Birth cohort changes in Chinese adolescents’ mental health

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In China, rapid economic growth and increasing social problems constitute two basic characteristics of contemporary social change. During the process of dramatic social change, an emerging question is how adolescents’ mental health has changed across birth cohorts. The present paper reviews four studies of crosstemporal meta-analysis conducted by us. By meta-analysis of previous literature, we examined changes in mean scores on mental health measures over time (from the early 1990s to the mid-2000s). It was found that since the early 1990s, Chinese adolescents’ mental health deteriorated across birth cohorts, shown in increased scores on the negative indicators of mental health (e.g. mental problems, anxiety, and depression), whereas self-esteem as a positive trait decreased. The dropping trend in Chinese adolescents’ mental health could be attributed to social change, especially increasing social problems. Therefore, adequate attention must be paid to potential influences of social change on individuals’ psychological development.

Keywords: Adolescent; Birth cohort; Mental health; Meta-analysis; Social change.
During the past two decades, remarkable improvements in economic strength and a considerable upgrade in the quality of people’s life have been observed in China. The Chinese gross domestic product has grown annually by 10% and the average disposable income of urban and rural residents has doubled (National Bureau of Statistics of China, 2007). However, negative social indicators such as divorce rate and crime rate have increased simultaneously, which might bring individuals more social adaptation difficulties and psychological problems (Tseng et al., 2001; Xin, Zhang, & Liu, 2010). Adolescents are at an age vulnerable to rapid social change, thus how their mental health changed since the early 1990s has attracted many researchers’ attention (Tseng et al., 2001). The present paper gives an outline of birth cohort changes in Chinese adolescents’ mental health based on a series of crosstemporal meta-analyses carried out by us (Xin & Chi, 2008; Xin & Zhang, 2009; Xin et al., 2010).

PSYCHOLOGICAL CHANGES ACROSS BIRTH COHORTS

The time dimension of psychological development refers not only to age but also to birth cohorts representing a historic period of time. Different birth dates mean different experiences in social change. A birth cohort consists of those people born in a particular period or year; hence they may have similar social experiences. For instance, people of the generation born in the early 1920s had to face the Great Depression in their childhood, thus they earned the title of “Children of the Great Depression” (Elder, 1970), and possibly had a similar life course (Elder, 1998). However, people from different birth cohorts often have different psychological development trajectories (Twenge, 2001a), especially in a historic period with rapid social change.

Society as a macrosystem potentially has indirect influences on individuals’ life course or psychological development through systems under it. Bronfenbrenner’s (1979, 1989) theory divided the environment with an effect on individual development into four layers, ranging from a microsystem to a macrosystem, which comprises cultural values, customs, and laws. Changes or conflicts in any one layer will ripple throughout other layers. The effects of the macrosystem, therefore, could have a cascading influence throughout the interactions of all other layers. Thus, birth cohort, as a proxy for the macrosystem, might have substantial effects on an individual’s mind (Baltes & Nesselroade, 1972; Sloan, 1996). A series of studies by Twenge and colleagues (1997a, 1997b, 2000, 2001a, 2001b, 2008; Twenge & Campbell, 2001; Twenge, Zhang, & Im, 2004) have already shown that Americans’ personality traits, such as self-esteem, neuroticism, extraversion, externality in locus of control, the need for approval, masculine and feminine traits, attitudes to women and women’s assertiveness, changed greatly with macro social change. For instance, Twenge (2000) found that American adolescents increased almost a full standard deviation in anxiety between 1952 and 1993, caused by decreases in social connectedness and increases in environmental dangers.

Also, dramatic social change, especially increasing social problems, can directly relate to psychological maladjustment (e.g., hostility, depression, and anxiety). In an earlier investigation conducted by Lauer and Thomas (1976) on two samples from England and the United States, there was a positive correlation between anxiety level on one hand and change in individual life circumstances and perceived rate of social change on the other, with the perceived rate of social change being more significant as a predictor of anxiety level than change in life circumstances.

In recent decades, the rate of social change in China has been unprecedented. How has this affected Chinese adolescents’ mental health? Is the level of mental health up or down since the early 1990s? As far as we are aware, no systematic empirical research has investigated this issue except for our work (Xin & Chi, 2008; Xin & Zhang, 2009; Xin et al., 2010).

INVESTIGATING BIRTH COHORT CHANGES IN MENTAL HEALTH BY A SPECIAL META-ANALYSIS

To investigate birth cohort changes of Chinese adolescents’ mental health, it would be best to sample and observe as many cohorts as possible for collecting longitudinal data, but no longitudinal investigations across a historic term (e.g., 10 years) have ever been carried out for this purpose. The history has gone, so how can we investigate today
for psychological changes that may have occurred? A special meta-analysis, named the crosstemporal meta-analysis, may be used to summarize changes in the absence of longitudinal studies. Different from the traditional meta-analysis, the crosstemporal meta-analysis does not compute an effect size for each original study but instead examines the change in mean scores on psychological measures over time (Twenge, 2001a). By recording the year of scale administration on a series of equivalent samples, this technique makes it possible to study birth cohort differences of psychological scores (Twenge, 1997a, 1997b, 2000, 2001a, 2001b, 2008). For instance, in different years, there were many studies measuring Chinese adolescents with a scale called the Symptom Checklist 90 (Derogatis, Lipman, & Covi, 1973). In fact, the year of scale administration represents the birth cohort. When the mean score of each measure in each year as a data point is located in a scatter plot with the X-coordinate representing the year of data collection and the Y-coordinate representing the score of psychological measure, then the birth cohort changes in the measure can be analyzed.

Our aim was to explore birth cohort changes in Chinese adolescents’ mental health. To conduct a meta-analysis, we searched for a series of original studies using the same scales measuring Chinese adolescents. Finally, four scales widely used in mental health research were focused on, including the Symptom Checklist 90, Zung’s (1971) Self-Reported Anxiety Scale, Zung’s (1965) Self-Rating Depression Scale, and Rosenberg’s (1965) Self-Esteem Scale.

**METHOD**

The Symptom Checklist 90 is a tool to evaluate psychological problems and identify symptoms with a five-point (1 to 5) rating scale for 90 items. The checklist yields nine scores (by averaging all item scores belonging to a dimension) respectively for nine primary symptom dimensions, such as somatization, obsessive-compulsive behavior, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism (Derogatis et al., 1973). Evidently, the checklist provides a comprehensive measurement for nine mental problems.

In China, Zung’s (1971) Self-Reported Anxiety Scale is the most popular instrument to measure anxiety-related symptoms. It has 20 items requiring participants to report their typical feelings during the past week on a scale of 1 to 4. The raw score (sum of scores on all items) is multiplied by 1.25 as an index score of an individual’s anxiety level.

Zung’s (1965) Self-Rating Depression Scale also has 20 items, addressing each of the four most commonly found characteristics of depression: the pervasive effect, the physiological equivalents, other disturbances, and psychomotor activities. Ten items are worded positively and 10 items are worded negatively. Each item is scored on a scale of 1 to 4. Also, the raw score (sum of scores on all items) is multiplied by 1.25 as an index score of individual’s depression level.

By Rosenberg’s (1965) definition, self-esteem refers to self-judgments of personal worth and global feelings of competence and self-acceptance. Hundreds of studies on Chinese self-esteem were conducted from 1995 to 2007, of which about 80% used Rosenberg’s (1965) Self-Esteem Scale (Tian, 2006). The scale consists of 10 items with a range of 1 to 4. The sum of all item scores is computed as the index of self-esteem.

The above four scales can provide a multifold measure of mental health. The Symptom Checklist 90 is an effective multipurpose tool to evaluate nine kinds of psychological problems or symptoms (Derogatis et al., 1973). Although the Symptom Checklist 90 includes the dimensions of anxiety and depression, Zung’s (1971) Self-Reported Anxiety Scale and Zung’s (1965) Self-Rating Depression Scale provide a more specific evaluation for these two traits. Thus, results based on these tools can verify each other. What the Symptom Checklist 90 and the two Zung scales measure is negative indicators of mental health, i.e., mental problems, whereas Rosenberg’s (1965) Self-Esteem Scale was designed to evaluate a unidimensional structure, self-esteem, which has been regarded as the core of self-concept (high self-esteem indicates positive self-regard, but not egotism) and an important positive indicator of individuals’ psychological wellbeing. In sum, if we integrate the results of meta-analyses of original studies with the four scales, a reliable and valid conclusion may be drawn about Chinese adolescents’ mental health changes across birth cohorts.

For each of the four scales, we tried to find as many original studies as possible, all based on Chinese adolescent samples from middle schools or vocational schools (typical ages from 12 to 18). These studies had to meet the following criteria: (a) presenting descriptive statistics (e.g. mean and standard deviation) for target variables; (b) participant sample size above 30; (c) participants not being clients at a counseling center or in any other group for the maladjusted; (d) the measure not being completed during a special
time, e.g., the time before an exam. The strict literature inclusion rules were followed for each meta-analysis (for more details, see Xin & Chi, 2008; Xin & Zhang, 2009; Xin et al., 2010). Table 1 presents basic characteristics of each crosstemporal meta-analysis, including target trait or variable, scale, literature sample size, participant sample size (the sum of all included original samples) and time range of the year of scale administration.

For each original study, the average score of target trait (e.g., anxiety, depression), sample size, and publication year were recorded for meta-analysis. Furthermore, the year of data collection, which can indicate participants’ birth cohort, was coded as 2 years prior to publication unless another date was mentioned in the article (Oliver & Hyde, 1993). Thus, we can conduct statistical analysis for birth cohort changes in Chinese adolescents’ mental health. We adopted an overall level of significance of \( p < .05 \).

### RESULTS

From Figures 1–4 we can see clearly that all negative indicators of mental health, i.e., mental problems measured by the Symptom Checklist 90 and anxiety and depression measured by Zung’s (1965, 1971) scales, increased with the year of data collection, but the positive indicator, self-esteem, decreased.

In the Symptom Checklist 90, seven of the nine dimensions had significant correlation coefficients between the year of data collection and the mean

<table>
<thead>
<tr>
<th>Target trait</th>
<th>Scale</th>
<th>Literature sample</th>
<th>Participant sample</th>
<th>Time range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental problem</td>
<td>The Symptom Checklist 90</td>
<td>107</td>
<td>111, 925</td>
<td>1992 to 2005</td>
</tr>
<tr>
<td>Anxiety</td>
<td>Zung’s (1971) Self-Reported Anxiety Scale</td>
<td>40</td>
<td>21, 217</td>
<td>1992 to 2005</td>
</tr>
<tr>
<td>Depression</td>
<td>Zung’s (1965) Self-Rating Depression Scale</td>
<td>40</td>
<td>22, 215</td>
<td>1989 to 2005</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>Rosenberg’s (1965) Self-Esteem Scale</td>
<td>117</td>
<td>58, 134</td>
<td>1997 to 2007</td>
</tr>
</tbody>
</table>

**Figure 1.** Changes in Chinese adolescents’ mental problems, 1992–2005.

**Figure 2.** Changes in Chinese adolescents’ anxiety, 1992–2005.

**Figure 3.** Changes in Chinese adolescents’ depression, 1989–2005.
score of each dimension (somatization, obsessive-compulsive behavior, depression, anxiety, hostility, phobic anxiety, and psychoticism), $r_1$ ranged from .17 to .35, $p$ values $< .05$ (see Table 2). To find the magnitude of change for each mental problem, we used regression equations to predict the mean scores of the first and last year of included studies. It was found that from 1992 to 2005 there were different increments for the seven dimensions listed in Table 2; $MD$ ranged from 0.09 to 0.22; effect size $d$ ranged from .06 to .35.

With similar statistical procedures, it was found that there were significant correlation coefficients between the year of data collection and anxiety (.50, $p < .05$), depression (.40, $p < .05$), and self-esteem (-.36, $p < .05$). From 1992 to 2005, the anxiety score rose by 6.45, .82 standard deviations ($d = .82$); from 1989 to 2005, the depression score increased by 3.29 (from 43.50 to 46.79), .34 standard deviations ($d = .34$); from 1997 to 2007, the self-esteem score decreased by 3.68, .76 standard deviations ($d = .76$).

To sum up, since the early 1990s, the level of Chinese adolescents’ mental health showed a significant birth cohort effect. Concretely, the negative indicators of mental health, i.e. seven mental problems listed in Table 2, anxiety and depression increased across birth cohorts; whereas the positive indicator, self-esteem, dropped. In a word, since the early 1990s, the level of Chinese adolescents’ mental health has declined.

Moreover, the individual difference of mental health level also increased across birth cohorts. Table 2 shows that the standard deviations of most dimensions in the Symptom Checklist 90 had significant positive correlations with the year of data collection ($r_2$, from .22 to .31, $p$ values $< .05$), which suggested that younger generations were more differentiated than the older in mental health.

**DISCUSSION**

Our four crosstemporal analyses unanimously supported a conclusion that since the early 1990s Chinese adolescents’ mental health has been on a descending trajectory, which goes some way to resolving previous controversies over its trend (up or down). Our findings confirmed the view of mental health going down across birth cohorts. However, the birth cohort changes in mental health may be the reflection of social change in a special historic period (Baltes & Nesselroade, 1972; Sloan, 1996), thus a following question is: What is the relationship between mental health and contemporary social change, especially the increasing social problems?

As introduced above, social change or social environment, as a macrosystem, may have direct or indirect effect on individuals’ psychological development. For instance, Twenge (2000) proposed that American adolescents’ increase in anxiety between 1952 and 1993 could be attributed to decreases in social connectedness and increases in environmental dangers. In contemporary China there are similar social problems, therefore we intended to analyze their relations with adolescents’ mental health.

In China, accompanying the quick growth of gross domestic product, people live a better life than ever, but they have to face increasing social problems simultaneously. According to the China Statistical Yearbook (National Bureau of Statistics of China, 2007), the overall Gini coefficient of China increased from less than .30 before the 1980s to above .45 in 2007, which means that those average economic indicators cannot reflect the real Chinese income and the majority of ordinary people might have become relatively poorer (the Gini coefficient is a measure of inequality of income or wealth; a larger Gini coefficient indicates more unequal income or wealth distribution). According to a report of the World Bank (2006), the Chinese average real income of households in the lowest 10 percent of the income distribution declined by 2.4% from 2001 to 2003. It is evident that the rich are becoming richer and the poor are becoming poorer. Relative poverty and economic difficulties are detrimental to optimal survival and reproduction and might also produce anxiety (Twenge, 2000) and other mental problems. Previous studies indicated that
poverty could increase children’s anxiety (Elder, Nguyen, & Caspi, 1985; Zhong & Huang, 2003) through lowering their self-efficacy and self-esteem (Zhai, Shi, & Huang, 2002). Chinese adolescents also saw increasing threats in recent decades: Individual expenditure on health care has increased by a factor of about 20 since 1990 (Ministry of Health, 2007) because of the inadequate Chinese health insurance system; criminal cases have risen greatly, from 13.5 per 10,000 population in 1990 to 35.5 in 2005 (Chinese Law Yearbook Editorial Board, 2007), which may be creating an unsafe feeling in the minds of adolescents; competition among peers also became fiercer in all kinds of examinations and employment, which may cause adolescents increased pressure and feelings of uncertainty with regard to their future. As it was found that divorce, crime and unemployment in society can all shape children’s self-esteem negatively (Amato & Keith, 1991; Twenge & Campbell, 2001), Chinese adolescents very possibly experience more mental problems than before.

As well as environmental dangers, low social connectedness can produce high levels of anxiety, loneliness, and depression (Twenge, 2000). Chinese society, since the 1980s, has experienced a great decline in social connectedness. Industrialization and urbanization processes not only caused large populations to move into less socially connected cities but also encroached on the traditional Chinese environment associated with quality of life (Ogunseitan, 2005). It was these modernization processes that led to the collapse of the Chinese traditional large family system (Tian, 2002) and the eruption of the floating population (referring to those migrant workers who move from their home place, often the undeveloped rural areas of China, to eastern developed cities to work to support their family), both of which, especially the latter, might increase adolescents’ mental problems (e.g. hostility, anxiety, depression) through cutting the frequency and degree to which they have contact with parents and other family members (Liu, Gao, Wang, & Wang, 2007; Zhou, Sun, & Fan, 2007). When most floating people work in cities, they have to leave their children in rural hometowns. According to studies (Hao & Cui, 2006; Wang & Lin, 2003; Zhao, Liu, & Shen, 2008), children without parents at home tend to be more depressed and less confident. In addition, the divorce rate increased and the birth rate decreased continuously during the past three decades (National Bureau of Statistics of China, 2007), implying a more unstable and lonely family environment for Chinese adolescents.

In our four crosstemporal meta-analyses, we examined the relation of mental health and social problems with a statistical approach. Based on the above literature review, we identified many social indicators representing social problems or social structure, such as divorce rate, unemployment rate, Gini coefficient, personal medical expenditure, urbanization level, proportion of students in college, proportion of students in middle school, and crime rate. All of these indicators were extracted from the China Statistical Yearbook (National Bureau of Statistics of China, 2007) except for crime rate, obtained from the Law Yearbook of China (Chinese Law Yearbook Editorial Board, 2007), and personal medical expenditure obtained from the China Health Statistical Yearbook (Ministry of Health, 2007).

Correlating psychological scores directly with social indicators may provide a view of possible causes of birth cohort change in Chinese adolescents’ mental health. To clarify whether it is a case of social problems affecting mental health or vice versa, a time lag was introduced when matching social indicators and psychological variables as suggested by Twenge (2000). For example, in our meta-analysis (Xin et al., 2010) about anxiety measured by Zung’s (1971) Self-Reported Anxiety Scale, social indicators were matched with the

### Table 2: Relationship between mental problem and the year of data collection

<table>
<thead>
<tr>
<th>Dimension</th>
<th>$r_1$</th>
<th>$r_2$</th>
<th>$M_{1992}$</th>
<th>$M_{2005}$</th>
<th>MD</th>
<th>$M_{SD}$</th>
<th>$d$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somatization</td>
<td>.35*</td>
<td>.26*</td>
<td>2.28</td>
<td>2.45</td>
<td>0.17</td>
<td>0.49</td>
<td>.35</td>
</tr>
<tr>
<td>Obsessive-compulsed</td>
<td>.24*</td>
<td>.23*</td>
<td>1.74</td>
<td>1.91</td>
<td>0.17</td>
<td>1.94</td>
<td>.09</td>
</tr>
<tr>
<td>Depression</td>
<td>.26*</td>
<td>.22*</td>
<td>0.63</td>
<td>0.79</td>
<td>0.16</td>
<td>1.70</td>
<td>.09</td>
</tr>
<tr>
<td>Anxiety</td>
<td>.32*</td>
<td>.31*</td>
<td>1.87</td>
<td>2.09</td>
<td>0.22</td>
<td>1.64</td>
<td>.13</td>
</tr>
<tr>
<td>Hostility</td>
<td>.22*</td>
<td>.18</td>
<td>1.70</td>
<td>1.83</td>
<td>0.13</td>
<td>1.72</td>
<td>.08</td>
</tr>
<tr>
<td>Phobic anxiety</td>
<td>.17*</td>
<td>.06</td>
<td>0.87</td>
<td>0.96</td>
<td>0.09</td>
<td>1.52</td>
<td>.06</td>
</tr>
<tr>
<td>Psychoticism</td>
<td>.31*</td>
<td>.28*</td>
<td>1.28</td>
<td>1.46</td>
<td>0.18</td>
<td>1.56</td>
<td>.12</td>
</tr>
</tbody>
</table>

$r_1$ and $r_2$ are the correlation coefficients between the year of data collection and the mean score (and standard deviation) of each dimension, weighted by sample size. $MD$ is the difference between means of 1992 and 2005. $d = (M_{2005} - M_{1992}) / M_{SD}$. *p < .05.
TABLE 3
Correlations between social indicators and Chinese adolescents’ anxiety score, weighted by sample size, 1992–2005

<table>
<thead>
<tr>
<th>Social indicator</th>
<th>10 years prior</th>
<th>5 years prior</th>
<th>Actual year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic conditions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>.19</td>
<td>.50*</td>
<td>.36*</td>
</tr>
<tr>
<td>Gini coefficient</td>
<td>.49*</td>
<td>.51*</td>
<td>.33*</td>
</tr>
<tr>
<td>Overall threat</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crime rate</td>
<td>.28</td>
<td>.31*</td>
<td>.33*</td>
</tr>
<tr>
<td>Personal medical expenditure</td>
<td>.54*</td>
<td>.53*</td>
<td>.33*</td>
</tr>
<tr>
<td>Proportion of students in college</td>
<td>.50*</td>
<td>.47*</td>
<td>.26</td>
</tr>
<tr>
<td>Social connectedness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Divorce rate</td>
<td>.47*</td>
<td>.47*</td>
<td>.26</td>
</tr>
<tr>
<td>Urbanization level</td>
<td>.49*</td>
<td>.54*</td>
<td>.33*</td>
</tr>
</tbody>
</table>

n = 40. *p < .05.

anxiety data in three ways: 10 years before the data were collected, 5 years before, and during the year of data collection (see Table 3). Lagging the social indicators illustrated how in adolescents, who were 12 to 17 years old when the data was originally collected, anxiety correlated with the social climate when they were 2 to 7 years old, 7 to 12 years old and 12 to 17 years old. The results showed that nearly all correlations were significant (Table 3). The strongest, most significant correlations appeared between social indicators of 5 years prior and anxiety: Nearly all correlations were around .50, p values < .05. Correlations between social indicators for the year of data collection and anxiety were the weakest, though many of them were significant, p values < .05. It is concluded that social problems, e.g. economic conditions, overall threat, and social connectedness can effectively predict adolescents’ anxiety level, and correlations between social indicators of 5 years prior to the data collection and anxiety were the strongest among all matching cases, indicating that children were most influenced by the macrosystem at 7 to 12 years old. The results confirmed Twenge’s (2000, 2001a) view that the social environment of 10-year-old children was the best predictor of individuals’ personalities.

Similar lag correlation procedures were used in our meta-analyses about depression (Xin & Chi, 2008) measured by Zung’s (1965) Self-Rating Depression Scale and mental problems measured by the Symptom Checklist 90 (Xin & Zhang, 2009). It was found that most social indicators of 5 years prior to data collection and of actual year of data collection had significant correlations with adolescents’ depression level (p values < .05); however, this was not so for social indicators of 10 years before. Similar results were found for the mental problems measured by the Symptom Checklist 90 and listed in Table 2. It is should be noted that in most cases, the abovementioned psychological variables had no significant association with the social indicators of 5 or 10 years after. In sum, social indicators can serve as the predictors of adolescents’ mental health, but not vice versa. Thus, our four meta-analyses have shown that social problems are the most likely reason for Chinese adolescents’ mental health declining.

Recently China has been recognized as an important power for its great economic success; however, this country is experiencing emerging serious social problems simultaneously. The situation of China is just as one report from the World Bank (2003) has stated: In many developing countries, the high growth rate of the economy is accompanied by increasing unemployment, a growing income gap among people from different groups and regions, as well as deterioration of social and cultural conditions. The consequence of these social problems, as we found, is the lowering of adolescents’ mental health.

In fact, it is a worldwide issue that dramatic social changes, especially increasing social problems, lead to psychological maladjustment (e.g., anxiety, depression, and other mental problems). For example, the same situation existed in the 1970s in developed countries such as the USA. Lauer and Thomas’ (1976) study in England and the United States indicated that perceived rate of social change was a significant predictor of individuals’ anxiety level, and the findings in America were duplicated in a later crosstemporal meta-analysis by Twenge (2000). Twenge and Campbell (2001) also found that between 1965 and 1975, American adolescents showed a significant downward trend in self-esteem, and all these psychological problems could be attributed to dramatic social changes at that time. The similar psychological problems emerge again in contemporary China, and in other developing or developed countries, such as Japan, Korea, Singapore, and Malaysia (Tseng et al., 2001).

FUTURE RESEARCH AND PRACTICE

The present paper suggests that researchers should pay more attention to individual psychological development under dramatic social change. In future, crosstemporal meta-analyses or longitudinal investigations should be conducted on other age-group people (e.g., college students and elder people), so as to reveal whether the effect of social
change on mental health exists generally across age groups or just in special birth cohorts of adolescents. Psychologists, psychiatrists, and mental health-related workers should be more open-minded in understanding the social roots of mental problems with multifold views consisting of psychology, psychiatry, and sociology. They should develop mental health service networks that extend into the community rather than remain contained in institutions in large urban settings (Tseng et al., 2001). More importantly, governments should take powerful action to smooth social problems, with social or educational agencies offering more mental health services to adolescents. The Chinese government has proposed a national goal of building a harmonious society, which is designed to provide a better solution for all kinds of social problems. After all, the present mental health issues are beyond ordinary clinical work or the traditional one-to-one counseling pattern, and the promotion of mental health should be considered as a whole at the societal level.

REFERENCES


