there may be mental health challenges in some of the adolescents left behind.**

According to the *China Floating Population Development Report of 2012*, the number of migrants (the 'floating population') in China was estimated to be 253 million (17.5%) of 1.14 billion adults aged 15 or older in 2015<sup>[1]</sup>. Correspondingly, adolescents who have been left behind (LBA) in their

home villages, towns, or cities may have special emotional needs. LBA has been defined as adolescents who stay at home with either one or both of their parents relocating elsewhere to work for at least six months. Investigators have speculated that LBA feel the deprivation of absent parents, even a sense of abandonment and a decline in their sense of subjective well-being (SWB), family functioning, and inadequate social-emotional attachments. One study found that LBA who were separated from their parents at a younger age had more symptoms of depression and anxiety, especially for those separated from their mothers alone or from both parents<sup>[2]</sup>.

SWB can be used to evaluate an adolescent's emotion and life satisfaction, reflecting their likely social functioning and adaptability. SWB involves a multidimensional evaluation of an adolescent's life, including cognitive judgments of life satisfaction and affective evaluations of emotions and moods in relation to life environments and experiences. Family functioning has been defined as the degree of family cohesion and positive communication, including parental involvement with an adolescent. In a household with migrant parents, it may be particularly difficult for a left-behind adolescent to define family roles and boundaries. Parents' migrating to work with periods of separation from children could affect family functioning regarding family members' intimacy, a sense of secure attachment, timely support for adolescents' needs, and effective communications with family members.

doi: 10.3967/bes2018.049

\*This study was supported by Sub Four Programme of Public Health Welfare Research Special Funds [grants No.201202010]; Natural Science Fund Commission of China [H2609/81673232]; and the Yale Center for Interdisciplinary Research on Acquired Immune Deficiency Syndrome supported by National Institutes of Health grant [P30MH062294].

1. Institute of Child and Adolescent Health, Health Science Center, Peking University, Beijing 100191, China; 2. The National Clinical Research Center for Mental Disorders & Beijing Key Laboratory of Mental Disorders, Beijing Anding Hospital, Capital Medical University, Beijing 100088, China; 3. Department of Child Care, Guangzhou Women and Children's Medical Center, Guangzhou 510623, Guangdong, China; 4. School of Agroforestry & Medicine, the Open University of China, Beijing 100081, China; 5. Yale School of Public Health, Yale University, New Haven, CT 06510-3201, USA; 6. Department of Child, Adolescent and Maternal Health, School of Public Health, Capital Medical University, Beijing 100069, China

Given the magnitude of the migration in China, the impact of parental deprivation on LBA needs far more investigation. We hypothesized that an adolescent being left behind, with possible parental deprivation, could reflect or predict incomplete family functioning. Suboptimal family functioning may diminish perceived happiness and ultimately affect adolescents' SWB. LBA with low SWB may be vulnerable to psychological adaptation problems, such as maladaptive behaviors and depression.

Many studies on migration have presented negative consequences for LBA. However, fewer studies addressed the influence of parental migration through the views of the adolescents. To the best of our knowledge, the present study is the first attempt to explore the associations between SWB and paternal migration *via* family functioning mediation among LBA in China.

A cross-sectional study was conducted in Gaoan, Jiangxi Province, a city with high rates of out-migration of adult labor in south-central China, from January to April 2010. When there is a relatively high population outflow compared to the population influx, we term these labor-sourcing areas as 'emigrating' cities/provinces. Given the high mobility and the unregistered status of migrants in China, it is difficult to obtain a random sample of migrants for a study. Sample size was determined by

$$N = \frac{u^2 \alpha \sigma}{\delta^2} \quad (1)$$

according to the result of the largest variance in Gu's study on family functioning and SWB ( $\delta = 0.05 \times \sigma$ ,  $\alpha = 0.05$ )<sup>[3]</sup>,  $N = 1,537$ . In consultation with the local education department and local junior and senior high schools, we randomly selected two junior high (middle) schools out of 23 and one senior high school out of six to estimate the local prevalence of LBA. Students from the selected schools were stratified by grade level; we then randomly selected three classes of each grade in middle school and six classes of each grade in senior high school. The students were excluded from the survey if they refused to attend the survey or didn't have a basic understanding of the questionnaire or had a psychological problem unable to sit through the survey. There were no specific inclusion criteria. We have described the study design and participants in detail elsewhere<sup>[4]</sup>.

The study protocol was approved by the ethical review board of Peking University (IRB00001052-10025).

We collected information about socio-demographic characteristics, SWB and family functioning. The survey was administered by each participant in class with the help of trained research personnel.

The questionnaire was developed to collect the information on age, sex, grade, academic performance, left-behind status, family structure, household income, and whether or not the respondent was a single (i.e., an only) child. The question 'What do you think about your academic performance, compared with your classmates?' was used to self-report individual academic performance. The 'left behind' measure was determined by the following four questions: 'Is your mother/father working away from home?' and 'How long has your mother/father been working away from home up to now'. Clarifying which one parent, or both parents, would follow if the reply to the first question was 'yes', along with clarifying the length of time of being absent. We recognized adolescents as LBA if they had been left behind while their mothers and/or fathers traveled to distant areas and worked there for at least six months<sup>[1]</sup>. Family structure included four types: extended family, nuclear family, restructured family, and single-parent family. This classification method was based on measures designed to assess 'health-related risk behaviors and their risk factors among adolescents in China'. Socioeconomic status (SES) was assessed combining education, household income, and employment status. According to the total score, SES can be divided into three levels: disadvantaged, average, and higher SES.

We measured SWB with the *SWB Scale* based on Diener's Happiness Scale and Scott Huebner's Multidimensional Student's Life Satisfaction Scale. A higher total score means a higher level of life satisfaction and happiness. The *Happiness Scale* instructed participants to rate to what extent they have experienced 14 different feelings or emotions (6 Positive and 8 Negative) during the previous week, using a 7-point Likert Scale<sup>[5]</sup>. Adolescents' subjective perceptions of life satisfaction in 6 domains, including friendship, family, school, academic performance, freedom, and living environment constituted the 37-item *Life Satisfaction Scale*. The total score was the sum of the scores of the six domains and the score for each domain was the sum of the scores of all items. These instruments have been found to have adequate validity and reliability<sup>[4]</sup>.

Family functioning was assessed by the Family Assessment Device, a 60-item questionnaire that assessed the structural and organizational patterns of the family and the quality of interaction among family members and reflected six dimensions of family functioning. It indicates the way that an individual describes his/her family in the previous two months based on a 4-point scale from one (positive functioning) to four (negative functioning). Since the higher score of family functioning means a stronger negative family function, to avoid double negative expression, we used 'negative family functioning' to describe family functioning. The validity and reliability of the Chinese translation of this scale were assessed and the Cronbach's  $\alpha$  coefficient ranged from 0.78 to 0.86<sup>[6]</sup>. We also assessed family functioning ('general functioning'; Table 1)<sup>[7]</sup>.

We constructed a database using EpiData (version 3.1, The EpiData Association, Odense, Denmark). Descriptive statistics, including measures of central tendency and dispersion, were computed for continuous data, which were compared among three migrant status groups using parametric (e.g., ANOVA test) and nonparametric tests (e.g., Kruskal-Wallis test). Frequency distributions were estimated for categorical data, which were compared among three migrant status groups using Chi-square tests. The living-with- parents group (NLB = Non-left-behind adolescents) was compared to each of the two left-behind groups (LBO = adolescents who were left behind by one parent, LBB = adolescents who were left behind by both parents). Statistical analyses were performed using

2-tailed tests, significant level set as  $\alpha = 0.05$ . However, we used partitions of  $\chi^2$  methods for pairwise comparisons among  $R \times C$  tables; we used Bonferroni correction to generate a new significant level as  $0.05/n$  ( $n$  referred to the number of groups). If parametric and nonparametric tests were significant ( $\alpha \leq 0.05$ ), Dunnett- $t$  tests and Nemenyi tests were used for pairwise comparisons.

Structural equation modeling was fitted with AMOS (Acoustic Meteorological Oceanographic Survey) for negative family functioning, socio-demographic variables, family migrant status, and SWB. All analyses were conducted with SPSS 22.0<sup>®</sup> for Windows (Statistical Product and Service Solutions, SPSS for Windows; IBM Inc., IL, USA). The study was conducted and reported in accordance with the Strengthening and the Reporting of Observational Studies in Epidemiology (STROBE) recommendations<sup>[8]</sup>.

We recruited 1,674 students and excluded the following participants: Six for missing male or female sex data, 12 for missing data on the left behind condition and/or age. No youth refused to participate and we analyzed 1,656 valid records.

The age of the respondents ranged from 11 to 19 with a mean age of  $15.8 \pm 1.95$  years old (Table 2). Sex, grade levels, and self-reported academic performance were similar ( $P > 0.05$ ) among NLB, LBO, and LBB. Compared with NLB, LBB were older, less likely be in nuclear family, more boarding in school, and having lower SES. There were no differences between NLB and LBO in terms of socio-demographic characteristics.

**Table 1.** Description of the Dimensions of the Family Assessment Device

Serial Number	Dimension	Explanation
1	Problem solving	Measure of the family's ability to resolve problems
2	Communication	Measure of the extent to which the exchange of information among family members occurs in a direct and clear manner
3	Roles	Measure of the clarity and equity in assigning tasks to family members and the way performed by family members
4	Affective responsiveness	Measure of the family members' capacities to experience appropriate affection in the family context
5	Affective involvement	Assessment of the extent of family members' interests in each other's activities and the way they value these activities
6	Behavior control	Measure of the way that the family maintains discipline and standards of behaviors
7	General function	Assessment of the level of overall health or pathology of the family

NLB, LBO and LBB were different in life satisfaction, especially in friendship and environment domain, but differences were of borderline significance in their overall SWB scores (Table 3). Compared with NLB, LBB were less likely to have higher life satisfaction ( $P = 0.013$ ) in terms of both friendship ( $P = 0.015$ ) and environment ( $P = 0.011$ ). In all six sub-dimensions of negative family functioning, the three groups were similar ( $P > 0.05$ ). Compared with NLB, LBO had lower scores in friendship and environment domains of life satisfaction scale.

Structural equation modeling provided a reasonable fit to the data using AMOS ( $\chi^2 = 170.51$ ,  $df = 18$ ,  $P < 0.001$ ). The structural equation modeling

presented a scenario of associations between negative family functioning, socio-demographic variables, and migrant status with SWB. Good academic performance and lower score of negative family functioning (positive family function) was associated with SWB. Non-nuclear family structure, poor academic performance, lower SES and younger age were predicting negative family functioning. Girls had positive family functioning compared with boys. Adolescents left behind by parents had poorer academic performance, while higher SES was predicting good academic performance (Table 4, Figure 1). In structural equation modeling, SWB was negatively associated with migrant status ( $P = 0.051$ ), validated with results in Table 3.

**Table 2.** Socio-demographic Characteristics of 1,656 Students by Migrant Status

Characteristic	NLB ( <i>n</i> = 1,087)	LBO ( <i>n</i> = 313)	LBB ( <i>n</i> = 256)	<i>P</i>	NLB vs. LBB ( <i>P</i> )	NLB vs. LBO ( <i>P</i> )
Female, <i>n</i> (%)	595 (54.7)	173 (55.3)	153 (59.8)	0.340		
Age in years (mean ± SD)	15.8 ± 1.9	15.7 ± 2.0	16.1 ± 2.0	0.025	<b>0.012</b>	0.600
Only child, <i>n</i> (%)	238 (21.9)	56 (17.9)	39 (15.2)	0.032	<b>0.018</b>	0.130
Boarding, <i>n</i> (%)	709 (65.2)	189 (60.4)	199 (77.7)	<b>&lt; 0.001</b>	<b>&lt; 0.001</b>	0.120
Grade, <i>n</i> (%)				0.370		
Junior high one	202 (18.6)	70 (22.4)	55 (21.5)			
Junior two	228 (21.0)	63 (20.1)	37 (14.5)			
Junior three	174 (16.0)	52 (16.6)	40 (15.6)			
Senior high one	111 (10.2)	31 (9.9)	28 (10.9)			
Senior two	204 (18.8)	52 (16.6)	45 (17.6)			
Senior three	168 (15.5)	45 (14.4)	51 (19.9)			
Academic performance, <i>n</i> (%)				0.420		
Fail	134 (12.3)	40 (12.8)	42 (16.4)			
Poor	251 (23.1)	72 (23.0)	70 (27.3)			
Average	329 (30.3)	98 (31.3)	62 (24.2)			
Good	296 (27.2)	84 (26.8)	67 (26.2)			
Excellent	77 (7.1)	19 (6.1)	15 (5.9)			
SES, <i>n</i> (%)				<b>0.003</b>	<b>&lt; 0.001</b>	0.510
Low	368 (33.9)	98 (31.3)	67 (26.2)			
Middle	309 (28.4)	99 (31.6)	105 (41.0)			
High	410 (37.7)	116 (37.1)	84 (32.8)			
Family structure, <i>n</i> (%)				<b>&lt; 0.001</b>	<b>&lt; 0.001</b>	0.530
Extended family	262 (24.1)	86 (27.5)	140 (54.7)			
Nuclear family	769 (70.7)	211 (67.4)	110 (43.0)			
Restructured family	24 (2.2)	5 (1.6)	6 (2.3)			
Single-parent family	32 (2.9)	11 (3.5)	0 (0.0)			

**Note.** Boarding is defined by living in school dormitories; Nuclear family indicates one child and his/her parents; SES = socioeconomic status; NLB = Non-left-behind adolescents, LBO = adolescents who were left behind by one parent, LBB = adolescents who were left behind by both parents. Chi square statistic for continuous measures was by Kruskal-Wallis test. Age was compared with ANOVA. Significant after Bonferroni correction ( $P < 0.017$ ) are in bold.

Our assessment of SWB and family functioning of students whose parents live elsewhere due to parental migration for job opportunities in China suggests substantial stresses for these students who are left-behind. Parenting of preadolescents and/or adolescents helps guide young people towards increasing social competence and psychological well-being. Nurturance from parental involvement enables adolescents to more effectively socialize their functioning as responsible, competent individuals. When parents migrate away from adolescents, this process may be distorted, even if other family members fill in as surrogate parents. Some domains of SWB of the LBA were negatively compromised in varying degrees, notably life satisfaction (friendship and/or environment). Many factors affected the SWB of the adolescents in our study, such as academic performance, and family functioning. However, our study only found the associations between parents migrating and

adolescents' SWB to be of borderline statistical significance, such that there is doubt whether our findings are due to chance, consistent with 'no evidence for a direct parental migration effect on school enjoyment'<sup>[9]</sup>.

Longitudinal studies<sup>[10,11]</sup> have demonstrated that family functioning is an important predictor of problematic behavior and psychopathology in adolescents. We found that the overall level of family functioning was significantly correlated with SWB. A higher level of family functioning was positively correlated with the increases of SWB. Family functioning plays the intermediate role between SWB and migrant status of the parents. Family functioning measures the extent to which a family works as a unit and reflects a family member's perception of and satisfaction with the functional state of the family. Family functioning is the central to the quality of life and SWB for adolescents. Families of LBA may be less cohesive than normal families, and

**Table 3.** Subjective Well-being (SWB) and Negative Family Functioning by Migrant Status, *n* (%)

Dimension	NLB Mean (s)	LBO Mean (s)	LBB Mean (s)	<i>P</i>	NLB vs. LBB ( <i>P</i> )	NLB vs. LBO ( <i>P</i> )
SWB	4.08 (0.57)	4.02 (0.56)	3.99 (0.58)	0.063	0.036	0.140
Happiness Scale						
Positive emotion <sup>a</sup>	3.63 (1.20)	3.67 (1.31)	3.51 (1.12)	0.250		
Negative emotion <sup>a</sup>	2.54 (0.90)	2.53 (0.85)	2.62 (0.85)	0.120		
Life satisfaction <sup>a</sup>	4.41 (0.69)	4.33 (0.66)	4.30 (0.68)	0.022	<b>0.013</b>	0.090
Friendship <sup>a</sup>	4.94 (0.87)	4.84 (0.87)	4.83 (0.87)	<b>0.016</b>	<b>0.015</b>	<b>0.045</b>
Family <sup>a</sup>	5.36 (1.07)	5.26 (1.10)	5.29 (1.10)	0.360		
School <sup>a</sup>	4.24 (1.01)	4.22 (0.97)	4.18 (0.99)	0.610		
Academic <sup>a</sup>	3.32 (1.07)	3.24 (1.04)	3.21 (1.05)	0.230		
Freedom <sup>a</sup>	4.45 (1.19)	4.44 (1.10)	4.36 (1.19)	0.530		
Environment <sup>a</sup>	4.13 (1.00)	3.98 (0.99)	3.96 (1.02)	<b>0.009</b>	<b>0.011</b>	<b>0.028</b>
Negative family functioning						
General Functioning <sup>a</sup>	2.12 (0.38)	2.15 (0.37)	2.12 (0.37)	0.280		
Problem Solving <sup>a</sup>	2.30 (0.40)	2.31 (0.43)	2.33 (0.40)	0.590		
Communication <sup>a</sup>	2.34 (0.38)	2.38 (0.38)	2.37 (0.39)	0.150		
Roles <sup>a</sup>	2.26 (0.31)	2.31 (0.31)	2.29 (0.30)	0.060		
Affective responsiveness	2.44 (0.42)	2.45 (0.41)	2.46 (0.42)	0.580		
Affective involvement <sup>a</sup>	2.18 (0.43)	2.20 (0.46)	2.22 (0.44)	0.250		
Behavior control <sup>a</sup>	2.32 (0.29)	2.33 (0.33)	2.33 (0.31)	0.680		

**Note.** NLB = Non-left-behind adolescents, LBO = adolescents who were left behind by one parent, LBB = adolescents who were left behind by both parents. <sup>a</sup>Chi square statistic for continuous measures was by Kruskal-Wallis test.

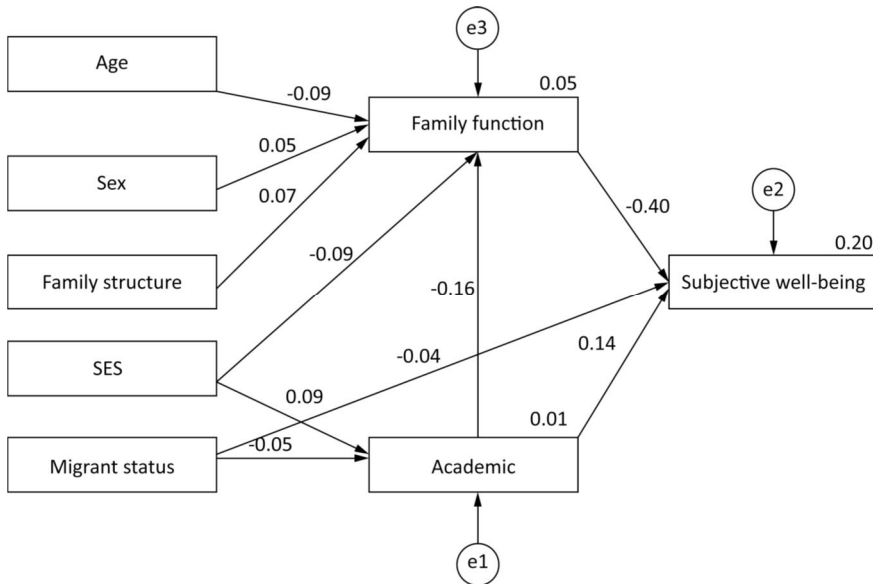
family functioning is a critical issue to consider among LBA. Lack of day to day accompaniment from one or both parents may be the equivalent to parental deprivation to some degree. Though our study only found a negative association between SWB and parents' migrant status with borderline significance, the nuclear family structure was more likely predicting a positive family functioning

consistent with the finding with another study in China 'psychosocial well-being of LBC depends more on the relationship bonds between nuclear family members and the availability of support'. Student academic performance may have served as an explicit factor of family functioning performed by parents, the latter moderating the effect of migrant status to SWB.

**Table 4.** Structural Equation Modeling among the Migrant Status, Subjective Well-being, Negative Family Functioning, Sociodemographic Characteristics of Students

	Variables		Estimate	SE	CR	P
SWB	<---	Migrant Status	-0.02	0.01	-1.95	0.051
SWB	<---	Academic	0.07	0.01	6.10	<0.001
SWB	<---	NFF	-0.60	0.03	-17.72	<0.001
NFF	<---	Family Structure	0.04	0.02	2.96	0.003
NFF	<---	Sex	0.04	0.02	2.05	0.041
NFF	<---	Academic	-0.05	0.01	-6.44	<0.001
NFF	<---	SES	-0.04	0.01	-3.55	<0.001
NFF	<---	Age	-0.02	0.01	-3.78	<0.001
Academic	<---	Migrant status	-0.05	0.03	-2.14	0.032
Academic	<---	SES	0.12	0.03	3.61	<0.001

**Note.** The model showed an acceptable fit to the data (root mean square error of approximation = 0.07, incremental fit index = 0.75, normed fit index = 0.73, comparative fit index = 0.74). SWB = subjective well-being, NFF = negative family functioning, Academic = Academic performance, SES = socioeconomic status, SE = Standard error, CR = Critical ratio.



**Figure 1.** Structural equation modeling among sex, academic performance, family function, family structure, SES, SWB, and migrant status. Family structure: 1 = extended family, 2 = nuclear family, 3 = restructured family, 4 = single-parent family; SES: 1 = low, 2 = middle, 3 = high; Academic: 1 = fail, 2 = poor, 3 = average, 4 = good, 5 = excellent; Migrant status: 1 = NLB, 2 = LBF, 3 = LBM, 4 = LBB.

One study suggested that relaxing academic standards could increase students' happiness. However, our finding of the correlation between academic performance and SWB was consistent with a 2005 review of professional success and happiness in which SWB and academic achievement were mutually reinforcing<sup>[12]</sup>. Our study showed adolescents with better academic performance also experienced higher SWB. Good academic performance presumably makes adolescents feel happier, further facilitating better school performance, a sort of positively reinforcing cycle.

Our study had some limitations. First, since we conducted the study in an area of south-central China, our findings may not be generalized nationwide. Second, the cross-sectional nature of the study did not allow for inferences of causality between the explanatory variables and lower SWB. Hence, only associations are inferred. Longitudinal data are needed to further the understanding of the effects of being left behind on SWB among adolescents. A third limitation was that we used a sample size based on simple random sampling method rather than a multiple-stage sampling; we were underpowered for some assessments of association.

Our study has identified a number of significant factors associated with lower SWB in Chinese adolescents, including negative family functioning, lower academic performance, and parental migration. Interventions can be developed to promote physical and mental health among youth left behind by migrant parents. Youth who can cope effectively to enhance SWB may effectively reduce negative behaviors and reactions.

No conflict of interest to declare.

<sup>^</sup>ZHOU Jia and HU Fang contributed equally to this study.

<sup>#</sup>Correspondence should be addressed to MA Ying Hua, Tel: 86-10-82802861, E-mail: yinghuama@bjmu.edu.cn; HU Yi Fei, Tel: 86-10-83911747, E-mail: huyifei@yahoo.com

Biographical notes of the first authors: ZHOU Jia, female, born in 1989, Master's degree, majoring in child and adolescent development, growth, and health

promotion; HU Fang, female, born in 1984, Master's degree, majoring in children's health care.

Received: September 10, 2017;

Accepted: April 26, 2018

## REFERENCES

1. The 2012 report to the floating population development of China. Department of floating population service and management, national population and family planning commission of China. Beijing, 2012. (In Chinese)
2. Jia Z, Shi L, Yang C, et al. Health-related quality of life of "left-behind children": a cross-sectional survey in rural China. *Qual Life Res*, 2010; 19, 775-80. (In Chinese)
3. Gu H. study on the relationships between family function and subject well-being of adolescent. Changchun, Dongbei Normal University, 2009. (In Chinese)
4. Hu F, Ma Y, Cheng A, et al. Subjective well-being among middle school students: demographic and psychological influencing factors. *Chin J Sch Health*, 2011; 32, 417-18. (In Chinese)
5. Zhang X, He L, Zheng X. Adolescent Students' Life Satisfaction: Its Construct and Scale Development. *J Psychological Science* 2004; 27, 1257-60. (In Chinese)
6. Shek DT. Assessment of Family Functioning in Chinese Adolescents: The Chinese Version of the Family Assessment Device. *Research on Social Work Practice*, 2002; 12, 502-24.
7. Black DW, Shaw MC, McCormick BA, et al. Marital status, childhood maltreatment, and family dysfunction: a controlled study of pathological gambling. *J Clin Psychiatry*, 2012; 73, 1293-7.
8. von Elm E, Altman DG, Egger M, et al. The Strengthening of Reporting of Observational Studies in Epidemiology (STROBE) Statement: guidelines for reporting observational studies. *Int J Surg*, 2014; 12, 1495-9.
9. Jordan LP, Graham E. Resilience and well-being among children of migrant parents in South-East Asia. *Child Dev*, 2012; 83, 1672-88.
10. Salman S, Idrees J, Hassan F, et al. Predictive Factors of Suicide Attempt and Non-Suicidal Self-Harm in Emergency Department. *Emerg (Tehran)*, 2014; 2, 166-9.
11. Mohammadi M, Zarafshan H. Family function, Parenting Style and Broader Autism Phenotype as Predicting Factors of Psychological Adjustment in Typically Developing Siblings of Children with Autism Spectrum Disorders. *Iran J Psychiatry*, 2014; 9, 55-63.
12. Lyubomirsky S, King L, Diener E. The benefits of frequent positive affect: does happiness lead to success? *Psychol Bull*, 2005; 131, 803-55.