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MENTAL HEALTH PROBLEMS AND COPING STYLES OF URBAN AND RURAL HIGH SCHOOL STUDENTS IN CHINA

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Few studies have compared urban and rural adolescents' mental health problems, especially in developing countries. The purpose of this study was to investigate the mental health problems and coping styles of adolescents in urban and rural areas in China. A total of 927 urban and rural high school students in Shandong Province of China were recruited for the study. The results of the study are as follows: (a) students in rural low-socioeconomic status (SES) areas, especially females, had more mental health problems than did those in rural high-SES and urban areas; (b) rural low-SES students were more likely to cope by venting and fantasizing than did the other two groups; (c) regardless of residence and SES, mental health problems were inversely related to the use of problem solving as a coping strategy, but positively related to fantasizing; and (d) urban-rural differences in mental health problems were not entirely accounted for by group differences in coping strategies. © 2011 Wiley Periodicals, Inc.

There is increasing evidence that today's youth and adolescents around the world are experiencing high rates of psychiatric and mental health problems. For example,

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according to the Substance Abuse and Mental Health Services Administration (SAMHSA) of the U.S. Department of Health and Human Services, one in five American children and adolescents have a diagnosable mental illness (SAMHSA's National Mental Health Information Center, 2004). The National Youth Risk Behavior Survey indicate that 9% of teens had attempted suicide, 29% had felt sad or hopeless, 45% had used alcohol in the last month, and 22% had used marijuana (Centers for Disease Control and Prevention, 2004). Based on a recent report (Benjet et al., 2009), 1 in every 11 adolescents in Mexico City has suffered a serious mental disorder, and one in five has suffered a disorder of moderate severity. Childhood mental health problems are also prevalent among Australian children (14%–20%; Davies, Davis, Cook, & Wa, 2008). Similarly, the incidence rate of mental health problems is 10% to 30% among adolescents in China (Yang, 2007; Yu & Fang, 2005).

Although research on mental health issues among adolescents and young adults has increased in the past several decades, most studies have used samples from urban areas. Research on adolescents in rural areas is very limited. Thus far, only a few researchers have studied rural adolescents' mental health problems. Typically, they have focused on issues such as barriers toward seeking mental health help, psychiatric disorder prevalence, and mental health service use in rural communities (Farmer, Burns, Angold, & Costello, 1997; Hoyt, Conger, Valde, & Weihs, 1997; McCabe & Macnee, 2002; Rueter, Holm, Burzette, Kim, & Conger, 2007). Despite significant urban-rural differences in life styles and access to mental health services, previous research has found that urban and rural adolescents showed similar levels of mental health problems. For example, Rueter et al. studied the rates of psychiatric disorders among young adults living in rural Midwest areas and found that these adolescents and young adults demonstrated substantial rates of psychiatric disorder. The rates, however, are comparable to those found in urban areas. This lack of urban-rural differences in prevalence of mental health problems may have contributed to a lack of research on rural adolescents. Unfortunately, it is not known whether a lack of differences in prevalence means that rural and urban adolescents have the same causes of mental health problems and/or the same strategies in coping with them. Nor is it known whether urban-rural differences are also nonsignificant in other countries.

Similar to the situation in the United States, research on adolescents in rural areas in other countries is also limited. Furthermore, because countries differ in their economic development and cultural orientations, urban-rural differences in the United States (or the lack thereof) may not generalize to other countries. China, for example, is a rapidly developing society, where the speed of development varies greatly between urban and rural areas and within rural areas. Recent reports (Liu, 2005) showed that compared with urban residents, rural residents had lower living standards, less health insurance, and poorer basic public services such as basic education, public health, social security, and infrastructure. The urban and rural areas also differ in traditions, attitudes, customs and other conditions. For example, Wang (2001) reported that interpersonal relationships among rural residents were simpler, closer, and more emotion-laden than those among urban residents. These differences might lead to different mental health outcomes. Research on adolescents' mental health in urban and rural China is useful for not only identifying their mental health problems but also helping us understand macro-level influences on mental health.

In a search of the research literature in both Chinese and English, we found only seven studies pertaining to the mental health of rural adolescents in China. Results were mixed. In a study of a sample in Hunan Province, Su, Luo, Yang, Wan, and Li

(1993) reported that the prevalence of mental disorders did not differ significantly between urban and rural areas. In a later study by this group, the authors reported that rural students showed more developmental disorders than did urban students, but that these two groups did not differ in behavioral, emotional, and somatoform disorders (Yang, Li, Wan, Su, & Luo, 1997). In a brief report, Wang (2002) revealed that based on a measure of anxiety, rural students in Henan Province showed a higher level of anxiety than urban students. Two other studies, one (Hu, Wang, & Li, 2005) on general mental health and the other (Liu, Tein, Sandler, & Zhao, 2005; Liu, Tein, Zhao, & Sandier, 2005) on suicidal thoughts and ideation also reported high levels of mental health problems among rural students, but neither study included an urban comparison sample.

In contrast to the above-mentioned studies that tended to show more mental health problems among rural students than among their urban counterparts, several studies showed the opposite pattern. In a survey of quality of life among high school students in several small cities and townships versus their neighboring countryside villages in Shangdong Province, Li, Zhang, and Qian (2004) found that rural students reported fewer mental health problems, and their life satisfaction was higher than those of their counterparts in the city and townships. Similarly, in a study of 620 primary and secondary school students in 20 schools spread out across small cities, townships, and villages in five provinces, Liu and Li (2005) reported that students from the villages had lower scores on a measure of mental health problems than did those in the small cities and townships.

Several possible reasons may account for the mixed findings regarding the mental health problems of Chinese rural vis-à-vis urban students. The most important of these reasons may be a lack of specificity regarding the nature of urban versus rural samples. Some studies (e.g., Su et al., 1993; Yang et al., 1997; Wang, 2002) contrasted major cities with rural areas, whereas others (e.g. Liu & Li, 2005) compared small cities or townships with villages. Another reason is that levels of economic development of different areas were not considered, which may have confounded the findings of some of the studies. Other reasons for the mixed results include the use of different measures in different studies. Some studies (e.g., Li et al., 2004; Liu, Tein, Sandler, & Zhao, 2005; Liu, Tein, Zhao, & Sandier, 2005; Wang, 2002) used measures that tapped only one aspect of mental health problems, whereas others (Su et al.) used broader measures.

The present study sought to overcome some of the limitations in previous research and to address questions regarding mental health problems of rural high school students in China. First, previous research comparing urban and rural adolescents typically lumped all rural students together as one group without considering the uneven economic development among rural areas. In the present study, we purposely selected two groups of rural students (one from high- socioeconomic status (SES) areas and the other from low SES areas) and compared them with an urban group. These three groups were from the same region within northern China's Shandong province. By differentiating high-SES and low-SES rural regions, this study can shed light on the relations between economic development and rural adolescents' mental health.

Second, coping strategies play a major role in adolescents' mental health (see Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001, for a review). Researchers have described various forms and types of coping strategies. Lazarus and Folkman (1984) made the most classic distinction between problem-focused coping (taking direct actions to change a stressor) and emotion-focused coping (taking actions

to control one's emotional response to a stressor). In their review of studies on coping styles and internalizing symptoms among adolescents, Compas, Connor-Smith, Osowiecki, and Welch (1997) found that problem-focused coping was generally related to fewer internalizing symptoms.

Previous studies on coping strategies were mostly performed on samples largely comprising White American urban participants. Little is known about whether rural and urban adolescents and adolescents in other countries use the same or different coping strategies. To the best of our knowledge, there exists only one study of coping strategies used by urban Chinese adolescents. In a study of 1,353 urban middle and high school students from eastern China, Liu and colleagues (2004) studied the relations between coping strategies and behavioral/emotional problems. They found that active coping (e.g., "trying to improve the situation") was related to fewer internalizing symptoms, whereas passive coping (e.g., "keeping the feelings to oneself") was related to more internalizing problems.

The present study sought to extend our knowledge of adolescent mental health problems in rural and urban China in three ways: by introducing SES as a further differentiating factor within the rural sector; by documenting the nature of coping strategies employed by youth; and by examining the relations between coping strategies and mental health through correlational and regression analyses.

The following three hypotheses were tested:

1. Rural school students would have more mental health problems than urban students. Low-SES rural students would have more mental health problems than both high-SES rural students and urban students.
2. Active coping (e.g., problem solving, help seeking, and emotional expression) would be inversely related to mental health problems. Passive coping (avoidance, fantasizing, and tolerance) would be positively related to mental health problems.
3. Urban-rural and SES-related differences in mental health problems would be accounted for by demographic variables and coping strategies.

METHODS

Participants

A total of 927 high school students (10th and 11th graders, 54% male) from six high schools in Shandong Province in northern China participated in this study. Five of the schools were located in rural areas. To examine the effects of rural economic development, two of the schools ($n = 294$) were selected from areas with a low level of economic development and three from areas with a high level of economic development ($n = 444$). The criterion used to determine an area's level of economic development was \$3,500 per capita GDP, which is the standard criterion used by the government and researchers in China (Chenery, 1989; Fan, 2008). Specifically, for the high-SES rural schools, the per capita gross domestic product (GDP) of the areas around the schools was above \$3,500 (ranging from Chinese yuan [CNY] 26,600 to CNY 41,260). For the low-SES rural schools, the per capita GDP was below \$3,500 (ranging from CNY 11,611 to CNY 12,678). A comparison group of urban students ($n = 189$) was recruited

from an above-average SES school in the urban area (CNY 31,410). This project was approved by the Research Ethics Committee of the Medical School of Shandong University and by the authorities of the schools from which the data were collected. Students gave informed consent and their parents gave passive consent.

Instruments

Students responded to a questionnaire that included demographic information (age, gender, parents' educational attainment, parents' occupational status, and perceived financial status), the Mental Health Inventory for Adolescents (middle/high school; MHI-A; Wang, Li, & He, 1997), and Coping Style Scale of Middle School Students (CSSMSS; Huang, Yu, Zheng, Yang, & Wang, 2000). Parents' educational levels were classified into four categories: (a) primary education or less, (b) completion of middle school, (c) completion of high school, and (d) college or university education. We used the higher of the two parents' education level to index parental educational attainment. Parents' occupational status was classified into three groups: farmers, factory or service industry workers, and professionals or government officials. Finally, students were asked to report the perceived financial status of their family on a 5-point scale, ranging from 1 (*very rich*) to 5 (*very poor*).

MHI-A. The MHI-A (Wang, Li, & He, 1997) is a 60-item self-report scale that was designed to assess general mental health in adolescents and has been widely used in China (Gan, Bi, & Yuan, 2007). The MHI-A was modeled after the Symptom Checklist-90-R (Derogatis, & Savitz, 2000). The scale includes ten six-item subscales that cover major mental health symptoms and problems in adolescents (the main subscales reflect emotional symptoms/problems): (a) obsessive-compulsive symptoms (e.g., "I always check my homework again and again"); (b) paranoid symptoms (e.g., "I often hear others say bad things about me behind my back"); (c) hostility (e.g., "I think most people can't be trusted"); (d) sensitivity to inter-personal relationships (e.g., "When others watch me or talk about me, I feel uncomfortable"); (e) depressive symptoms (e.g., "I feel hopeless about the future"); (f) anxiety (e.g., "I feel upset"); (g) academic stress (e.g., "I hate exams"); (h) school maladjustment (e.g., "I don't fit with the teacher's teaching methods"); (i) emotional instability (e.g., "I treat my parents alternately between cruelly and kindly"); and (j) jealousy (e.g., "When I see that other classmates are richer than me, I feel uncomfortable"). Participants were asked to indicate the extent to which each item was a problem using the following 5-point scale: 1 (*never*), 2 (*mild*), 3 (*moderate*), 4 (*serious*), 5 (*very serious*). The summary score for each subscale was created by averaging the six items in that subscale. A composite score was created by averaging the scores of all ten subscales to index overall mental health problems.

Wang and colleagues' (1997) original study showed satisfactory internal consistency for the MHI-A. Cronbach's alphas ranged from 0.65 to 0.85 for the subscales (Beijing University Insight Workshop, Mental Measure Toolbox 210 Soft Manual, 2000). The MHI-A also demonstrated good test-retest reliability, between 0.72 and 0.91 for the 10 subscales over a period of 10 days. In the present study, we obtained an interclass correlation of 0.93 for the entire scale, indicating a high level of reliability. The correlations between the total scale and the 10 subscales were between 0.68 and 0.80, indicating relatively high internal validity.

CSSMSS. The CSSMSS (Huang et al., 2000) measures the coping styles of Chinese adolescents. The items on the CSSMSS are rated on a 5-point scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The 30-item CSSMSS has six subscales: (a) problem solving (e.g., “I would make a plan to overcome something difficult and try to follow the plan”); (b) help-seeking (e.g., “I would ask my parents or friends to help me find some ways to solve the problem”); (c) avoidance (e.g., “I would think of other pleasurable things”); (d) venting (e.g., “I would lose my temper with somebody or something that made me frustrated”); (e) fantasizing (e.g., “I would imagine myself becoming a superhero and overcoming all difficulties in life”); and (f) acceptance (e.g., “I would suffer the pain by myself”). Huang and colleagues found that the CSSMSS was a valid and reliable measure. Cronbach’s alpha was 0.77, and the test-retest correlations over a 1-month period of six subscales ranged from 0.68 to 0.89. In our sample the Cronbach’s alpha was 0.63.

RESULTS

Mental Health Problems in Rural and Urban Schools

One-way ANOVAs were used to examine the group differences in the composite scores and the scores of each subscale of the CSSMSS. Consistent with Hypothesis 1, students in the low-SES rural group scored significantly higher than those in high-SES rural and urban groups on the subscales for paranoid symptoms, hostility, depressive symptoms, anxiety, academic stress, maladjustment, emotional instability, jealousy, and total mental health score (see Table 1). Also consistent with Hypothesis 1, the high-SES rural group was higher than the urban group in obsessive-compulsive symptoms, paranoid symptoms, hostility, sensitivity to interpersonal relations, jealousy, and overall mental health problems.

To examine whether mental health problems varied by gender in the three areas, independent samples *t* tests were conducted on the total mental health problem scale and its subscales. Results showed no gender differences for any of the subscales or the total scale in the urban and high-SES rural groups. Among students from the low-SES rural group, however, female students reported higher levels on the total scale and each of the following subscales: obsessive-compulsive symptoms ($t = -3.79, p < 0.01$); paranoid symptoms ($t = -2.27, p < 0.05$); sensitivity ($t = -3.03, p < 0.01$); depressive symptoms ($t = -4.15, p < 0.01$); anxiety ($t = -2.59, p < 0.01$); instability ($t = -2.50, p < 0.05$); and total mental health problems ($t = -2.74, p < 0.01$). Figure 1 shows the average score for total mental health problems by gender and by residence. To confirm the apparent gender-by-group interaction revealed by the *t* tests, a two-way analysis of variance on the total score was run. The interaction term was significant, $F(2, 868) = 4.09, p = .017$. Females in the low-SES rural group reported the most mental health problems.

Coping Styles Among Rural and Urban Students

As shown in Table 2, students in high-SES rural schools reported using problem-solving coping more than those in low-SES rural schools. Students in low-SES rural schools were more likely than the other two groups to vent and fantasize. Finally, students in the low-SES rural schools were more likely to seek help than those in urban schools.

Table 1. Mean Level Comparisons of Mental Health Problems Across the Three Groups

Mental health problems	Urban (A) (n = 189)		Rural high-SES (B) (n = 443)		Rural low-SES (C) (n = 293)		F	p	Post-hoc test (Scheffe) p < .05
	M	SD	M	SD	M	SD			
Obsessive-compulsive	2.16	0.60	2.28	0.56	2.27	0.65	3.07	0.047	B > A
Paranoid symptoms	1.83	0.64	1.96	0.56	2.10	0.68	11.18	0.000	C > B > A
Hostility	1.81	0.74	1.96	0.65	2.10	0.76	9.17	0.000	C > B > A
Sensitivity	2.09	0.74	2.26	0.70	2.37	0.77	8.19	0.000	C, B > A
Depressive symptoms	1.95	0.73	1.98	0.61	2.19	0.68	10.92	0.000	C > A, B
Anxiety	2.13	0.80	2.29	0.74	2.49	0.82	12.58	0.000	C > A, B
Academic stress	2.17	0.86	2.32	0.76	2.53	0.86	12.38	0.000	C > A, B
Maladjustment	2.09	0.66	2.07	0.55	2.37	0.69	21.62	0.000	C > A, B
Instability	2.30	0.75	2.34	0.64	2.43	0.68	2.529	0.081	C > A, B
Jealousy	1.94	0.70	2.14	0.60	2.19	0.67	9.14	0.000	C > B > A
Overall mental health problems	2.05	0.60	2.16	0.48	2.30	0.56	13.80	0.000	C > B > A

Note. SES = socioeconomic status; M = mean; SD = standard deviation.

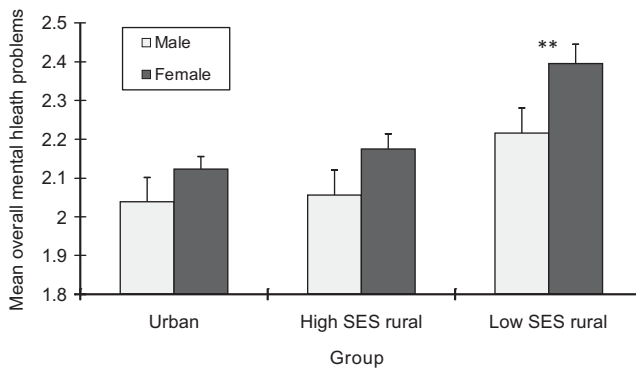


Figure 1. Mean overall mental health problems by gender and by group. **p < .01

Table 2. Comparisons of Coping Styles Among the Three Groups

Coping styles	Urban (A) (n = 189)		Rural high-SES (B) (n = 444)		Rural low-SES (C) (n = 294)		F	p	Post-hoc test (Scheffe) p < .05
	M	SD	M	SD	M	SD			
Problem solving	3.44	0.69	3.46	0.65	3.33	0.79	3.22	0.040	B > C
Help seeking	2.66	0.75	2.77	0.71	2.83	0.69	3.54	0.030	C > A
Avoiding	3.15	0.68	3.13	0.63	3.15	0.70	0.14	0.869	
Venting	2.60	0.70	2.66	0.72	2.80	0.77	5.11	0.006	C > A, B
Fantasizing	2.74	0.97	2.72	1.00	2.90	0.96	3.02	0.049	C > A, B,
Acceptance	3.37	0.79	3.40	0.75	3.29	0.82	1.75	0.175	

Note. SES = socioeconomic status; M = mean; SD = standard deviation.

We also found one consistent gender difference across all three groups and two other gender differences that were specific to one or two groups. Female students were more likely than males to vent in all three groups (the urban students, $t = -2.37$, $p < 0.05$; the high-SES rural students, $t = -4.66$, $p < 0.01$; and the low-SES rural students, $t = -4.04$, $p < 0.01$). In addition, female students in urban and high-SES rural areas were more likely to use avoidance to cope with problems than were their male counterparts ($t = -2.18$, $p < 0.05$, for urban students; $t = -2.40$, $p < 0.01$, for high-SES rural students). Finally, only among high-SES rural students, females were more likely to seek help than were males ($t = -4.68$, $p < 0.01$).

Correlations Between Mental Health Problems and Coping Styles

Table 3 presents the correlation coefficients between mental health problems and coping styles. Problem solving was associated with fewer mental health problems for all three groups as well as for the total sample. Also negatively correlated with mental health problems were help seeking (for the two rural groups and the total sample) and avoidance (for low-SES rural group and the total sample). Fantasizing was positively correlated with mental health problems for all three groups and the total sample. Finally, venting was positively related to mental health problems among the low-SES rural students and for the total sample.

In general, the correlations between mental health problems and coping styles were similar between males and females for all three groups. Of the 18 pairs of correlations (six coping strategies by three groups), only one pair showed significant differences: fantasizing was positively correlated with mental health problems for female urban students ($r = 0.38$, $p < 0.001$), but not for male urban students ($r = 0.02$, $p > 0.05$). These two correlations were significantly different based on r -to- z transformation ($Z = -2.62$, $p < .01$).

Hierarchical Multiple Regression Analysis

To test Hypothesis 3, whether demographic and/or coping styles could account for urban-rural and SES-related differences in mental health problems, we ran a hierarchical multiple regression analysis (see Table 4). Two dummy variables (high-SES rural group and low-SES rural group, with the urban group of students as the reference group) were entered on the first step. The low-SES rural group and the high-SES rural group differed from the urban group. These group variables accounted for 2.7% of the variance in adolescents' mental health problems. On the second step, gender and its interaction with the two group dummy variables were entered. This step accounted for an additional 1.0% of the variance. On the third step, other demographic variables were entered, including students' grade level, parents'

Table 3. Correlations Between Mental Health Problems and Coping Styles for the Three Groups and the Total Sample

Sample	Problem solving	Help seeking	Avoiding	Venting	Fantasizing	Acceptance
Total sample	-0.35**	-0.09*	-0.09**	0.10**	0.23**	-0.00
Urban students	-0.28**	0.05	-0.04	0.10	0.17*	0.01
High-SES rural students	-0.31**	-0.15**	-0.03	0.04	0.28**	0.08
Low-SES rural students	-0.42**	-0.15*	-0.18**	0.13*	0.20**	-0.08

Note. SES = socioeconomic status. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4. Hierarchical Multiple Regression Analysis of Mental Health Problems

	Step 1		Step 2		Step 3		Step 4	
	b (SE)	Beta	b(SE)	Beta	b(SE)	Beta	b (SE)	Beta
(Constant)	2.22(0.02)***		2.22(0.02)***		2.16(0.13)***		2.74(0.18)***	
Low SES	0.12(0.03)***	0.21	0.12(0.03)***	0.21	0.11(0.03)***	0.19	0.09(0.03)***	0.16
High SES	0.05(0.02)*	0.20	0.05(0.02)*	0.09	0.03(0.05)	0.06	0.04(0.02)	0.06
Gender			0.03(0.02)	0.05	0.03(0.02)	0.05	0.02(0.02)	0.04
Gender × low SES			0.05(0.03)*	0.09	0.04(0.03)	0.07	0.02(0.02)	0.04
Gender × high SES			-0.01(0.02)	-0.02	-0.02(0.02)	-0.03	-0.02(0.02)	-0.03
Grade level					-0.14(0.04)***	-0.12	-0.08(0.04)*	-0.07
Financial status					0.01(0.02)	0.03	0.01(0.02)	0.02
Parental occupation					0.03(0.03)	0.04	0.01(0.03)	0.01
Parental education					0.06(0.03)*	0.10	0.03(0.02)	0.06
Problem-solving							-0.22(0.03)***	-0.29
Help-seeking							-0.04(0.03)	-0.05
Avoiding							-0.07(0.03)*	-0.09
Venting							0.06(0.03)*	0.08
Fantasizing							0.09(0.02)***	0.17
Acceptance							0.04(0.03)	0.05
	<i>F</i> = 11.794		<i>F</i> = 6.397		<i>F</i> = 5.736		<i>F</i> = 13.840	
	<i>R</i> ² = 0.027		<i>R</i> ² = 0.037		<i>R</i> ² = 0.058		<i>R</i> ² = 0.200	

Note. SES = socioeconomic status; SE = standard error. **p* < .05; ***p* < .01; ****p* < .001.

educational attainment, parents' occupational status, and perceived financial status. These variables accounted for 2.1% additional variance in overall mental health problems. Parental education and grade level were significant predictors of adolescents' mental health problems. At this step, differences between the low-SES rural group and the urban group remained significant, whereas the difference between high-SES rural and urban students became nonsignificant. On the fourth step, coping styles were entered. They accounted for an additional 14.2% of variance in mental health problems. Unique predictors from this step were problem solving, avoidance, venting, and fantasizing. The difference in overall mental health problems between the low-SES rural and urban students was reduced somewhat from the original *B* = .12 on the first step, to *B* = .09 on the fourth step, but remained significant even after demographic and coping styles were taken into account.

DISCUSSION

The main goal of this study was to investigate urban-rural differences in mental health and coping among adolescents in China. To further examine the role of rural economic development in adolescent mental health, we included two rural groups: one with a low level of economic development (low-SES group) and the other with a high level of economic development (high-SES group). Results showed that low-SES rural students, especially females, had more mental health problems than high-SES rural students, who in turn had more mental health problems than students in urban schools. Our results are in clear contrast with those from studies conducted in the United States (Rueter et al., 2007), which found no significant urban-rural differences in adolescents' mental health. One explanation of this inconsistency is that in industrialized societies like the United States, urban-rural differences in economic

development are not as dramatic as those in developing countries such as China. In other words, economic development of a region or country may directly affect the type of urban-rural differences (or lack of them) in adolescents' mental health. To support that conjecture, we found that the main group differences in mental health appeared between low-SES rural scores and high-SES rural schools, especially for females, and not between rural and urban schools.

This role of economic development in adolescents' mental health may also explain the existing inconsistencies among the previous studies of urban and rural Chinese adolescents. As pointed out earlier, several of the studies contrasted major cities with neighboring villages, whereas other studies compared smaller cities and townships with villages. Without knowing each group's level of economic development, it is problematic to draw conclusions about urban-rural differences. In general, it appears that those studies (Li et al., 2004; Wang, 2002) that contrasted major cities with villages showed differences in mental health favoring urban areas, whereas those (e.g., Liu & Li, 2005) that contrasted small cities and townships with villages sometimes showed rural advantage.

Not only did rural adolescents show different levels of mental health problems, but they also used different coping strategies. Students in high-SES rural schools reported using problem-solving coping more than those in low-SES rural schools. Our study found that problem solving as well as help seeking, both of which are problem-focused styles of coping, were negatively related with mental health problems. It seems likely that high-SES rural students may have successfully used their coping strategies to reduce their mental health problems. Furthermore, when coping styles and other variables were statistically controlled for in the final regression step, this group no longer differed significantly from the urban students.

Students in low-SES rural schools were more likely than those in high-SES rural schools and urban schools to vent and fantasize and more likely to seek help than those in urban schools. Fantasizing and venting, both of which are emotion-focused styles of coping, were positively related with mental health problems of students of low-SES rural students. It appears that these students were relying on ineffective coping strategies. They were, however, more likely to seek help (a negative correlate of mental health problems) than the other two groups. Taken together, the variables included in our regression models (background characteristics and coping styles) were not able to account for all differences in mental health problems between low-SES and the other two groups. Future research is needed to expand the search for other variables that may help explain the combined effects of SES and residence on mental health.

Another finding worth discussing is the significant gender difference in mental health in low-SES rural schools. The female students in low-SES rural areas had the most mental health problems among all groups. Our results are consistent with findings from suicide research in China. In contrast to the West, the female suicide rate in China is higher than that of males (Yip, Callanan, & Yuen, 2000; Yip & Liu, 2006). In fact, China is the only country in which suicide rates are higher among women than men, mainly because young women living in rural areas have higher suicide rates than their male counterparts (Yip et al.; Yip & Liu). An earlier comprehensive review (Pritchard, 1996) reported that rural Chinese women had the highest reported suicide rates in the world. These overall statistics combined all rural areas regardless of their levels of economic development. Our results contributed to this literature by showing that it was perhaps the low-SES regions that drove the urban-rural differences in general mental health problems and possibly more extreme problems such as suicide. Our correlational and regression analyses showed that this small residence-by-gender

interaction became non-significant when background characteristics and coping styles were considered, suggesting that these factors were possibly associated with that interaction. That speculation is in line with other researchers' views that cultural factors and social support may explain the higher suicide rates in rural China (Salib & Tadros, 2007; Yip et al.).

In sum, results of this study highlight the importance of examining diversity within rural areas when studying adolescents' mental health problems and their coping styles. When such diversity is considered, gross generalizations about rural students can be avoided and prevention and intervention programs that aim to promote rural mental health can be better targeted. Our study also points to the importance of coping styles in adolescent health in all contexts. Strategies such as problem-focused coping appear to be effective for all groups and strategies that are ineffective, such as venting, generally are ineffective for all as well. This conclusion should be further verified by intervention research that can determine effectiveness of these strategies. Finally, given that our model failed to account for all residence differences in mental health problems, future research should expand the search for factors that contribute to the low-SES rural students' mental health problems.

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