Market Reforms and Psychological Distress in Urban Beijing

Gina Lai
Hong Kong Baptist University

Rance P. L. Lee
The Chinese University of Hong Kong

abstract: This article examines the change in psychological well-being among urban residents in Beijing, China, over a 10-year period of rapid social change. The findings suggest that urban reforms generate economic gains at the expense of urban residents' psychological well-being. Results from two community surveys conducted in 1991 and 2000 reveal that urban Beijing residents have experienced greater life stress and a rise in depressive symptoms during the 10-year period. The decline in psychological well-being between 1991 and 2000 can be partly explained by greater exposure of Beijing residents to life stressors in the course of rapid social changes associated with the urban reforms. The survey results also lend support to the social adjustment and stress explanation, but not the social relations and support explanation. Changes in social relations only marginally affect the change in depressive symptomatology, and the protective function of social relations, particularly relations with family and co-workers, has gained importance over the years.

keywords: China ✦ depression ✦ social change ✦ social relations ✦ urban stress

Many cities in socialist China have been undergoing tremendous economic, social and spatial changes since the mid-1980s when the Chinese government launched market reforms in the urban areas (Watson, 1992; Chow, 2002). State-run businesses are increasingly overshadowed by multinational joint ventures and private enterprises. The young and educated people are increasingly lured away from their stagnant state work-units by lucrative remuneration packages offered by foreign firms. Humble workers become self-employed entrepreneurs. Old residential homes give way to modern office buildings or up-market shopping

International Sociology ✦ July 2006 ✦ Vol 21(4): 551–579

SAGE (London, Thousand Oaks, CA and New Delhi)
DOI: 10.1177/0268580906065301

centres. Run-down neighbourhoods are converted into elegant private housing estates. Alongside these economic successes, rural migrant enclaves spring up on the city fringes. Alienation and fear of crime are creeping into previously cohesive and safe neighbourhoods. An army of the distressed and unemployed is in formation as a result of the restructuring of state enterprises. The rich and the poor are drifting apart, economically, socially as well as geographically, as the rich are exploiting new economic opportunities in the market while the poor are being exploited by it. How well individuals respond and adjust to rapidly changing urban life thus poses an important issue for both researchers and practitioners.

Rapid social change has long been discussed in association with heightened mobility, dissolution of primary groups and closely knit communities, and intense economic and social competition, leading to social isolation, deviance and illness (Faris and Dunham, 1939; Durkheim, 1951; Wallace, 1970; Brenner, 1973, 1987; Catalano and Dooley, 1977; Schwab and Schwab, 1978; Chen et al., 1994; Fenwick and Tausig, 1994). Despite market reforms in recent decades, there have been relatively few studies that assess how the large-scale social and economic changes are associated with the psychological well-being of urban residents in socialist China. The present article examines the impact of rapid social change associated with urban reforms on individuals' psychological well-being in Beijing, the capital city of China. Specifically, it first utilizes aggregate data to trace the socioeconomic changes in urban China in the past decade or so, with particular reference to Beijing. Implications of these changes for individual psychological well-being are examined on the basis of data from two community surveys conducted in 1991 and 2000 in urban Beijing.

Market Reforms and Chinese Urban Life

The greatest mission of the Chinese market reforms is to re-establish the legitimacy of the ruling party after the Cultural Revolution (1966–76) by improving the Chinese people's standard of living through revival of the declining Chinese economy. The strategy that the Chinese government adopted is to overhaul the Chinese economy from central command to a more diverse mode of operation, first in the rural areas and later in the urban areas. Foreign investments and market forces are reintroduced in the process of economic production and distribution. As a result, the amount of foreign investment increased 12-fold between 1985 and 2000, from US$4.65 billion in 1985 to US$59.36 billion in 2000 (State Statistical Bureau, 2001). Furthermore, the market sector – which includes foreign-funded firms, shareholding economic units, joint ventures, privately owned enterprises and individual businesses – has expanded and proliferated,

particularly since 1990 (Sabin, 1994). National statistics (State Statistical Bureau, 2001) show that in 2000, about 55 percent of employed urban residents were engaged in the market sector, as compared with fewer than 4 percent in 1985, when urban reforms first started. In Beijing, the share of the market sector increased from 4.3 percent in 1991 to 31.1 percent in 2000 (Beijing Municipal Statistical Bureau, 1992, 2001).

The market reforms have led to a substantial growth in the national economy and an improvement in individual livelihoods in the past decade or so (Chow, 2002). The national gross domestic product (GDP) per capita increased almost three times during the period between 1991 and 2000. The annual income per capita of urban households also saw a comparable growth during the same period (State Statistical Bureau, 2001). In Beijing, the annual income per capita in the said period even quadrupled (Beijing Municipal Statistical Bureau, 1992, 2001).

Alongside these economic accomplishments, changing industrial relations, rising unemployment, urban poverty and increasing economic inequality have also emerged (Han and Morishima, 1992; Chow, 2002; Solinger, 2002). To facilitate urban industrial restructuring, decision-making power has been decentralized from the state to firm level. Managers may now decide on the production, distribution and pricing of products and services in response to market factors while being held responsible for profits and losses in their organizations (Schlack, 1989; Walder, 1992; Sabin, 1994; Groves et al., 1995). The labour contract system, introduced in 1986, increases the discretionary powers of managers over their workers, in particular strengthening their ability to dismiss workers. The subsequent Optimum Labour Reorganization programme, put into effect in 1989, further allows state firms to identify and reduce surplus labour and place their remaining workforce on contract (Maurer-Fazio, 1995).

By the end of 1998, 20 million workers had been dismissed (*xiagang*) from state enterprises and urban collectives since the launch of the industrial restructuring programme (Fan, 1998). In 2000, it was estimated that 5 million workers would be laid off and as many as 11–12 million laid-off workers would be looking for work in the labour market (Kazer, 2000). Middle-aged, low-skill and female workers are found to be hit the hardest (Rosenthal, 1998). Various other sources (official as well as unofficial) have estimated the urban unemployment rate to be as high as 20–34 percent (*Apple Daily*, 1999). Although the official figures show a somewhat unreasonably low level of urban unemployment, the rising trend is notable and undeniable (about a 35 percent increase, from 2.3 percent in 1991 to 3.1 percent in 2000) (State Statistical Bureau, 2001).

New wage policies have been implemented to allow greater use of the wage system as a price mechanism regulating labour movement. Bonuses, paid out of retained earnings, were revived in 1978. Managers are being

given the autonomy to diverge from the national wage scales, and to determine wages and bonuses according to the performance of the firm and the group the employee works in, as well as the workers' own performance (Han and Morishima, 1992; Walder, 1992; Maurer-Fazio, 1995).

In addition, with the relaxation of the household registration and urban employment systems, and the abolition of food rationing, rural Chinese began to move on a large scale and of their own accord, to the coastal provinces particularly (Rozelle et al., 1999). As a result, displaced state workers face keen competition in the labour market from rural migrants, who are more flexible than urban residents about working conditions, pay, and benefits (Davis, 1992; Han and Morishima, 1992; Sabin, 1994; Solinger, 1995; Maurer-Fazio, 1995). Furthermore, as firms in the market sector are predominantly profit driven (Solinger, 1995), workers in these firms can be even more easily dismissed or have their salary cut for inadequate performance or insubordination or when the firm's profit margin falls below the desired level.

One important social consequence of urban unemployment is poverty. Although laid-off workers receive a monthly unemployment allowance from their enterprises, the amount is usually substantially less than their original income. It is reported that millions of unemployed workers live on as little as about 100 Chinese yuans (US$11) a month (Kwan, 2000). Further, because of financial difficulties, many state enterprises cannot even afford the unemployment allowance, not to mention paying the remaining workforce. Retirees, who are supposedly entitled to a monthly pension, also have to endure cuts in their pension payments (Long, 1999). There have been reports of protests by workers and pensioners when their enterprises failed to pay them (Kwan, 2000). Displaced workers lucky enough to find new jobs often take up low-paid, temporary or short-term jobs in the non-state sector. As a result, they often suffer a decline in their living standards and even live in poverty. It is estimated that 85 percent of the urban poor are workers laid-off from state enterprises (Liu, 1998). A survey of laid-off workers in Guangzhou shows that the monthly household expenditure per capita of these workers is about 50 percent less than the city average. Many unemployed workers even have to take out loans from families and friends to cover daily expenses (Huang, 1999). The situation gets worse when both the husband and wife are laid off from their respective state enterprises. In recent years, attempts have been made by the state to introduce re-employment projects and to install a national social security system, but the various measures are grossly inadequate. They are being immensely challenged by both resource scarcity and administrative incapacity (Chow, 2000; Wong and Flynn, 2001; Chen, 2002; Solinger, 2002).

In addition to poverty, displaced workers are also found to experience a low level of self-esteem and emotional stress. In a nine-city survey, laid-off women report a decline in family status and intensified conflicts with their spouse and family members. Unemployment is also allegedly linked to the rising trend of domestic violence and divorce in families where one or more members are laid off (*Shing Pao*, 1998).

A problem related to urban poverty is the widening of income inequality. Income inequality in the urban areas is found to have increased since the urban reforms were launched in the mid-1980s (Qian and Wong, 2000). Coupled with massive redundancy programmes in state enterprises, the injection of foreign direct investment in the urban economy further contributes to growing income differentials. Compared with state firms, foreign or joint venture corporations tend to offer high salaries and generous benefit packages (e.g. housing, medical insurance, a variety of subsidies) to attract and retain better-educated and skilled workers (Han and Morishima, 1992; Sabin, 1994; Solinger, 1995; Zhou, 2000). Subsequently, in contrast to middle-aged and less educated state workers, a high-skilled and high-income professional group is being formed. The former are the ones to lose out whereas the latter are the ones to gain in the reforms.

Economists show that the Gini coefficient for the distribution of urban household income per capita increased from .23 in 1988 to .33 in 1995 (Khan et al., 1999). Comparing the richest 10 percent with the poorest 10 percent of China's urban households, we can note that the disposable income per capita of the richest was three times that of the poorest in 1991. The income gap then widened five-fold by 2000 (State Statistical Bureau, 1992, 2001). In Beijing, the income gap between the richest 20 percent and the poorest 20 percent of households increased from 2.16 times in 1991 to 3.09 times in 2000 (Beijing Municipal Statistical Bureau, 1992, 2001). In other words, urban residents are becoming increasingly economically polarized.

Another notable urban change is increased residential mobility. In the pre-reform era, urban housing was viewed as a public good and rent-free housing was allocated by the state to urban residents through work-units (Walder, 1986; Bian, 1994). Workers from the same work-unit were usually put up in the same housing compound (Freeman and Ruan, 1997). The job assignment system and a well-defined internal labour market kept job mobility across work-units to a minimum. Housing shortages further hindered residential moves. As a result, many workers tend to stay with their work-units and in the same neighbourhood for their entire working life, even after retirement (Walder, 1986; Shaw, 1996).

Moving from a redistributive to a market-oriented economy, the state gradually shifts the financial responsibility of housing provision, first to

work-units and then to individuals (Logan et al., 1999), with work-units still playing a leading role in assisting their employees to obtain housing at low cost (Siu and Liu, 1997). Aiming to raise investment capital for new housing construction for their employees, work-units transfer the maintenance costs of existing housing to individuals through the subsidized purchase scheme or by taxing rent on work-unit housing. Rent and proceeds from the sales would then be used for new housing projects.

As urban land is now attached to economic value, municipal governments as well as work-units try to maximize the return of the land they occupy by converting land uses (Li and Siu, 2001). Some state enterprises move from central to suburban locations, leaving centrally located land for more profitable redevelopment projects. Motivated by the same economic reasons, municipal governments relocate thousands of households formerly residing in old inner-city houses to resettlement homes on city outskirts. Furthermore, the injection of private investment in building projects increases the stock of private housing. Some of the rich move into these homes to improve their living conditions (Logan et al., 1999). Consequently, as urban development and redevelopment are gaining speed, more and more urban residents in China are on the move. The amount of floor space of new residential buildings completed in urban China jumped from 193 million m^2 in 1991 to 548 million m^2 in 2000 (State Statistical Bureau, 2001). In sum, the urban cellular structure, which used to be maintained by work-units providing quarters to their employees close to their workplace, is showing signs of disintegration and will be replaced by a new social and economic differentiation of the urban space (Shaw, 1996; Bakken, 2000).

In Beijing, the market economy also drives the growth and rebuilding of the city. As a result of rapid urbanization, the boundary of 'urban' Beijing expanded during the period 1991–2000. In 1991, the urban area of the municipal city was divided into 10 districts: four inner-city districts (Dongcheng, Xicheng, Chongwen, Xuanwu), four inner suburbs (Chaoyang, Fengtai, Shijingshan, Haidian) and two outer suburbs (Mentougou, Fangshan). In 2000, three rural counties were upgraded to be outer suburbs (Tongzhou, Changping and Shunyi). Further, the growth of well-paid jobs in new service and high-tech industries has created a new urban rich sector zone: Dongcheng, Xicheng, Chaoyang and Haidian, which stands in contrast to the old residential and manufacturing zone: Chongwen, Xuanwu and Fengtai (Gu and Liu, 2002). To upgrade the physical conditions of the inner city and to improve the living conditions of city residents now living in old housing, the Old and Dilapidated Housing Renewal programme was launched in 1990 (Lü, 1997). Between 1991 and 2000, the amount of floor space of new family residences completed has increased by 4.5 times, from 2 million m^2 to 11 million m^2

(Beijing Municipal Statistical Bureau, 1992, 2001). Massive relocation has taken place, where the development companies usually compensate existing residents and resettle them in suburban areas in order to make land available in the inner city for high-priced commodity housing (Lü, 1997). Some original residents may return to their neighbourhoods and take advantage of the preferential rates for new housing. However, most of the returning residents have rented out their units informally to wealthy outsiders at rents far higher than the preferential prices they themselves paid (Abramson, 1997). Displacement of residents and disruption of community life have become a concern for social scientists as well as urban planners (Lü, 1997).

In addition, the influx of rural migrants has generated distinctive residential patterns in urban Beijing. The number of temporary residents (a vast majority of whom are rural migrants) more than doubled between 1991 (762,000) and 2000 (1.7 million), and so too did the proportion of temporary residents in the city. Of these temporary residents, 63 percent were concentrated in inner suburbs (particularly Chaoyang, Fengtai and Haidian) in 2000 because of lower rents there (Beijing Municipal Statistical Bureau, 2001). Various peasant enclaves are established on the fringes of the city according to geographical affiliation, such as Zhejiang village, Henan village and Anhui village (Gu and Liu, 2002). The introduction of temporary residents is considered to have disturbed the previously cohesive urban neighbourhoods and disrupted the once stable social order. Statistics show that, in Beijing, temporary residents committed 44 percent of the criminal cases solved by the police (Situ and Liu, 1996). The number of criminal cases registered increased four-fold in the city during the period from 1994 to 2000 (Beijing Municipal Statistical Bureau, 2001). As a result, the fear of crime has reportedly permeated major Chinese cities and made urban residents keep their distance from each other, physically, socially and psychologically (Situ and Liu, 1996).

Research Issues

The preceding discussion has reviewed some of the major changes in China's urban life brought about by the economic reforms of the past decade or so. Rapid social change has long been considered to exert detrimental effects on mental health (Faris and Dunham, 1939; Catalano and Dooley, 1977; Lin et al., 1981; Yeh, 1985; Brenner, 1987). Would this also be the case for Chinese cities such as Beijing?

Aggregate data for Beijing suggest a rising trend of mental health problems. The rate of attempted suicide and self-inflicted injury has steadily increased from 147 per 100,000 hospital cases in 1992 to 180 per 100,000 hospital cases in 2000. The admittance into psychiatric hospitals

also jumped from 12.96 per 1000 permanent residents in 1991 to 22.62 in 2000 (Beijing Municipal Public Health Bureau, 2002). However, statistics on seeking help are subject to the accessibility of hospital services and behavioural changes in service utilization in recent years (Meertens et al., 2003). Furthermore, hospital records often reflect only the tip of the iceberg. Due to stereotypes and negative labelling, psychiatric problems such as depression tend to be underreported and underdiagnosed (Lin et al., 1981). Therefore, in order to have a more accurate assessment of variations in psychological well-being over time, there is a need for community surveys with representative samples of the general population (Meertens et al., 2003). So, how do we account for individuals' psychological well-being?

Previous research suggests two possible factors that may affect one's psychological well-being. The social adjustment and stress hypothesis contends that in times of social transition, individuals often need to adjust to rapidly changing norms and behavioural expectations. Doing so demands much of individuals' psychological and social resources (Thoits, 1995). The process itself alone may induce tremendous stress on individuals, whatever the adjustment outcome may be (Lauer, 1974; Pearlin, 1989; Aneshensel, 1992; Thoits, 1995). Thus the first possible way that social change may affect mental health is via the exposure to life stressors.

The social relations and support hypothesis (Wirth, 1938; Faris and Dunham, 1939; Leighton et al., 1963; Bott, 1971) argues that urbanization leads to increased residential mobility, heterogeneity of urban populations and interactions in transitory and superficial roles. These processes would weaken kinship and friendship bonds and loosen group solidarity, reducing the repertoire of support for individuals when needs arise and consequently promoting loneliness, anomie and personal pathology. Depletion of social support also contributes to depressive symptoms and illness (House et al., 1988; Aneshensel and Phelan, 1999). Thus changing social relations constitute the second factor that may have an implication for psychological well-being during the transition period. The subsequent question is: which factors play a more important role in accounting for the psychological status of urban Chinese?

In light of previous literature and theoretical arguments, the present article examines the psychological well-being of urban residents in Beijing in the 1990s when urban reforms took off at an accelerating speed. Individual-level data collected from two surveys that spanned a period of 10 years of reform (1991–2000) are analysed. It is expected that due to the rapid social change in Beijing in the 1990s, Beijing residents in the year 2000, compared to their counterparts in 1991, will be more likely to be exposed to negative life stressors, or to experience poor social relations,

and thus to suffer from psychological distress. We examine and compare the plausibility of these two explanations (social adjustment vs social relations) in the context of urban China.

However, one may argue that people with more stress and/or a higher level of depressive symptomatology may be more likely to have moved into Beijing in recent years, generating an aggregate increase of clinical cases in mental health problems. Unfortunately, there are no substantial data to prove this or otherwise. In fact, we speculate that the social selection process may actually take place in the opposite direction. The rapid development of Beijing has attracted many migrants from other provinces in China to come to look for better economic opportunities (Gu and Liu, 2002) and economic migrants tend to be young and healthy (Findley, 1988). A validation of the two aforementioned alternative social selection hypotheses awaits future research. Nonetheless, previous research (Mirowsky, 1996; Mirowsky et al., 2000) suggests that such demographic variables as age, gender and education are related to the experience of stress and psychological well-being. To control for possible selectivity bias, the demographic characteristics of respondents are included in the data analyses.

Data and Method

The present study analyses data collected from two surveys conducted in urban Beijing in 1991 and 2000 respectively. The boundary of the Beijing Municipality expanded during the 10-year period through incorporating neighbouring rural counties. The 1991 survey covers 10 districts, including four inner-city districts or the city proper (Dongcheng, Xicheng, Chongwen and Xuanwu), four inner suburbs (Chaoyang, Fengtai, Shijingshan and Haidian), and two outer suburbs (Mengtougou and Fangshan), whereas the 2000 survey includes only the four inner-city districts and four inner suburbs (Figure 1). While both surveys employed the multistaged probability sampling method, the exact sampling procedures were slightly different for each survey.

In the 1991 survey, 60 residential neighbourhoods were first selected from the 10 target districts according to the population size of each district. Then, a systematic sample of 1200 households was drawn from the sampled neighbourhoods. An adult aged 18 years or older was randomly selected from each target household for a face-to-face interview. The resulting sample consisted of 1200 respondents.

In the 2000 survey, urban subdistricts constituted the basic sampling units. The probability-proportional-to-size (PPS) sampling method was applied to the selection of subdistricts from the eight target districts. From the 12 selected subdistricts, 48 neighbourhoods were chosen with the PPS

Figure 1 *Map of the Beijing Municipality*

sampling procedure. Then a random sample of 1004 households was selected from the 48 neighbourhoods. Similar to the 1991 survey, an adult aged 18 years or older was randomly selected from each sampled household for a face-to-face interview. The total sample size was thus 1004 respondents.

Since the 1991 and 2000 surveys cover slightly different geographical areas, for comparative purposes, the present analysis focuses on the respondents from the eight districts common to the two surveys (i.e.

Dongcheng, Xicheng, Chongwen, Xuanwu, Chaoyang, Fengtai, Shijingshan and Haidian). The effective sample size for the 1991 survey then is 960 respondents whereas that for the 2000 survey is 1004 respondents.

A comparison of the two samples shows some differences in the socioeconomic composition of respondents (Table 1). Compared with the 1991 sample, the 2000 sample consists of more women and older individuals. The educational level of respondents in 2000 is somewhat lower than that in 1991. There are more retired and other non-employed respondents in the 2000 sample than in the 1991 one. This is probably due to the presence of more older and female respondents in the former sample. Further, more respondents were employed in the market sector in 2000 than in 1991, which is consistent with the general trend. However, the 2000 sample captured a significantly smaller proportion of market sector employees than the Beijing average. In addition, the personal monthly income in 2000

Table 1 *Socioeconomic Characteristics of Respondents in Surveys 1991 and 2000*

Socioeconomic characteristics	Total (N = 1964)	1991 (N = 960)	2000 (N = 1004)
Gender (% men)	48.70	50.90	46.51*
Age (mean)	43.66	38.92	48.19***
Marital status (% married)	84.10	84.80	83.37
Employment status (%)			
Employed	72.20	95.60	49.00***
Retired	19.80	3.30	36.20
Unemployed	4.30	0.00	8.60
Others	3.70	1.10	6.30
Types of work organization (%)[a]			
State/collective enterprises	94.00	97.30	87.90***
Private enterprises	3.90	1.60	8.20
Joint ventures	2.10	1.10	3.90
Education (%)			
Junior high school or below	34.70	28.20	40.90***
Senior high school, three-year college	53.10	59.60	46.90
University or above	12.20	12.20	12.30
Personal monthly income (mean)[b]	–	205.38	1008.17

[a] Analysis based on employed respondents only.
[b] Significance test of group differences was not performed.
*** Comparison between 1991 and 2000 is statistically significant at $p < .001$.
** Comparison between 1991 and 2000 is statistically significant at $p < .01$.
* Comparison between 1991 and 2000 is statistically significant at $p < .05$.

is about five times that in 1991. To control for the potential confounding effect of the sample composition on the outcome measures, respondents' sociodemographic characteristics are included as control variables in the statistical analysis.

The article examines changes in the exposure to life stressors and social relations as well as corresponding changes in psychological well-being between 1991 and 2000. Mental health is operationalized as the level of psychological distress as reflected by the extent of self-reported depressive symptoms. It is measured by Lin's Chinese version of the Centre for Epidemiological Studies Depression (CES-D) Scale (Lin, 1989). The original CES-D Scale consists of 20 items and is designed to measure the current level of depressive symptomatology in community populations, with an emphasis on depression (Radloff, 1977). The components of the scale include depressed moods, feelings of guilt and worthlessness, feelings of helplessness and hopelessness, psychomotor retardation, loss of appetite and sleep disturbance. Four items are worded in the positive direction to avoid response set and to measure positive affect. Respondents are asked by the interviewer to indicate if they have had the feelings as expressed by the 20 items in the past week. The frequency of occurrence of the 20 symptoms is assessed, self-reportedly, on a four-point scale, ranging from 0 for rarely or none of the time to 3 for most or all of the time. Higher summated scores would thus indicate more depressive symptoms. High internal consistency, test–retest reliability and validity of the scale have been observed in various community samples in the US (Radloff, 1977; Lin et al., 1986) (columns 1 and 2 in Appendix 1). The scale has also been shown to be effective in measuring changes in symptoms over time (Weissman et al., 1977).

The Chinese version of the CES-D Scale consists of the 20 items in the original scale and six additional items (see Appendix 1, items 21 to 26) that are designed to capture the common idioms of psychiatric complaints that have originated in past unpleasant experiences and social relations. Lin's results from his Tianjin study (Lin, 1989) (column 3 in Appendix 1) show that the four positive items (see Appendix 1, items 4, 8, 12 and 16) substantially reduce the overall reliability of the scale whereas the inclusion of the six additional items increases the reliability. Further, both the 16-item scale (the original 20 items without the four positive items) and 22-item scale (the 16-item scale plus six new items) yield a similar factor structure to those found in the American communities. Lin recommends the use of the 22-item scale in place of the original 20-item scale for the Chinese populations (Lin, 1989). The results have been replicated by Lai (1995) in another study in urban Shanghai (column 4 in Appendix 1).

A similar validation has been conducted for our 1991 and 2000 data. The results are consistent with previous findings (columns 5 and 6 in

Appendix 1). The 22-item scale achieves high reliability in both samples (α = .93 for 1991 and α = .89 for 2000) and the alpha coefficients are also higher than those of the 16-item, 20-item and 26-item scales. The 22-item scale is thus adopted in the present study.

The concept, exposure to life stressors, is measured by the experience of a total of 11 life events that have happened to respondents in the past year. Significant life events pertaining to major life spheres, such as family, work, finance and health, are included in the list. However, the numbers and content of life events included in the 1991 and 2000 surveys are slightly different. Only the events that appeared in both surveys are included in the analysis. The life events included are: (1) law suits, (2) robbery or loss of valuable object, (3) loss of job or business failing, (4) family financial crisis, (5) arguments among family members, (6) serious physical illness, injury or accident, (7) family member had serious physical illness, injury or accident, (8) marital separation, divorce or ending of a serious relationship, (9) death of spouse, (10) death of a family member and (11) death of a close friend.

Measures of social relations include levels of satisfaction with relations with four major social groups in China, namely, family members, relatives, co-workers and neighbours. Because of the unique housing arrangements and low residential mobility in pre-reform China, urban residents often developed stable and intimate social relations with co-workers, who also tended to be neighbours (Ruan, 1993; Freeman and Ruan, 1997). The decline of the work-unit system and heightened residential mobility in the transition period, however, may alter the relationships with these two social groups (Shaw, 1996). Comparable data on the actual interaction patterns are not available. Satisfaction scores are used as proxy measures. Levels of satisfaction are assessed on a five-point scale, ranging from 1 (very dissatisfied) to 5 (very satisfied).

The inclusion of marital disruption as a life event and family satisfaction as a dimension of social relations arouses the suspicion that there may be a confounding relationship between the two measures. However, the bivariate correlation between marital disruption and family satisfaction is shown to be minimal (r = .05). Thus it is very unlikely that the two measures would cause bias to the subsequent results.

To control for the possible composition effect of the two samples on the outcome measures, statistical control of sociodemographic variables is needed. Relevant variables include sex, age, marital status, education, employment status and personal monthly income. Two dummy variables are constructed for sex (1 = men, 0 = women) and marital status (1 = married, 0 = non-married). Age is a self-reported continuous measure. Education consists of seven categories: (0) no formal schooling, (1) primary school, (2) junior high school, (3) senior high school, (4) three-year college,

(5) university (undergraduate degree) and (6) graduate school or above. The variable employment status originally consists of four categories: (1) employed, (2) retired, (3) unemployed and (4) others. Since the 1991 sample consists of no unemployed respondents and only a small number of respondents with employment status other than employed and retired, both unemployed and other employment status are combined to form one category. In the regression analysis, employment status is indicated by two dummy variables – retired and non-employed (including unemployed and others) – with 'employed' as the reference category. To account for inflation, personal monthly income is standardized for each year. The standardized income variable is then logged to control for the non-linear effect.

Descriptive Results

Comparisons of the study variables between 1991 and 2000 are presented in Table 2. Respondents in 2000 reported a significantly higher level of depressive symptomatology than their counterparts in 1991. The difference is about 1.8 fold (15.10 in 2000 vs 8.56 in 1991). Respondents in 2000 also experienced significantly more negative life events than did those in 1991. Further, in 1991, only about 30 percent of the respondents experienced one or more adverse life event in the past year. In 2000, the proportion increased to 56 percent and 10 percent of respondents reported three or more events. The report for all life events increased significantly except death of spouse and close friends. Increase in exposure to events related to finance, work and health is particularly noteworthy. On average, respondents in 2000 (mean = 0.98) reported more than twice as many stressful life events as those in 1991 (mean = 0.39). These findings are consistent with the general, aggregate description of contemporary urban China.

Nonetheless, readers are reminded that the wordings of four of the life event items differ slightly between 1991 and 2000, including (1) robbery, loss of valuable object, (2) loss of job/business failing, (3) serious physical illness, injury or accident and (4) family member had serious physical illness, injury or accident (see note to Table 2). One may suspect that this measurement difference may account for the percentage increase of respondents reporting each of the four events and the increase in the total number of life events in 2000. In other words, the quantitative increase in life events may actually reflect the qualitative difference in personal and family stress. However, when we compare the frequencies of the other life events between the two time periods, we also observe a similar increasing trend. Therefore we are confident that any possible bias in the results due to the measurement difference should be minimal.

The variation in psychological distress is slightly higher for the 2000 sample than that for the 1991 one (SD = 10.66 in 2000 vs SD = 10.10 in

Table 2 *Descriptive Statistics (Standard Deviations in Parentheses) of Study Variables*

Variables	1991 (N = 960)	2000 (N = 1004)
CESD-22 (mean)	8.56 (10.10)	15.10 (10.66)***
Experience with life events (%)		
Law suits	0.90 (9.64)	4.79 (21.37)***
Robbery[a], loss of valuable object	4.60 (20.92)	9.78 (29.72)***
Loss of job/business failing[a]	2.10 (14.29)	10.82 (31.08)***
Family financial crisis	5.00 (21.81)	19.12 (39.35)***
Arguments among family members	2.80 (16.54)	6.18 (24.09)***
Serious physical illness,[a] injury or accident	1.10 (10.65)	10.96 (31.25)***
Family member had serious physical illness, injury or accident[a]	9.30 (29.02)	17.58 (38.09)***
Marital separation/divorced/ ended a serious relationship	3.30 (17.96)	1.01 (10.01)***
Death of spouse	0.40 (6.45)	0.72 (8.43)
Death of a family member	2.70 (16.24)	8.19 (27.44)***
Death of a close friend	6.60 (24.78)	8.63 (28.09)
Number of life events (mean)	0.39 (0.72)	0.98 (1.17)***
Number of life events (%)***		
0	71.90	44.20
1	19.90	29.40
2	6.30	16.30
3	1.60	6.70
4 or more	0.40	3.40
Social relations (mean)		
Relations with family members	4.08 (0.73)	4.20 (0.66)***
Relations with relatives	3.68 (0.72)	3.72 (0.68)
Relations with co-workers	3.82 (0.68)	3.77 (0.67)
Relations with neighbours	3.45 (0.73)	3.60 (0.72)***

[a] Item not available in the 1991 survey.
*** Comparison between 1991 and 2000 is statistically significant at $p < .001$.
** Comparison between 1991 and 2000 is statistically significant at $p < .01$.
* Comparison between 1991 and 2000 is statistically significant at $p < .0$.

1991). There is also a greater variation in the experience of life stressors in 2000 than in 1991 (SD = 1.17 in 2000 vs SD = 0.72 in 1991). These findings suggest that over the 10-year period between 1991 and 2000, there is an increasing trend of social differentiation in stressful experience and mental health among Beijing residents.

However, from Table 2, no evidence can be found to show that the urban reforms have undermined social relations. The sample generally shows

no change in relations with relatives and co-workers, and slightly greater satisfaction with relations with family members and neighbours, compared with the results in 1991, despite the fact that about 35 percent of respondents in 2000 moved at least once after 1990. Having more freedom to move around, people might have moved to neighbourhoods of their choice and been able to establish better relations with their neighbours. In addition, as urban reforms were deepening in late 1990s, the extra-familial environment might have become more and more volatile. Individuals may have had to secure strong familial ties to withstand external stress aroused by keen market competition (Lai, 2001). Strong familial ties have been found to best serve the purpose of affirmation and maintenance of one's self, which in turn would improve one's mental health (Lin et al., 1986; House et al., 1988). The relationships with relatives and co-workers remain unchanged between 1991 and 2000.

In sum, the descriptive results show two major findings. First, Beijing residents have experienced more life stressors and a decline in psychological well-being over the 10-year period. Second, the quality of social relations has marginally improved, however. Two issues arise. First, what are the relative effects of life stressors and social relationships on psychological distress in 1991 and in 2000 respectively? Second, to what extent do exposure to life stressors and social relations explain the increase in depressive symptomatology during the study period? These issues are examined with multivariate analyses.

Multivariate Results

Three sets of regression analyses are performed to examine the impact of exposure to life stressors and social relations on psychological distress in urban Beijing. The first two sets of analyses pertain to the 1991 and 2000 samples respectively, whereas the third set refers to the combined sample. In each set of analyses, four equations are constructed to compare the relative effects of life stressors and social relations on psychological distress. Equation (I) is the baseline model with sociodemographic variables only. Equations (II) and (III) include life stressors and social relations in the baseline model respectively. Equation (IV) compares the relative effects of life stressors and social relations on psychological distress.

The regression results for the 1991 sample are presented in Table 3. The regression coefficients show that controlling for the sociodemographic variables, life stressors tend to increase depression symptoms (Equation II) whereas satisfactory social relations, particularly relations with family members and co-workers, would reduce the level of symptoms (Equation III). The life stressors variable alone doubles the amount of explained variance in depression (R^2 changes from .03 in Equation I to .06 in Equation

Table 3 *Regression[a] of Depressive Symptoms on Life Stressors, Social Relations and Socioeconomic Characteristics, 1991*

Predictors	I	II	III	IV
Number of life events	–	2.41 (.17)***	–	2.28 (.16)***
Social relations				
Family members	–	–	–1.43 (–.10)**	–1.21 (–.09)*
Relatives	–	–	–.79 (–.06)	–.78 (–.06)
Co-workers	–	–	–1.49 (–.10)**	–1.47 (–.10)**
Neighbours	–	–	–.89 (–.06)	–1.00 (–.07)*
Sociodemographic variables				
Sex (1 = men)	–.10 (–.01)	–.30 (–.02)	.18 (.01)	–.02 (–.001)
Age	–.14 (.15)***	–.13 (–.14)***	–.13 (–.14)***	–.13 (–.13)***
Marital status (1 = married)	–.30 (–.01)	.01 (.0001)	–.98 (–.03)	–.65 (–.02)
Education	–.55 (–.06)	–.70 (–.08)*	–.58 (–.06)	–.73 (–.08)*
Employment status (ref. employed)				
Retired	–1.30 (–.02)	–1.76 (–.03)	–1.1 (–.02)	–1.48 (–.03)
Others	4.42 (.04)	3.65 (.04)	3.75 (.04)	3.04 (.03)
Personal monthly income (standardized and logged)	.20 (.003)	–.27 (–.004)	.82 (.01)	.40 (.01)
Intercept	16.19***	15.38***	33.65***	32.26***
R^2	.03	.06	.08	.10
N	935	935	928	928

[a] Standardized regression coefficients are enclosed in parentheses.
***$p < .001$; **$p < .01$; *$p < .05$.

II) and the four social relations variables nearly triple the amount (R^2 changes from .03 in Equation I to .08 in Equation III). When both life stressors and social relations are included in the equation (Equation IV), their independent effects on depression remain significant and in the expected directions. However, the standardized regression coefficients indicate that life stressors are more important than social relations in affecting mental health. Further, the effect of relations with co-workers is marginally greater than the effects of other types of social relations. This corroborates previous findings that the work-unit system in China has promoted the importance of co-workers in urban social life (Ruan, 1993; Freeman and Ruan, 1997). The variables in Equation IV explain a total of 10 percent of the variance in depressive symptoms ($R^2 = .10$).

Table 4 presents results for the 2000 sample, which show similar patterns with the 1991 survey. Controlling for the sociodemographic variables, both life stressors and social relations exert significant effects on the mental health measure. The two sets of variables contribute, respectively, an additional 7 and 13 percent of explained variance in depressive symptoms (Equations II and III). Again, the relations with family and co-workers are more important. The independent effects of life stressors and social relations remain unchanged when both sets of variables are included in the same equation (Equation IV). Similar to the findings for 1991, life stressors tend to play a more important role than social relations in affecting mental health in 2000, as indicated by the standardized regression coefficients. The variables in Equation IV explain a total of 22 percent of variance in depressive symptoms.

To investigate the extent to which life stressors and social relations explain the differences in depressive symptoms between 1991 and 2000, regression analyses are performed on the combined sample with a dummy variable indicating the year of study (0 = 1991 and 1 = 2000). Results are displayed in Table 5. Equation I shows that controlling for sample variations in sociodemographic characteristics, respondents in 2000 show a significantly higher level of depressive symptomatology ($b = 6.99$). Separate assessments of the independent health effects of life stressors and social relations (Equations II and III) reveal that both the total number of life events and satisfaction with social relations (except with relatives) provide significant additional explanatory power for the mental health outcome. The R^2 values in Equations II and III show that the amounts of additional explained variance contributed by the two sets of variables concerned are 5 percent and 7 percent respectively. Further, the addition of life stressors explains away about one-point difference in depressive symptoms between 1991 and 2000 (the unstandardized regression coefficient in Equation I is 6.99 whereas that in Equation II is 6.01). While social relations have significant explanatory power for the

Table 4 *Regression[a] of Depressive Symptoms on Life Stressors, Social Relations and Socioeconomic Characteristics, 2000*

Predictors	I	II	III	IV
Number of life events	–	2.55 (.28)***	–	1.90 (.21)***
Social relations				
Family members	–	–	–3.80 (–.23)***	–3.33 (–.20)**
Relatives	–	–	–.40 (–.03)	–.12 (–.01)
Co-workers	–	–	–2.83 (–.18)***	–2.75 (–.17)***
Neighbours	–	–	–.89 (–.06)	–.77 (–.05)
Sociodemographic variables				
Sex (1 = men)	–.95 (–.04)	–1.21 (–.06)	–.94 (–.04)	–1.08 (–.05)
Age	–.11 (–.15)**	–.12 (–.16)***	–.11 (–.15)**	–.12 (–.16)***
Marital status (1 = married)	.52 (.02)	.32 (.01)	.25 (.01)	.12 (.004)
Education	–.24 (–.03)	–.29 (–.04)	–.35 (–.04)	–.37 (–.04)
Employment status (ref. employed)				
Retired	–.70 (–.03)	–.29 (–.01)	–.43 (–.02)	–.08 (–.004)
Others	1.78 (.06)	1.61 (.05)	.60 (.02)	.31 (.01)
Personal monthly income (standardized and logged)	–1.35 (.04)	.32 (.01)	–2.81 (–.08)*	–1.44 (–.04)
Intercept	21.02***	19.20***	52.92***	47.90***
R^2	.05	.12	.18	.22
N	939	939	876	

[a] Standardized regression coefficients are enclosed in parentheses.
***$p < .001$; **$p < .01$; *$p < .05$.

Table 5 *Regression[a] of Depressive Symptoms on Life Stressors, Social Relations and Socioeconomic Characteristics – Combined Sample*

Predictors	I	II	III	IV
Year of study (1 = 2000)	6.99 (.32)***	6.01 (.28)***	6.96 (.32)***	6.13 (.28)***
Number of life events	–	2.50 (.23)***	–	2.08 (.19)***
Social relations				
Family members	–	–	–2.46 (–.16)***	–2.15 (.14)***
Relatives	–	–	–.48 (–.03)	–.34 (–.02)
Co-workers	–	–	–2.11 (–.13)***	–2.05 (–.13)***
Neighbours	–	–	–.96 (–.06)**	–.96 (–.06)**
Sociodemographic variables				
Sex (1 = men)	–.51 (–.02)	–.74 (–.03)	–.23 (–.01)	–.42 (–.02)
Age	–.13 (–.16)***	–.13 (–.16)***	–.12 (–.15)***	–.12 (–.15)***
Marital status (1 = married)	.09 (.003)	.12 (.004)	–.44 (–.01)	–.32 (–.01)
Education	–.43 (–.05)	–.52 (–.06)*	–.48 (–.06)*	–.55 (–.06)**
Employment status (ref. employed)				
Retired	–.55 (–.02)	–.40 (–.02)	–.16 (–.01)	–.03 (–.001)
Others	1.95 (.05)	1.56 (.04)	1.37 (.03)	.80 (.02)
Personal monthly income (standardized and logged)	–.87 (.03)	.32 (.01)	–1.79 (–.05)	–.72 (–.02)
Intercept	15.42***	14.37***	39.27***	36.35***
R^2	.12	.17	.19	.23
N	1874	1874	1804	1804

[a] Standardized regression coefficients are enclosed in parentheses.
***$p < .001$; **$p < .01$; *$p < .05$.

mental health measure, the variables are not able to account for the different levels of depressive symptomatology in the two years (the unstandardized regression coefficients are 6.99 in Equation I and 6.96 in Equation III). Joint assessment (Equation IV) further confirms the independent effects of life stressors and social relations, with the former playing a more important role than the latter. Controlling for the effects of the study variables, the difference in depressive symptoms between 1991 and 2000 is reduced to 6.13, which is 0.41 less than the mean difference (6.54, see Table 2). Taking together the four equations, the findings suggest that the increase in depressive symptoms between 1991 and 2000 can be partly explained by the increase in exposure to life stressors.

Discussion and Conclusion

The present study has attempted to examine the change in mental health status among urban Beijing residents between 1991 and 2000. Our findings suggest that as urban reforms have taken place at great speed in the past decade or so, a price is being paid at the expense of urban residents' health. Results from the two community surveys conducted in 1991 and 2000 further reveal that urban Beijing residents experienced greater life stress and a decline in psychological well-being during the 10-year period. The rapid social changes associated with the urban reforms might have caused adjustment problems among Beijing residents. Scholars have noted that the market reforms have produced a new social stratification order, which favours individuals with human, social and political capital (Han and Morishima, 1992; Zhou, 2000), and marginalizes those without, resulting in increasing economic polarization in the city (Khan et al., 1999). Having been accustomed to receiving state provisions, urban residents now have to adjust to increasing competition in the labour market, financial insecurity and even downward social mobility (Liu, 1998; Huang, 1999). When individuals fail to adjust, stress may result (*Shing Pao*, 1998).

However, no evidence has been found for social breakdown during the study period. Social relations in the Chinese cities seem to withstand rapid social changes. Particularly, family relations and relations with co-workers have actually improved over the years, though marginally. As suggested by Lai (1995), the volatile and competitive extra-familial environment in the reform era might have strengthened the need for better family relations so that individuals would be able to draw resources from them to cope with various social demands. The freedom to change jobs also allows individuals to leave workplaces where they experience interpersonal conflicts, thus improving the assessment of relations with co-workers.

The three sets of multivariate analyses have generated four other major findings. First, in the separate as well combined samples, both life

stressors and social relations have independent effects on mental health. Our cross-sectional survey data in 1991 and 2000 consistently indicate that, as expected, life stressors increase while satisfactory social relations decrease the level of depressive symptoms. These findings are consistent with many previous studies (e.g. Lin et al., 1986; Pearlin, 1989; Aneshensel, 1992; Thoits, 1995; Turner, 2000). Further, life stressors tend to have a greater effect than social relations in affecting the mental health of Beijing residents both in 1991 and in 2000.

Second, the increase in psychological distress between 1991 and 2000 can be partly explained by greater exposure to life stressors in the latter year, while social relations only marginally affect the change in depressive symptomatology. It is probably due to the substantial increase in stressful life events but little change in social relations experienced by respondents in 1991 and 2000 (Table 2). The minimal change in social relations corroborates the argument that although urban development may reduce face-to-face interactions with primary groups, ties with close kin, particularly members of the nuclear family, tend to remain important (Höllinger and Haller, 1990; Freeman and Ruan, 1997; Lai, 2001).

Third, while the effect of life stressors on psychological distress remains relatively stable between 1991 and 2000, the protective function of social relations, particularly relations with family and co-workers, has gained importance. The unstandardized regression coefficients in Tables 3 and 4 indicate that the impacts of relations with family and co-workers on psychological distress have doubled over the 10-year period. The gap in the magnitude of standardized coefficients of life stressors and social relations has reduced between 1991 (R^2 = .10) and 2000 (R^2 = .22). Economic polarization and increasing social competition may be important sources of stress among urban residents, and thus intensify the positive effects of social relations.

Fourth, while relations with co-workers exert significant effects on psychological distress both in 1991 and in 2000, the effect of family relations relative to that of relations with co-workers is greater in 2000 than in 1991, as indicated by the standardized regression coefficients (Tables 3 and 4). This suggests that the importance of co-workers has declined along with the collapse of the work-unit system. Employees of the same organization no longer have to live in the same housing compound or neighbourhood as work organizations gradually withdraw their responsibility of providing free housing to their employees. Individuals can also purchase private housing if they can afford it (Logan et al., 1999). In contrast, the family becomes the emotional shelter for urban residents.

In sum, the present study reveals that during the last 10 years of urban reforms, Beijing residents have experienced a substantial increase in social stress. Fortunately, the family and co-workers still maintain their protective functions; otherwise, more serious mental health problems might

have been observed. As the economic reforms have caused great changes in the economic and social structures in the Chinese cities, future studies are needed to further investigate and identify the specific ways in which these changes affect the structure of interpersonal relations and how the changing structure remains functional to provide psychological benefits to the urban Chinese. Further, the present study has focused on one Chinese city, i.e. Beijing, which is the capital of China. Replications of the findings in other Chinese cities are warranted.

Nevertheless, it should be noted that a large part of the mental health difference between the two study years is still left unexplained. One possible reason is that the measures of life stressors may not have captured the relevant events or conditions that cause psychiatric problems during the reform era. Because of increasing competition and rising unemployment in the labour market (Liu, 1998; *Apple Daily*, 1999), workers may experience great anxiety about job security (Solinger, 2002). Further, increasing economic differentiation among the Chinese population (Qian and Wong, 2000) may also generate the anomie gap between individual aspirations and available means to achieve the goals (Merton, 1938). However, such stress-producing conditions are left out in the present study. Another possible reason is that respondents in 2000 may be more willing to report their mental health problems than their counterparts in 1991. The aftermath of the Tiananmen Incident in 1989 (two years prior to the 1991 study) might have deterred Beijing residents from freely expressing their emotional problems as such expression could be easily mistaken as discontent with the central government and wrongly associated with political implications. This may also explain why the study variables tend to provide a better explanation of depressive symptomatology in 2000 than in 1991. However, unfortunately, there is no way to tease out the effect of reporting bias from that of the study variables. It is hoped that future studies would provide an appropriate measure of reporting bias.

Acknowledgements

The study is partly supported by a grant from the Research Grants Council of Hong Kong Special Administrative Region (Project No. CUHK4135/99H). We would like to thank Professor Nan Lin of Duke University for his permission to use the 1991 Beijing data. For collecting the 2000 survey data in Beijing, we wish to thank the assistance of Professors Bin Lin and Dehuan Liu of Peking University and Professor Dahai Hao of Remin University of China. An earlier version was presented at the 2002 Asia Pacific Sociological Association Conference, 4–7 July 2002, Brisbane, Australia. Direct all correspondence to the first author.

Appendix 1 *Cross-Studies Comparisons of Depressive Symptom Scales*[a]

	(1) Albany 1979[b] (Lin et al., 1986)	(2) Albany 1980[c] (Lin et al., 1986)	(3) Tianjin 1985[d] (Lin, 1989)	(4) Shanghai 1987[e] (Lai, 1995)	(5) Beijing 1991[f]	(6) Beijing 2000[g]
Mean						
1. Bothered	–	–	0.47	0.74	0.65	1.00
2. No appetite	–	–	0.67	0.49	0.59	0.91
3. Blues	–	–	0.28	0.36	0.42	0.88
4. Just as good[h]	–	–	2.21	1.53	1.55	0.72
5. Hard to concentrate	–	–	0.60	0.79	0.61	0.94
6. Depressed	–	–	0.29	0.45	0.40	0.78
7. Everything an effort	–	–	0.50	0.95	0.44	1.34
8. Hopeful[h]	–	–	1.29	1.34	1.43	0.94
9. Failure	–	–	0.24	0.36	0.30	0.48
10. Fearful	–	–	0.09	0.15	0.18	0.32
11. Restless sleep	–	–	0.66	0.74	0.65	0.97
12. Happy[h]	–	–	0.87	1.21	1.34	0.91
13. Talk less	–	–	0.48	0.50	0.46	0.84
14. Lonely	–	–	0.19	0.18	0.29	0.57
15. People unfriendly	–	–	0.11	0.14	0.26	0.43
16. Life meaningful[h]	–	–	0.82	1.14	1.30	0.58
17. Crying spells	–	–	0.09	0.09	0.17	0.26
18. Sad	–	–	0.15	0.16	0.21	0.44
19. People dislike me	–	–	0.10	0.11	0.22	0.38
20. Can't get going	–	–	0.24	0.41	0.37	0.67
21. No chance to talk	–	–	0.46	0.60	0.63	0.94
22. Feeling suffocated	–	–	0.26	0.37	0.40	0.67
23. Others don't trust me	–	–	0.06	0.14	0.18	0.40
24. Suspicious of others	–	–	0.13	0.16	0.24	0.47
25. Can't trust others	–	–	0.35	0.44	0.35	0.68
26. Remembering unhappy past	–	–	0.69	0.68	0.54	0.96
Sum of 16 items[i]	–	–	5.12	6.56	6.21	11.07
Sum of 20 items	8.60	8.70	10.30	11.80	11.83	13.89
Sum of 22 items[j]	–	–	7.07	8.94	8.56	15.10
Sum of 26 items	–	–	12.25	14.18	14.17	17.91
Reliability (α)						
16 items	–	–	0.86	0.85	0.90	0.85
20 items	0.89	0.90	0.77	0.79	0.82	0.85
22 items	–	–	0.90	0.89	0.93	0.89
26 items	–	–	–	0.84	0.87	0.88

– Indicates information not available.

[a] Each item is measured on a four-point scale, ranging from 0 for rarely or none of the time to 3 for most or all of the time.

[b] 1091 adults aged 18–70 years old.

[c] 871 adults aged 18–70 years old.

[d] 1000 adults aged 18 or above.

[e] 733 employed and married adults aged 18–60 years old.

[f] 960 adults aged 18–96 years old who resided in the same urban districts as the respondents in year 2000.

[g] 1004 adults aged 18–84 years old.

[h] Scores reversed.

[i] Sum of the first 20 items, excluding the four positive items (items 4, 8, 12, 16).

[j] Sum of all items, excluding the four positive items (items 4, 8, 12, 16).

References

Abramson, D. B. (1997) '"Marketization" and Institutions in Chinese Inner-City Redevelopment: A Commentary on Lü Junhua's *Beijing's Old and Dilapidated Housing Renewal*', *Cities* 14: 71–5.

Aneshensel, C. S. (1992) 'Social Stress: Theory and Research', *Annual Review of Sociology* 18: 15–38.

Aneshensel, C. S. and Phelan, J. C., eds (1999) *Handbook of the Sociology of Mental Health*. New York: Kluwer Academic/Plenum Publishers.

Apple Daily (1999) '180 Million Chinese Workers Dismissed', 3 March (in Chinese).

Bakken, B. (2000) *The Exemplary Society: Human Improvement, Social Control, and the Dangers of Modernity in China*. New York: Oxford University Press.

Beijing Municipal Public Health Bureau (2002) *Beijing Public Health Yearbook 2001*. Beijing: Beijing Science and Technology Press.

Beijing Municipal Statistical Bureau (1992) *Beijing Statistical Yearbook 1992*. Beijing: China Statistical Press.

Beijing Municipal Statistical Bureau (2001) *Beijing Statistical Yearbook 2001*. Beijing: China Statistical Press.

Bian, Y. (1994) *Work and Inequality in Urban China*. Albany: State University of New York Press.

Bott, E. (1971) *Family and Social Network*, 2nd edn. New York: Free Press.

Brenner, M. H. (1973) *Mental Illness and the Economy*. Cambridge, MA: Harvard University Press.

Brenner, M. H. (1987) 'Economic Change, Alcohol Consumption and Disease Mortality in Nine Industrialized Countries', *Social Science and Medicine* 25: 119–32.

Catalano, R. and Dooley, C. D. (1977) 'Economic Predictors of Depressed Mood and Stressful Life-Events in a Metropolitan Community', *Journal of Health and Social Behavior* 18: 292–307.

Chen, L. C., Kleinman, A. and Ware, N. C., eds (1994) *Health and Social Change in International Perspective*. Boston, MA: Department of Population and International Health, Harvard School of Public Health.

Chen, S. (2002) 'The Social Problems of the Economic State: Historical Roots and Future Directions', *China Report* 38: 193–214.

Chow, G. C. (2002) *China's Economic Transformation*. Malden, MA: Blackwell.

Chow, M. W. S. (2000) *Socialist Welfare with Chinese Characteristics: The Reform of the Social Security Systems in China*. Hong Kong: Centre of Asian Studies, The University of Hong Kong.

Davis, D. (1992) 'Job Mobility in Post-Mao Cities: Increases on the Margins', *The China Quarterly* 132: 1062–85.

Durkheim, E. (1951) *Suicide*. New York: The Free Press.

Fan, F. M. (1998) 'The Psychological State and Coping of Laid-Off Workers During the Period of Social Transitions', *Market and Demographic Analysis* 4: 4–10 (in Chinese).

Faris, R. E. L. and Dunham, H. W. (1939) *Mental Disorders in Urban Areas*. Chicago, IL: University of Chicago Press.

Fenwick, R. and Tausig, M. (1994) 'The Macroeconomic Context of Job Stress', *Journal of Health and Social Behavior* 35: 266–82.
Findley, S. E. (1988) 'The Directionality and Age Selectivity of the Health-Migration Relation: Evidence from Sequences of Disability and Mobility in the United States', *International Migration Review* 22: 4–29.
Freeman, L. C. and Ruan, D. (1997) 'An International Comparative Study of Interpersonal Behavior and Role Relationships', *L'Année Sociologique* 47: 89–115.
Groves, T., Hong, Y., McMillan, J. and Naughton, B. (1995) 'China's Evolving Managerial Labor Market', *Journal of Political Economy* 103: 873–92.
Gu, C. and Liu, J. (2002) 'Social Polarization and Segregation in Beijing', in J. R. Logan (ed.) *The New Chinese City: Globalization and Market Reform*, pp. 198–211. Oxford: Blackwell.
Han, J. and Morishima, M. (1992) 'Labor System Reform in China and its Unexpected Consequences', *Economic and Industrial Democracy* 13: 233–61.
Höllinger, F. and Haller, S. (1990) 'Kinship and Social Networks in Modern Societies: A Cross-Cultural Comparison among Seven Nations', *European Sociological Review* 6: 103–24.
House, J. S., Umberson, D. and Landis, K. R. (1988) 'Structures and Processes of Social Support', *Annual Review of Sociology* 14: 293–318.
Huang, S. (1999) 'Characteristics of the Unemployed Group and the Supporting Network for Them', *Journal of Sun Yatsen University (Social Science Edition)* 39: 55–62 (in Chinese with an English abstract).
Kazer, W. (2000) '5m Mainlanders to Lose Jobs', *South China Morning Post* 8 March; at: www.scmp.com/News/Template/PrintArticle.asp
Khan, A. R., Griffin, K. and Riskin, C. (1999) 'Income Distribution in Urban China during the Period of Economic Reform and Globalization', *The American Economic Review* 89: 296–300.
Kwan, D. (2000) '12 Million to Lose Jobs', *South China Morning Post* 11 January; at: www.scmp.com/News/Template/PrintArticle.asp
Lai, G. (1995) 'Work and Family Roles and Psychological Well-Being in Urban China', *Journal of Health and Social Behaviour* 36: 11–37.
Lai, G. (2001) 'Social Support Networks in Urban Shanghai', *Social Network* 371: 73–85.
Lauer, R. (1974) 'Rate of Change and Stress', *Social Force*s 52: 510–16.
Leighton, D. C., Harding, J. S., Macklin, D. B., MacMillan, A. M. and Leighton, A. H. (1963) *The Character of Danger: Psychiatric Symptoms in Selected Communities*. New York: Basic Books.
Li, S. M. and Siu, Y. M. (2001) 'Commodity Housing Construction and Intra-Urban Migration in Beijing: An Analysis of Survey Data', *Third World Planning Review* 23: 39–60.
Lin, K. M., Kleinman, A. and Lin, T. Y. (1981) 'Overview of Mental Disorders in Chinese Cultures: Review of Epidemiological and Clinical Studies', in A. Kleinman and T.Y. Lin (eds) *Normal and Abnormal Behavior in Chinese Culture*, pp. 233–6. Dordrecht: D. Reidel.
Lin, N. (1989) 'Measuring Depressive Symptomatology in China', *Journal of Nervous and Mental Disease* 177: 121–31.

Lin, N., Dean, A. and Ensel, W. (1986) *Social Support, Life Events, and Depression*. Orlando, FL: Academic Press.

Liu, J. (1998) 'The Manifestation of Hidden Unemployment and Urban Poverty', *Northwest Population Journal* 2: 7–8 (in Chinese).

Logan, J. R., Bian, Y. and Bian, F. (1999) 'Housing Inequality in Urban China in the 1990s', *International Journal of Urban and Regional Research* 23: 7–25.

Long, H. (1999) 'Beijing is Finding Ways to Help Laid-Off Workers to Live Through the Chinese New Year', *Hong Kong Economic Journal* 28 January: 19 (in Chinese).

Lü, J. (1997) 'Beijing's Old and Dilapidated Housing Renewal', *Cities* 14: 59–69.

Maurer-Fazio, M. (1995) 'Building a Labor Market in China', *Current History* 94: 285–9.

Meertens, V., Scheepers, P. and Tax, B. (2003) 'Depressive Symptoms in the Netherlands 1975–1996: A Theoretical Framework and an Empirical Analysis of Socio-Demographic Characteristics, Gender Differences and Changes Over Time', *Sociology of Health and Illness* 25: 208–31.

Merton, R. K. (1938) 'Social Structure and Anomie', *American Sociological Review* 3: 672–82.

Mirowsky, J. (1996) 'Age and the Gender Gap in Depression', *Journal of Health and Social Behavior* 37: 362–80.

Mirowsky, J., Ross, C. E. and Reynolds, J. (2000) 'Links between Social Status and Health Status', in C. E. Bird, P. Conrad and A. M. Fremont (eds) *Handbook of Medical Sociology*, pp. 47–67. Englewood Cliffs, NJ: Prentice-Hall.

Pearlin, L. I. (1989) 'The Sociological Study of Stress', *Journal of Health and Social Behavior* 34: 363–80.

Qian, Z. and Wong, T. C. (2000) 'The Rising Urban Poverty: A Dilemma of Market Reforms in China', *Journal of Contemporary China* 9: 113–25.

Radloff, L. S. (1977) 'The CES-D Scale: A Self-Report Depression Scale for Research in the General Population', *Applied Psychological Measurement* 1: 385–401.

Rosenthal, E. (1998) 'In China, 35+ and Female = Unemployable', *The New York Times* 13 October; at: www.nytimes.com/library/world/asia/101398chinawomen-workers.html.

Rozelle, S., Taylor, J. E. and deBrauw, A. (1999) 'Migration, Remittances, and Agricultural Productivity in China', *American Economic Review* 89: 287–91.

Ruan, D. (1993) 'Interpersonal Networks and Workplace Controls in Urban China', *The Australian Journal of Chinese Affairs* 29: 89–105.

Sabin, L. (1994) 'New Bosses in the Workers' State: The Growth of Non-State Sector Employment in China', *The China Quarterly* 140: 944–70.

Schlack, R. F. (1989) 'Economic Change in the People's Republic of China: An Institutionalist Approach', *Journal of Economic Issues* 23: 155–88.

Schwab, J. and Schwab, M. E. (1978) *Sociocultural Roots of Mental Illness: An Epidemiological Survey.* New York: Plenum.

Shaw, V. N. (1996) *Social Control in China: A Study of Chinese Work Units*. Westport, CT: Praeger.

Shing Pao (1998) 'Female Laid-Off Workers Have No Income and Suffer from a Decline in Social Status', *Shing Pao* 5 September (in Chinese).

Situ, Y. and Liu, W. (1996) 'Transient Population, Crime, and Solution: The Chinese Experience', *International Journal of Offender Therapy and Comparative Criminology* 40: 293–9.
Siu, Y. M. and Liu, J. (1997) 'Housing in Beijing: The Influence of the Work Unit (Danwei)', Paper presented at the International Symposium on Marketization of Land and Housing in Socialist China, Hong Kong, 31 October–1 November (in Chinese).
Solinger, D. J. (1995) 'The Chinese Work Unit and Transient Labor in the Transition from Socialism', *Modern China* 21: 155–83.
Solinger, D. J. (2002) 'Labour Market Reform and the Plight of the Laid-Off Proletariat', *The China Quarterly* 170: 304–26.
State Statistical Bureau (1992) *China Statistical Yearbook 1992*. Hong Kong: International Centre for the Advancement of Science and Technology.
State Statistical Bureau (2001) *China Statistical Yearbook 2001*. Hong Kong: International Centre for the Advancement of Science and Technology.
Thoits, P. A. (1995) 'Stress, Coping, and Social Support Processes: Where are We? What Next?', *Journal of Health and Social Behavior* extra issue: 53–79.
Turner, R. J. (2000) 'Social Support and Coping', in A. V. Horwitz and T. L. Oscheid (eds) *A Handbook for the Study of Mental Health*, pp. 198–210. Cambridge: Cambridge University Press.
Walder, A. (1986) *Communist Neo-Traditionalism: Work and Authority in Chinese Industry*. Berkeley: University of California Press.
Walder, A. (1992) 'Workers, Managers, and the State: The Reform Era and the Political Crisis of 1989', *The China Quarterly* 131: 467–92.
Wallace, A. (1970) *Culture and Personality*, 2nd edn. New York: Random House.
Watson, A., ed. (1992) *Economic Reform and Social Change in China*. London and New York: Routledge.
Weissman, M. M., Sholomskas, D., Pottenger, M., Prusoff, B. A. and Locke, B. Z. (1977) 'Assessing Depressive Symptoms in Five Psychiatric Populations: A Validation Study', *American Journal of Epidemiology* 106: 203–14.
Wirth, L. (1938) 'Urbanism as a Way of Life', *American Journal of Sociology* 44: 1–24.
Wong, L. and Flynn, N., eds (2001) *The Market in Chinese Social Policy*. New York: Palgrave.
Yeh, E. K. (1985) 'Sociocultural Changes and Prevalence of Mental Disorders in Taiwan', in W. S. Tseng and D. Y. H. Wu (eds) *Chinese Culture and Mental Health*, pp. 265–86. Orlando, FL: Academic Press.
Zhou, X. (2000) 'Economic Transformation and Income Inequality in Urban China: Evidence from Panel Data', *American Journal of Sociology* 105: 1135–74.

Biographical Note: Gina Lai is associate professor, Department of Sociology, Hong Kong Baptist University. Her research interests are the areas of social networks, mental health and gender studies.
Address: Department of Sociology, Hong Kong Baptist University, Kowloon Tong, Hong Kong. [email: ginalai@hkbu.edu.hk]

Biographical Note: Rance P. L. Lee is professor and chairman, Department of Sociology, the Chinese University of Hong Kong. Current research interests include medical pluralism and Chinese culture, and social structure and mental health.

Address: Department of Sociology, The Chinese University of Hong Kong, Shatin, NT, Hong Kong. [email: rancelee@cuhk.edu.hk]