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Depression risk of 'left-behind children' in rural China

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ABSTRACT

The study aims to explore the risk of depression in left-behind children in grades four–six in rural China and to identify the factors associated with increased depression risk in this population. In Hubei Xiantao, a school-based sample of 1000 children was recruited with 875 children (590 left-behind children, 285 controls) providing all relevant information. The adjusted mean children's depression inventory (CDI) score of left-behind children was significantly higher than that of controls ($P<0.01$). Left-behind children's depression risk rate was much higher than control's ($P<0.01$). Left-behind children had a higher likelihood of depression risk than controls (migrant fathers: adjusted odds ratio (OR)=3.42, 95% confidence interval (CI)=1.86–6.28; migrant mothers: OR=2.62, 95% CI=1.10–6.22; migrant parents: OR=2.73, 95% CI=1.77–4.20). Respondents with low socioeconomic status (SES) (OR=2.64, 95% CI=1.42–4.93) had a higher likelihood of depression risk than the middle SES cohort. With middle levels of social support as the referent, respondents with low levels of social support (OR=5.86, 95% CI=3.90–8.79) had a higher likelihood of depression risk; respondents with high levels of social support (OR=0.50, 95% CI=0.29–0.86) had a lower likelihood of depression risk. The results indicate that the left-behind children are at greater risk for developing depression.

1. Introduction

Depression in children and adolescents is a common and recurrent disease associated with significant morbidity and mortality (Masi et al., 2000; Ang and Huan, 2006; Swenson et al., 2008). It can prevent a child from reaching his or her full potential by interfering with normal development (Birmaher et al., 2002). It is also associated with memory impairments and difficulty with interpersonal relationships (Zlotnick et al., 2000; Gunther et al., 2004). In addition, early-onset depression is associated with low self-esteem (Renouf et al., 1997; Stavrakaki et al., 1991), and increased risk for suicidal behaviours (Ang and Huan, 2006; Hardt et al., 2011). Adolescents with early-onset depression are at greater risk of substance abuse, recurring depression and other emotional and mental health problems in adulthood (Akiskal et al., 1981; Wilcox and Anthony, 2004; Lubman et al., 2007). It has been shown that depressed children have an increased risk of affective disorders in adult life, which leads to psychiatric hospitalisation and psychiatric treatment (Harrington et al., 1990).

Prevention, early detection and treatment of depression are needed to protect children and adolescents from the consequences of depression and to improve adult function. Determining which groups have the highest depression risk is essential in developing community intervention efforts that specifically target high-risk groups.

In China, the term 'left-behind children' refers to children who stay at home when both of their parents or one parent relocates elsewhere to work for at least six months (Duan and Zhou, 2005). It is estimated that about 120–150 million migrant workers have gone to major cities in China over the last two decades (Pan, 2002), and the number of migrant workers were increased to around 300 million by the end of 2010 (Lague, 2003). The situation seems to be even more critical in provinces such as Hubei, Henan, Anhui, Hunan and Jiangxi where a large segment of the rural population has migrated to cities for working opportunities (China People's Daily, 2004). Although some rural migrants have brought their families with them to the cities to which they have relocated, most parents have opted not to take their children with them because they cannot afford to raise them in expensive urban settings. A 2005 study estimates that about 23–30 million children remain in the rural communities to be cared for by a single parent, grandparents, other relatives or lived by themselves (Duan and Zhou, 2005). One study found that, among left-behind children in situations where both

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parents have migrated, 74.0% were left in the care of their grandparents, 12.8% were left with their uncles/aunts and 13.2% were left with no relatives (Fan et al., 2010). Those children who are left behind can usually see their parents once a year during the seven-day Chinese Spring Festival. The rest of time, they communicate with their parents through telephone, letters and messages. In rural China, leaving children behind is a common socioeconomic phenomenon not only of low-income families but across the socioeconomic spectrum.

In recent years, attention has been drawn to the psychosocial impact of this phenomenon on children in China and many other countries. In Philippines where this phenomenon also exists, studies have shown that left-behind children expressed greater feelings of anger, confusion and worry when compared to their peers (Asis, 2006). Chinese left-behind children experience significant mental health problems (e.g., psychosocial dysfunction, and emotional and behavioural problems) (Fan et al., 2010; Jia et al., 2010). However, research on depression risk among these children is limited. It has been demonstrated that children and teens who are under stress, or who have experienced a significant loss (i.e., facing the death of a parent or parents' divorce) are at greater risk for developing clinical depression (Ge et al., 2006).

Public policy and economic growth in China have created unique social phenomena with known effects on children's mental health. One child per family in China, as mandated by the 'one-child policy', is a risk factor for internalising disorders such as depression and anxiety (Meng et al., 2011). Left-behind children experience what is perhaps a unique form parental absence and separation spurred by economic exigencies in the midst of China's explosive economic growth. Being lack of parental care, left-behind children are easier to demonstrate maladaptive when facing life's negative events. Especially those who are the only child of their families, they bear higher expectations of life goals; once the setbacks take place in their lives, they are more prone to conduct, academic, and psychological problems (Wang and Guo, 2010).

In a recent study conducted in Anhui, Chongqing, and Guizhou provinces, Liu et al. found that left-behind children who were separated from their parents at a younger age had more symptoms of depression and anxiety and that these effects were especially pronounced for children separated from their mothers or both parents (Liu et al., 2009). Our study seeks to expand the scope of this study by examining some additional factors which have shown in other studies to moderate depression risk such as socioeconomic status and social support (Lazear et al., 2008; Ehring et al., 2011). In addition, we will compare the risk of depression between left-behind children and their aged-matched controls.

A study found that the overall prevalence of behavioural/emotional problems was 43.6% among left-behind children, and socioeconomic status was related to these problems among them (Zeng et al. 2009). Good social support in early adolescence may not only benefit mental health but also academic adjustment (Rueger et al., 2010). There was a good relation between social support and left-children's well-being (Hu et al., 2008). It could be hypothesised that left-behind children of low socioeconomic background or less social support have to cope with a number of deficiencies, barriers and psychosocial stressors which increase the risk for poor emotional and behavioural disturbances.

2. Methods

2.1. Subjects

In 2009, a two-stage cluster survey was conducted in Xiantao, a rural county in Hubei province, one of the most populated provinces in China. Hubei province accounts for a substantial proportion of migrant labour in China, and left-behind children are prevalent in Hubei (China People's Daily, 2004). Studies of this population may help to elucidate the unique features of left-behind children in China. Xiantao county covers a geographic area of 2538 km^2, includes 15 towns and has a population of 1,480,000 in 2009. Children were sampled from Xiantao county in grades four through six of primary school. Three towns were randomly selected. Then two primary schools were randomly selected from each town. Thus, six primary schools were selected.

All fourth through sixth graders were included in each school sample. Children who were orphans or from single-parent families were excluded. A child is considered 'left behind' if (1) he/she has a father and/or mother who had gone to a city for a job over the past 6 months; (2) he/she currently lives with a single parent, grandparents, relatives or other caretakers; (3) he/she is from a rural village. Left-behind children were further divided into the following subgroups: (1) those with a mother who has left the child to work in the city (hereafter, 'migrant mothers'); (2) those with a father who has left the child to work in the city (hereafter, 'migrant fathers'); (3) those with two parents who have left the child to work in the city (hereafter, 'migrant parents'). A child is considered a 'control' if (1) he/she has no history of being left behind; (2) he/she is living with both parents; and (3) he/she is from a rural village.

2.2. Procedures

This study was approved by the Human Research Ethics Committee, Zhongnan Hospital of Wuhan University. Students were recruited for the project with approval from school officials and their guardians. Two–four assistants helped the students answer the questionnaire in a classroom setting. For students in grade four, each question was read aloud to them by one assistant. Students in grades five and six were allowed to answer the questionnaire by themselves. Pilot testing indicated that students had no problem with the wording of the questions and the response format. To ensure careful response and a correct understanding of the questions, assistants walked around the classroom to help out those who were having difficulties. Students were told that there were no right or wrong answers and they could withdraw from the study at any time.

2.3. Measures

Demographic information included sex, age, grade, whether or not they were an only child and whether or not one or both parents had migrated to the city in the past six months. The questionnaire included scales to measure depression risk, socioeconomic status, social support and other areas of interest as described below. For the present study, only data related to the above-mentioned variables will be reported and analysed. The questionnaire was written in simplified Chinese. The various instruments used in the study were found to be highly reliable in pilot testing (reliability is based on Cronbach's alpha coefficient as a measure of internal consistency).

2.3.1. The children's depression inventory (CDI, simple Chinese version)

There are 27-item quantifying symptoms in CDI (Kovacs, 1992). We used a simplified Chinese version of CDI with high validity and reliability in the clinical research of Chinese children (Yu and Li, 2000; Zhang et al., 2007). For each item, a child must choose among three possible answers: 0 indicating the absence of symptoms, 1 indicating mild symptoms, and 2 indicating definite symptoms, keyed in the direction of increasing severity of depressive symptoms. The total score ranges from zero to 54. In the pilot testing, it was shown that children older than nine years of age could read, understand and answer all the CDI items without problems. The Cronbach's alpha coefficient measured in this study was 0.85.

2.3.2. Socioeconomic status (SES)

The Family Affluence Scale (FAS) is a valid measure of socioeconomic status, and is considered easy for children to answer (Boyce et al., 2006). The FAS includes items addressing family car ownership, having their own unshared rooms, the number of computers at home and the amount of time the children spent on vacation in the past 12 months (Giannakopoulos et al., 2009). The SES of the participating children's families was assessed using the revised version of the FAS.

SES of the participating children's families was evaluated by using the following information: first, possession of some equipment (family car, computer, air condition, icebox, washer, television, and so on); second, dwelling conditions; third, the amount of time the children spent on vacation in the past 12 months. The possession of some equipment was scored as three (car or computer), two (air condition or icebox), one (television or washer), and zero (none or only fan). The dwelling conditions were scored as three (luxurious housing), two (general two or three floors brick housing), one (one floor brick housing), and zero (mud housing or very simple brick housing). Time, the children spent on vacation in the past one year, was scored as three ($\geq$ two weeks), two (one–two weeks), one ($<$ one week), and zero (no). Scores for possession of equipment, dwelling condition and time spent on holiday were added. The total score ranged from zero to nine and were separated into three groups in the analysis (low (zero–three), middle (four–six) and high (seven–nine) SES). Based on the available literature on the effects of