



The effects of parental relationships, and gender and grade differences on depressive disorder in Chinese adolescents: the evidence from multiple cross-sectional surveys (1999–2016)

Limin Wang, et al. [full author details at the end of the article]

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Abstract

This study aims to investigate the impacts of parental relationships, gender, and grade differences on depressive disorder among Chinese adolescents over a time period of nearly 20 years. The first survey took place in 1999 and involved 852 students; subsequent follow-up surveys took place in 2006, 2009 and 2016, with 3345 students involved in total. Depressive disorder was measured by *SCL-90-R (Chinese version)*. The surveys also collected social-demographic information about the respondents. Three indicators of parental relationships were examined—parental quarrels, parental disharmony and parental divorce. The results show that gender was significantly associated with adolescents' depressive disorder and that there was a higher prevalence of depressive disorder among senior middle school students than among junior middle school students, except in 1999. Troubled parental relationships were associated with high risks of depressive disorder. Coefficients and 95% CI were adjusted for the survey years (1999, 2006, 2009, 2016), school grades (junior or senior middle school students), gender (girls/boys), parental quarrels (yes/no), parental disharmony (yes/no), and parental divorce (yes/no). Logistic regression indicated that parental divorce and gender were the two strongest predictors of the presence of depressive disorder. In summary, there was a higher prevalence of depressive disorder among girls and senior middle school students. Adolescents are vulnerable to depressive disorder in cases of parental divorce. Therefore, good parental relationships may be considered an important and necessary factor that affects the susceptibility of Chinese adolescents to depressive disorder.

Keywords Depressive disorder · Parental relationships · Gender difference · Chinese adolescents

Limin Wang and Yafeng Zhang contributed to the work equally and should be regarded as co-first authors.

1 Introduction

Depression is a common mental and psychological illness worldwide, one that often begins in adolescence (Demir et al. 2011; Gabbay et al. 2009; Zhou et al. 2018). Depression is a risk factor for a range of diseases and poor health outcomes (Malhotra et al. 2010). Different from other emotional reactions, students who have been depressed for a long time suffer great distress that seriously affects their lives and health, and may even lead to suicide (Subin et al. 2015). According to the World Health Organization, depression is the third leading cause of adolescent death (WHO, 2012). Furthermore, depression is the leading cause of disability worldwide and is a major contributor to the overall global burden of disease (Zheng et al. 2016). Adolescent depression is associated with a range of adverse later outcomes including suicidality, problems in social functioning, and poor physical and mental health (Anita et al. 2012; Maughan et al. 2013). One study found that the prevalence of depressive symptoms among adolescents is 16.7% in China (Zhou et al. 2018). Estimates of 1-year prevalence rates for unipolar depression in preadolescents range from 4 to 5%, while the cumulative probability of depression by the end of adolescence appears to be as high as 20% (Costello et al. 2006; Magklara et al. 2015). A recent study suggests that the total prevalence of depressive symptoms among Chinese left-behind children is 24.8% (Wang et al. 2015). However, most studies are based on data from regional surveys using different measures of depressive symptoms, and this makes it impossible to reach consistent conclusions (Pan et al. 2008). Regardless, depression disorders in puberty have become an important issue of concern worldwide. The subscale of *Symptom Checklist-90-Revision (SCL-90-R)* is a self-report scale to measure depressive disorders of adolescents. Unlike other scales, *SCL-90-R* only assesses the possibility of adolescents having a psychological disorder. The present investigation began in 1999; the scale was widely used to assess Chinese students at that time and was verified with good validity and reliability. This study investigates changes in the prevalence of depressive disorder among adolescents in a district of Harbin city over 20 years.

Another aim of the present study is to investigate gender and grade differences for adolescent depressive disorder in the region, using longitudinal data covering nearly 20 years. Individuals with high levels of depression often show low moods, loss of interest and pleasure, and reduced energy, as well as other negative symptoms such as anxiety, and sleep and appetite disorders (Derogatis et al. 1973). Research found that the lack of an intimate relationship is a risk factor for depression in the presence of vulnerability, as shown by low self-esteem of many adolescents (Aro 1994). The strongest risk factors for depression in adolescents are a family history of depression and exposure to psychosocial stress (Anita et al. 2012). Accordingly, depressive disorder is a mental illness commonly seen in puberty. Three studies from Greece documented an increasing trend in the prevalence of depression from 3.3% in 2008, to 6.8% in 2009 and 8.2% in 2011 (Skapinakis et al. 2013). Young age is identified as a relative factors for major depression in the Greek population (Economou et al. 2013). Furthermore,

prevalence rates for depressive disorders increase significantly in adolescents, and gender differences emerge as well (Hankin and Abramson 1999; Ge et al. 2001). The emergence of a gender difference (more girls depressed than boys) with respect to depressed moods and depressive disorders becomes apparent after the age of 13 years or during midpuberty (Hankin and Abramson 1999). Since 1999, a series of policies related to the mental health of middle school students have been issued in China, indicating that the physical and psychological health of students have become matters of wide public concern. Consequently, there is a need to evaluate the development of policies to ensure they help to prevent depression disorder in an effective, timely manner.

Besides the correlation of age and gender factors with depressive disorder, some family factors are also important. A recent study revealed that family socioeconomic status (SES) and psychological attributes related to vulnerability to life events and coping skills were associated with depressive symptoms (Piccinelli and Wilkinson 2000; Zhou et al. 2018). In addition, children exposed to violence at home (witnessing violence against the mother and/or being the victims of parental violence themselves) are more likely to suffer from depression and affective disorders (Amato 2010, 2001; Izaguirre and Calvete 2018). Conversely, parental involvement and warmth have the potential to reduce the onset of depression (Kuo et al. 2019; Quach et al. 2015). Family interventions are a developmentally appropriate approach for preventing depression among adolescents (Kuo et al. 2019). Although previous studies have discussed the association of parent–child relationships with depressive disorders in adolescents, studies that examine this from the perspective of different culture backgrounds are few, and longitudinal tracking studies are relatively scarce, a scarcity that is exacerbated by China’s divorce rate in the twenty first century.

2 Data source and method

2.1 Survey design

This is a multiple cross-sectional study. The current study is based on survey data from the years 1999, 2006, 2009 and 2016. According to the criteria of sampling, 852 students participated in the survey in 1999, 722 students in 2006, 789 students in 2009, and 982 students in 2016 (see Table 1). The baseline survey was conducted in 1999 because a series of programmatic document related to school mental-health education was issued by the ministry of education, which means society began to pay more attention to the mental health of adolescents. Due to the reform of secondary education and the lack of research funds, the second data survey was conducted in 2006. A new set of cross-sectional data was collected in 2009 for a 10-year cross-sectional comparison with 1999. Similarly, the 2016 survey was a 10-year comparison based on 2006. The overall response rate was 97.21% among the adolescents who were present in the classrooms during the survey. All 3345 participants (aged 12–20 years) were middle school students (52.2% girls; 47.8% boys). The 3345 middle school students were required to provide demographic information including evaluations of parental relationships and to complete a self-report questionnaire:

Table 1 Demographic characteristics of subjects in different survey years

Factors	1999 (N = 852)	2006 (N = 722)	2009 (N = 789)	2016 (N = 982)
<i>Gender</i>				
Boys	452 (53.1%)	332 (54.0%)	323 (40.9%)	492 (50.1%)
Girls	400 (46.9%)	390 (46.0%)	466 (59.1%)	490 (49.9%)
<i>Grade</i>				
Junior	388 (45.5%)	340 (47.1%)	358 (45.4%)	446 (45.4%)
Senior	464 (54.5%)	382 (52.9%)	431 (54.6%)	536 (54.6%)
DS	1.79 ± 0.64	1.88 ± 0.68	1.83 ± 0.67	1.73 ± 0.72***
PD	54 (6.3%)	57 (7.9%)	45 (5.7%)	79 (8.0%)
Quarrels	98 (11.5%)	47 (6.5%)	86 (10.9%)	92 (9.4%)
No quarrels	754 (88.5%)	675 (93.5%)	703 (89.1%)	890 (90.6%)
Harmony	733 (86.0%)	621 (86.0%)	680 (86.2%)	863 (87.9%)
Disharmony	119 (14.0%)	101 (14.0%)	109 (13.8%)	119 (12.1%)
Divorce	33 (3.9%)	44 (6.1%)	39 (4.9%)	108 (10.9%)
No divorce	819 (96.1%)	678 (93.9%)	750 (95.1%)	874 (89.1%)

Column categorical data present shown as n (%); continuous data shown as mean ± SD. DS shown as depression score. PD shown as prevalence rates of depressive disorder. Pearson Chi square was determined from categorical data. Wilcoxon rank sum test for continuous variables

*p < 0.05. **p < 0.01. ***p < 0.001 statistical significance, comparison between four different survey years

the Chinese Symptom Checklist-90-Revision (SCL-90-R). We adopted the field survey method to conduct standardized, unified questionnaire surveys on the selected research objects. Four schools were selected in a district of Harbin city, China, using a multistage sampling method (stratified random cluster) in which each school was considered as a stratum and each grade as a cluster. In the first stage, two of the four schools involved were key schools and two were common schools. In the second stage, two classes were selected as units from each grade (grades 7, 8, 10 and 11) in the selected school and the respondents were selected. Grade 9 students were excluded because they were preparing for entrance examinations. In the last stage, those respondents who refused to participate in the questionnaire survey and those who were absent when the questionnaire was administered were excluded.

2.2 Survey procedure

With the assistance of head teachers, information was collected from the adolescents who completed an anonymous, structured, self-report questionnaire in the classroom. When the questionnaire was completed, it was collected on-site. We required qualified interviewees to cooperate and answer the questionnaire truthfully to ensure authenticity and effectiveness. The data collection was conducted by professionally trained graduate students. The interviewers were as familiar with the questionnaire as possible and had mastered some interview and communication techniques to allow them to effectively answer the questions of the adolescents. Researchers explained to the participants the

purpose of the investigation and assured participants that the information they provided was confidential, and that the interviews took an average of 40 min. We sought permission from each school and the participants' informed verbal consent. Questionnaires, procedures, consent forms, and instructions were reviewed by the Ethics Committee of the Harbin Medical University.

2.3 Measurement

The 13 items on the depression subscale derived from the *Symptom Checklist-90-Revision (SCL-90-R)* were used to assess adolescent depressive disorders (Derogatis et al. 1973). The depression subscale evaluates depressed emotions and moods during the 2 weeks prior to taking the survey as representative symptoms. The subscale rates on a 5-point Likert-type scale (1 = never; 5 = very frequently), with higher scores indicating higher levels of depressive disorder. The depression subscale consisted of 13 questions. Participants were invited to rate all depression items. The average score of depressive disorder was produced by dividing the total score of each participant by 13. Of note, the scale assesses the presence and severity of depressive disorder, with more than 3 points that can serve as cutoff points for defining the prevalence of depressive disorder (Zhang 2005). In 1999, Chinese scholars tested the reliability and validity of the *SCL-90-R* and established norms for middle school students in Beijing, demonstrating that *SCL-90-R* is a measurement tool suitable for middle school students (Jisheng et al. 1999). The standard *Center for Epidemiological Studies Depression Scale (CES-D)* was used to test the criterion-related validation of the depression subscale in our study. It was found that there was a significant positive correlation between the two scales (Spearman's $\rho=0.72$). The depression subscale of *SCL-90-R* was found to have good internal consistency and reliability (Cronbach's $\alpha=0.97$). The reliability of *SCL-90-R* in the surveys at four-time points (1999, 2006, 2009, and 2016) was 0.95, 0.96, 0.96 and 0.96, respectively. Alpha coefficients for depression sub-scales at four-time points were found to be 0.89, 0.91, 0.93 and 0.91, respectively.

Parental relationship factors consist of parental quarrels, parental disharmony and parental divorce, and are measured based on the adolescent's subjective evaluation. Answers self-reported by adolescents to these questions "Do your parents often quarrels with each other?" (response is "yes" or "no"), "Is there harmony between your parents?" (response is "yes" or "no"), and "Are your parents divorced?" (response is "yes" or "no") are recorded. It's worth noting that parental quarrels refers to the frequent verbal arguments and excessive verbal behaviors between parents, while parental disharmony means that parents do not communicate verbally and feel indifferent to each other. In addition, other demographic information such as gender, grade and age of the adolescents are also obtained.

2.4 Statistical analysis

Socio-demographic characteristics are determined through the use of descriptive statistical analysis. The prevalence of depressive disorders in different survey years, and grades, as well as prevalence based on gender and prevalence connected

to parental relationships are calculated with cross-tabulations. Odds ratios and 95% confidence intervals are calculated to estimate the effect of different parental relationships on depression disorder. Then the normality test and rank-sum test are used to determine the significance of differences between different survey years. Continuous variables were evaluated using the Wilcoxon rank sum test, and categorical variables were assessed with the Chi squared test. Binary logistic regression was performed to determine the independent association of parental quarrels, parental disharmony, and parental divorce with depressive disorder. The fixed model used indicator variables including survey years, gender, and grade as control variables. Independent variables and control variables were then forced into logistic regression analysis to adjust for the association of depressive disorder. SPSS software (version 21.0) was used for statistical analyses. A *p* value of less than 0.05 indicates statistical significance.

3 Results

Table 1 displays the demographic variables, depressive scores, the prevalence of depressive disorder and adolescents' parental relationships (parental quarrels, disharmony and divorce) for the four surveys. A total of 3345 adolescents participated, with girls accounting for 52.2% and boys for 47.8%. The mean age of the adolescents was approximately 15 years old. As for the individual surveys, significant difference in depressive score were observed for the four survey years (in 1999, 1.79 ± 0.64 ; in 2006, 1.88 ± 0.68 ; in 2009, 1.83 ± 0.67 ; in 2016, 1.73 ± 0.72 , $P < 0.001$). The prevalence of depressive disorder fluctuated from 5.7% to 8.0% over the survey years. Parental relationships consist of parental quarrels, parental disharmony and parental divorce. In terms of parental quarrels, the prevalences were 11.5% in 1999, 6.5% in 2006, 10.9% in 2009 and 9.4% in 2016. The average for parental disharmony in the study sample was greater than 10%. Furthermore, the percentage of parental divorce reached 10.9% in 2016 and this was significantly higher than in the other survey years.

Regarding gender and grade, the percentage of girls with depressive disorder was significantly higher than the percentage of boys. And except for the baseline survey, more senior middle school students had depressive disorders than junior middle school students (Table 2). Prevalence and odds ratio of depressive disorders related to parental relationships was also reported (Table 3). Of particular note is the fact that participants were at higher risk of depressive disorder for parental quarrels and disharmony in 2009 [OR: 2.89 (1.40–5.93); OR: 3.09 (1.58–6.01)], and for parental divorce in 2016 [OR: 3.14 (1.81–5.46)].

Binary logistic regression was performed to determine the relationship between gender, grades, survey years, parental quarrels, parental disharmony, and parental divorce with depressive disorder (Table 4). The results indicate that parental divorce and gender were the two strongest predictors of the presence of depressive disorder. [Parental divorce (odds ratio, 2.18; 95% confidence interval, 1.43–3.30; $P < 0.001$), gender (odds ratio, 0.67; 95% confidence interval, 0.51–0.88; $P < 0.01$) (Table 4).

Table 2 The prevalence of depressive disorder depression among different subgroups by grade and gender

Factor	1999	2006	2009	2016
<i>Gender^a</i>				
Boys	23 (5.1%)	19 (5.7%)	10 (3.1%)	38 (7.7%)**
Girls	31 (7.8%)	38 (9.7%)	35 (7.5%)	41 (8.4%)
<i>Grade^b</i>				
Junior	30 (7.7%)	24 (7.1%)	17 (4.7%)	28 (6.3%)
Senior	24 (5.2%)	33 (8.6%)	28 (6.5%)	51 (9.5%)

Categorical data shown as n (%). Pearson Chi squared was determined from categorical data

Gender^a compared boys with girls. Grade^b compared junior with senior

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$ statistical significance

4 Discussion

In terms of the depressive scores, although there are statistically significant differences between the survey years, a certain relatively low level of depression can be found among adolescents in all of the survey years. According to the *SCL-90-R*, overall for all of the four surveys, 5.7–8.0% of adolescents met the criteria for depressive disorders. The results also suggest that senior students and girls have a higher risk of having a depressive disorder. Parental relationships such as parental quarrels, parental disharmony and parental divorce are also associated with a higher risk of having depressive disorder. Among these, gender and parental divorce were identified as independent factors related to depressive outcomes, after controlling for demographic variables and other parental relationships.

Firstly, the results of this study show that during a time period of nearly 20 years, depressive disorders affected some adolescents in a district of Harbin city. Although some reports claim that the prevalence of depressive disorders has increased over time, in fact we found that it remained relatively stable over the entire time period. Moreover, the prevalence of depressive disorder found in this study is less than 10% overall. This is somewhat higher than the prevalence of 5.67% found in Magklara's study, but much lower than the prevalence of 15.3% shown in He's study and 24.8% shown in Wang's study (He et al. 2012; Magklara et al. 2015; Wang et al. 2015). The difference of prevalence found in the present study may be a result of this study using different indicators for depressive disorder. It is worth noting that *SCL-90-R* is one of the most widely used measures of psychological distress in both clinical patients and community non-patients (Róbert et al. 2014). Moreover, *SCL-90-R* has been widely used to assess Chinese students and verified with good validity and reliability (Xin et al. 2012). Note also that the education department in the Harbin district where we conducted our study was not playing a significant role in adolescent mental health education, and this may have influenced the number of adolescents we found affected by depressive disorder. Although a series of policy documents about strengthening mental health education for students have been promulgated by the Ministry of Education, these policies have not produced satisfactory effects.

Table 3 Prevalence and odds ratio of depressive disorder by parental relationships (%)

Survey years	Factor	No depressive disorder	Depressive disorder	OR	95% CI	
					Lower	Upper
1999	No parental quarrels	709 (94.0)	45 (6.0)	1.59	0.75	3.37
	Parental quarrels	89 (90.8)	9 (9.2)			
	Parental harmony	690 (94.1)	43 (5.9)	1.63	0.82	3.27
	Parental disharmony	108 (90.8)	11 (9.2)			
	No parental divorce	767 (93.7)	52 (6.3)	0.95	0.22	4.09
	Parental divorce	31 (93.9)	2 (6.1)			
2006	No parental quarrels	623 (92.3)	52 (7.7)	1.43	0.54	3.76
	Parental quarrels	42 (89.4)	5 (10.6)			
	Parental harmony	572 (92.1)	49 (7.9)	1.00	0.46	2.19
	Parental disharmony	93 (92.1)	8 (7.9)			
	No parental divorce	625 (92.2)	53 (7.8)	1.18	0.41	3.42
	Parental divorce	40 (90.9)	4 (9.1)			
2009	No parental quarrels	669 (95.2)	34 (4.8)	2.89	1.40	5.93
	Parental quarrels	75 (87.2)	11 (12.8)			
	Parental harmony	649 (95.4)	31 (4.6)	3.09	1.58	6.01
	Parental disharmony	95 (87.2)	14 (12.8)			
	No parental divorce	710 (94.7)	40 (5.3)	2.61	0.97	7.03
	Parental divorce	34 (87.2)	5 (12.8)			
2016	No parental quarrels	817 (91.8)	73 (8.2)	0.78	0.33	1.85
	Parental quarrels	86 (93.5)	6 (6.5)			
	Parental harmony	794 (92.0)	69 (8.0)	1.06	0.53	2.11
	Parental disharmony	109 (91.6)	10 (8.4)			
	No parental divorce	815 (93.2)	59 (6.8)**	3.14	1.81	5.46
	Parental divorce	88 (81.5)	20 (18.5)			

Parental quarrels refer to an adolescent's subjective assessment of arguments at home. Parental disharmony means frequent tension in the relationship between parents. Parental divorce refers to the legal dissolution of the marriage between parents

OR odds ratio, CI confidence interval

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$ statistical significance

Table 4 Binary logistic regression analysis of factors related to depressive disorder

Factor	OR	95% CI		P value
		Lower	Upper	
Survey years	1.03	0.92	1.16	0.600
Grade	1.20	0.92	1.57	0.187
Parental quarrels	1.21	0.73	1.98	0.462
Parental disharmony	1.21	0.78	1.87	0.400
Parental divorce	2.18	1.43	3.30	0.000
Gender	0.67	0.51	0.88	0.004

OR odds ratio, CI confidence interval

Therefore, the policies set out in these documents need more effective implementation, especially with respect to the occurrence of depressive disorders among adolescents.

Secondly, the result suggest that prevalence of depressive disorder among senior students is higher than among junior students, except for the study year 1999. This may be because the division between primary school and junior middle school years was at a different place at that time. However, studies have shown differences in the prevalence of depression among different age groups, and it has been determined that adolescents have a higher rate of depression than preadolescents (Wang et al. 2015; Gau et al. 2005). Indeed, senior students face more academic pressure and burdens, and the pressures on young people in general to succeed are considerable (Hesketh and Ding 2005). Besides, as young people mature and undergo hormonal changes and emotional and cognitive development, senior students seem to encounter more serious psychological challenges and interpersonal conflicts (Aro 1994). Adolescence is a critical life stage, and problems like depression that occur during adolescence can persist into adulthood (Wilcox and Anthony 2004). Accordingly, it is necessary to pay attention to the mental health of teenagers and help them cope with academic pressure and resolve interpersonal conflicts in ways that are effective responses to depressive disorders during puberty.

Thirdly, the findings of earlier studies have shown that girls are generally more prone to depressive disorder than boys (Kendler and Gardner 2014, Parker and Brotchie 2010). Higher rates of depression in females are first detected at mid-puberty and adult women continue into adult life, while there is a preponderance of male depression during early adolescence (Piccinelli and Wilkinson 2000). The results of this study reveal that gender was found to be significantly associated with depressive disorder, and are consistent with Sloan's results (Sloan and Sandt 2001). The interaction between psychosocial factors and physiological changes associated with adolescence may explain why there is more depressive disorder among girls than boys (Lewis et al. 2015). Parker also found that when young girls become depressed they tend to become quiet and keep to themselves, while boys are more likely to act out with anger and irritability, thus artificially inflating the rate of observed depression in boys (Parker and Brotchie 2010). Additionally, it is possible that girls have less resilience than boys or that their coping strategies are less effective and more dysfunctional than those of boys (Aro 1994). Consequently, interventions to prevent or treat adolescent depressive disorders should pay more attention to girls, especially given the nature of Chinese culture.

Our study shows that parental quarrels, disharmony and divorce are relative factors for depressive disorder. Children who have good relationships with their families are less likely to be depressed (McKinney et al. 2010). Some studies have found that the establishment and maintenance of self-esteem and self-efficacy was of central concern in depression research (Aro 1994). Garmezy concluded that family cohesion and an absence of discord were variables that operated as protective factors supporting adolescent stress resistance (Garmezy 1985). The family environment is crucial to the formation of positive mental health during puberty. Adolescents who living in an atmosphere of parental quarrels and disharmony are likely to develop a negative attitude towards interpersonal communication and

form sensitivity and inferiority character traits. Support from parents also plays an important role in the ability of adolescents to overcome depressive disorders. Because parental relationships are associated with the development of depressive disorder in adolescents, preventative measures and interventions in support of positive family relationships are vital to reducing the occurrence of depressive disorder.

Finally, parental divorce is a factor that also affects depressive disorders. Brown and his colleagues have shown that lack of care is a key vulnerability factor contributing to depression (Brown et al. 1986). Di found that mother–child interaction can effectively alleviate the connections between parental divorce and depressive symptoms (Di et al. 2015). Parental divorce can also lead to loss of interest in learning, feelings of inferiority, depression, and even extreme behaviors like attempted suicide or suicide (Lizardi and Rgkeys 2009). On the one hand, parental divorce can be very traumatic for adolescent children, not only making them feel ashamed with their peers, but also inferior. On the other hand, adolescence is a period of psychological rebellion for young people, and parental divorce may limit the involvement parents have in their children’s education, and this may result in psychological distortions on the part of the children. Reducing the occurrence of depressive disorder among adolescents will therefore need to consider measures to enhance parental relationships.

In conclusion, the different prevalence of depressive disorders among adolescents of different genders and grades can help to identify populations that could benefit from interventions. Parental relationships, especially parental divorce, are key factors contributing to the occurrence of depressive disorders among adolescents. Measures or interventions that can prevent or limit problems in parent–child relationships can help to reduce the occurrence of depressive disorders.

This study has some limitations. Firstly, the study used multiple cross-sections, precluding any causal interpretations. Secondly, the four cross-sectional surveys took at internals over a 20 year period, and we included the survey years as covariant into the model, but depressive disorders may be disturbed by social development. Thirdly, using the self-reports of adolescent respondents to describe parental relationships rather than direct interviews with parents may have resulted in some under-reporting of parental relationship issues or a failure to capture the wide range of parental relationship variations. Finally, as we noted earlier in this paper, *SCL-90-R* is only suited to assess psychopathological symptomatology during adolescence given its acceptable psychometric properties.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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Limin Wang PhD, is a professor in the Department of Health Education at Harbin Medical University. She mainly engaged in health education, medical psychology teaching and research work.



Yafeng Zhang MS, Department of Health Education, School of Public Health, Harbin Medical University. His research interests are focused on the impact of parental rearing on adolescent mental health, especially depression, interpersonal sensitivity, anxiety and obsessive-compulsive disorder.



Hui Yin PhD, is an adjunct faculty of the Department of Health Education, Harbin Medical University. She teaches courses in Health pedagogy and Sociological outline. Her research interests include chronic health management and students' mental problems.



Zuoming Zhang MS, is an adjunct instructor in the Department of Health Education, Harbin Medical University. His research interests include epidemiological investigations of health literacy and teaching of health education.



Yuchun Tao PhD, Department of Health Education, Harbin Medical University. She studied the group training of Internet addiction adolescents' family mindfulness.



Ye Xu MS, Department of Psychiatric, the First Clinical Medical College of Harbin Medical University. He specializes in diagnosing childhood and adolescent mental illnesses such as depression and bipolar disorder.



Lu Chen MS, Department of Health Education, Harbin Medical University. She explored the mediating effects of neurotic personality between parental rearing patterns and depressive symptom in middle-school students.



Yongqing Feng MS, Department of Health Education, Harbin Medical University. Her research program has focused on the effects of tobacco control intervention evaluation and adolescent mental health issues.



Yixin Liu MS, Department of Health Education, Harbin Medical University. Her research interests include adolescent compulsive symptoms and physical labor.

Affiliations

Limin Wang¹ · Yafeng Zhang¹ · Hui Yin¹ · Zuoming Zhang¹ · Yuchun Tao¹ ·
Ye Xu² · Lu Chen¹ · Yongqing Feng¹ · Yixin Liu¹

✉ Limin Wang
wanglimin2008@163.com

Yafeng Zhang
hydzhangyafeng@163.com

Hui Yin
enxuemama@163.com

Zuoming Zhang
zhang_zuoming@126.com

Yuchun Tao
15045117803@163.com

Ye Xu
xuye1966@163.com

Lu Chen
779670827@qq.com

Yongqing Feng
740376974@qq.com

Yixin Liu
liuyixin1063@163.com

¹ Department of Health Education, School of Public Health, Harbin Medical University, No. 157 Baojian Road, Harbin 150081, China

² Department of Psychiatric, The First Clinical Medical College of Harbin Medical University, No. 23 Post Street, Harbin 150001, China