Routledge
Taylor & Francis Group

An Empirical Evaluation of Social Support and Psychological Well-being in Older Chinese and Korean Immigrants

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Objectives. *To examine, among older Chinese and Korean immigrants: (1) the concept and measurement of perceived social support; (2) levels of social support and psychological well-being by living arrangement; and (3) whether social support is positively related to psychological well-being.*

Design. *A convenience sample of 200 self-identified Chinese and Koreans, aged 65 years and older, were interviewed. Psychometric analysis was conducted to examine the reliability and validity of a new social support measure. Bivariate and multivariate analyses were used to examine the relationship between social support and psychological well-being.*

Results. *Factor analysis revealed a four-factor solution of social support and adequate psychometrics of all social support scales was found. Multivariate results suggest that Koreans have more depression than Chinese ($p < 0.01$). Those who lived with their spouse and adult children had lower overall psychological well-being ($p < 0.05$) and lower positive affect ($p < 0.05$) compared to those who lived alone. Having more emotional/companionship support significantly ($p < 0.001$) contributed to better overall psychological well-being, having less depression and higher positive affect.*

Conclusions. *A new multidimensional social support measure for use with older Chinese and Koreans could be useful upon further validation. These results suggest that older Chinese and Koreans' psychological well-being may be negatively affected when they live*

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with their adult children. More depression in Koreans may be related to difficulties in expanding their social network beyond Korean-speaking people.

Introduction

Asian Americans and Pacific Islanders (API) in the USA are projected to more than triple, from 10.9 million in 1999 to 37.6 million in 2050 (US Census Bureau 2001), with those aged 65 years and older projected to grow to 15%, or 5.4 million, of the total API population (US Census Bureau 2000b, c). Chinese and Korean ethnic groups grew by more than 30%, with older Chinese and Koreans accounting for 18 and 13%, respectively, of these different Asian ethnic groups. According to Census 2000, most older Chinese and Koreans are foreign born (US Census Bureau 2001).

Research on social support and its relationship to health and well-being in older ethno-cultural groups has focused on African Americans and Latinos (Ball *et al*. 1980; Palmore 1981; Glass *et al*. 1997). Although there is less research on social support and well-being among different older Asian ethnic groups, most studies including older Asians have been done either as an aggregated group (Taylor *et al*. 2004) or with the Chinese (Hwang *et al*. 2000; Chou & Chi 2001; Abe-Kim *et al*. 2002; Chappell 2003; Seeman *et al*. 2004). Hwang *et al*. (2000) report that Chinese Americans who become depressed were more likely to have experienced decreases in social support. Social support deterioration as a result of stress has also been found to occur in a community sample of Chinese Americans (Lin *et al*. 1979). The majority of studies on Chinese and Chinese Americans indicate that social support is associated with better mental health either directly or indirectly (Lin *et al*. 1979; Kuo & Tsai 1986; Bagley 1993; Krause & Liang 1993; Lu 1995; Hwang *et al*. 2000; Chou & Chi 2001; Abe-Kim *et al*. 2002).

There is evidence to suggest that Asian Americans, including Chinese and Koreans, are less likely to use their social support networks for coping with stress when compared to non-Latino whites (Shin 2002; Taylor *et al*. 2004). Chappell (2003) found that when Chinese Americans do ask for help in emergency situations, it is typically the adult children. Although, the presence of family conflict, for Chinese Americans, was the strongest predictor of help-seeking for medical and mental health services (Abe-Kim *et al*. 2002). Nonetheless, social support is known to have salutary effects on physical health and psychological well-being (Kaplan *et al*. 1977; Levitt *et al*. 1985; Thoits 1985; House *et al*. 1988; Cohen *et al*. 2000). The availability of someone to provide help or emotional support may protect individuals from some of the negative consequences of major illness or stressful situations (Sherbourne & Stewart 1991). Older adults who have supportive social networks tend to enjoy better physical and mental health compared with those without (Berkman 1984; House & Landis 1988; Krause 2002).

Continued social support research in older Chinese and Koreans is needed for at least three reasons. First, findings from other diverse groups indicate that support exchanges take place within the context of social network ties, which are long-standing and based on shared histories (Berkman & Glass 2000). Second, the majority of older Chinese and Koreans living in the USA are foreign born (US Census Bureau 2000a), with a majority living in non-English-speaking monolingual households (linguistically isolated). Among non-English-speaking households, Chinese and Koreans have high rates of linguistic isolation—41 and 53%, respectively (US Census Bureau 1993). Finally, in both Chinese and Korean cultures, adult children still play a vital role in supporting their aging parents (Sung 2000). The cultural context of filial piety, the extent to which adult children are expected to obey and respect their parents, support their parents in old age and give priority to their parents' needs over their own (Ishii-Kuntz 1997), remains a dominant cultural value for older Chinese and Koreans living in the USA when compared to non-Latino whites (Taylor *et al*. 2004). However, with increased dispersion of adult children living apart from their parents, older Chinese and Korean US immigrants are modifying their expectations of social support from their adult children while searching for alternative ways to gain needed support (Wong *et al*. 2006). What remains unknown is how this shift in family support affects their well-being.

The purpose of this study was to examine the relationship between social support and psychological well-being among older Chinese and Koreans. We began by developing a new measure of perceived social support for this population. We then examined: (1) levels of social support and psychological well-being by living arrangement; and (2) whether social support is positively related to psychological well-being.

Background

Social support among older Chinese and Koreans

Social support refers to the social resources that individuals perceive to be available or that are actually provided to them by nonprofessionals in the context of both formal support groups and informal helping relationships (Cohen *et al*. 2000). It is typically defined in terms of several functional domains, that is, the degree to which interpersonal relationships serve particular functions (Sherbourne & Stewart 1991). The functions most often cited are: emotional (having a person express sympathy, caring and acceptance of the individual), instrumental aid or tangible (the provision of financial resources, household goods, transportation, and assistance with cooking, cleaning and shopping), information/advice, companionship (having a person with whom to share activities such as going to movies, eating together and shopping) and validation or a person who gives the individual feedback about him/herself (Cohen *et al*. 2000). In a previous study, we have also identified older Chinese and Koreans needing language support (Wong *et al*. 2005). Psychological well-being refers to positive and negative affective states such as feeling happy, peaceful, anxious or depressed (Dupuy 1984; Stewart *et al*. 1992b).

Older Chinese and Koreans describe their actual sources of support in terms of the types of support each relationship can offer (Wong *et al.* 2005). The reliance on immediate family, for many Asian cultures, is based on the fundamental relatedness of individuals to each other by emphasizing attending to others, fitting in and harmonious interdependence (Okabayashi *et al.* 2004; Taylor *et al.* 2004). Past studies have revealed that older Chinese and Koreans tend to have smaller numbers of actual sources of support compared to other ethnic groups and that there is a tendency to turn first to their adult children (Lubben & Becerra 1987; Wong *et al.* 2005). Older Koreans tend to rely on their adult children more than their Chinese counterparts, in part, due to fewer and less well-established Korean communities (Wong *et al.* 2005). Kaugh (1999) reported that older Koreans rarely interact with non-Koreans, obtaining many services through ethnic community agencies or churches rather than seeking them directly from formal service agencies. Older Koreans, in particular, may also face additional challenges related to immigrating to the USA later in life, expecting their adult children to provide support because of the principle of filial piety but instead, experience language barriers to needed services and cultural discontinuity (Lee *et al.* 1995; Wong *et al.* 2006). That is, filial piety, the expression of responsibility, respect, sacrifice and family harmony which regulates children's attitudes and behavior towards family-based support (Sung 2000), has changed (Wong *et al.* 2006).

The concept of filial piety is also a core value of older Chinese. For both cultures, there is a strong reliance on family support. However, expectations and preferences of adult children fulfilling their filial piety responsibilities in certain ways (e.g. co-residence) has changed as older Chinese and Koreans take up more common US values such as being as independent as possible (Lan 2002; Wong *et al.* 2005). Further, how filial piety is expressed by US-born Chinese and Korean adult children has also changed (Sung 1990, 2000; Lan 2002). Although intergenerational house-holds among all older Asians (as an aggregated group) in the USA remain higher (30–59%) than in older non-Latino whites (15%) (Chappell 2003), living alone or only with one's spouse is becoming preferable and more common (Burr & Mutchler 1993; Chappell *et al.* 2000; Chappell 2003). Chow (2000) found that 87% of older Asians preferred a nursing home if they required long-term care and as many as 90% of older Asians reported not wanting to live with a child (Gee 2000). What remains unknown is whether this disparity between older Chinese and Koreans' actual living arrangements and their shared preferences for living separately from their children influences their psychological well-being.

Social support and psychological well-being

Social support has been recognized as an important resource that offers a beneficial effect on individuals' well-being (Cohen 1988; Cohen *et al.* 2000). In Chinese and Korean culture, the strong social norm governing the role of adult children in providing social support may be particularly relevant to the psychological well-being of older Chinese and Korean immigrants living in the USA. Yet, intergenerational social support studies of mainly white families in the USA have shown that support

from adult children has minimal positive, and possibly negative effects, on the psychological well-being of older parents (Dunham 1995; Lee *et al*. 1995; Silverstein *et al*. 1996). This may be, in part, related to a lack of expectations amongst older white parents that their adult children provide social support as they grow old. A study of older Chinese in Beijing shows that support from children had a positive contribution to the well-being of older parents (Chen & Silverstein 2000). However, we are not aware of any studies that have examined the effect of social support or living arrangements and psychological well-being amongst older Chinese and Koreans living in the USA.

Methods

Procedures

The study population was a convenience sample of self-identified Chinese and Korean immigrants, aged 65 years and older. The recruitment sites consisted of four community-based organizations (San Francisco Seniors Center, Self Help for the Elderly, San Jose Korean Center and the East Bay Korean Center), six gathering places within the community such as the Chinese Cultural Center, Chinatown New Park and coffee shops, and three ethnic churches. Community-based organizations and ethnic community churches were chosen based on high numbers of older Chinese and Koreans served by these agencies. Places within the community were chosen based on high concentrations of eligible participants gathering on a daily basis.

Initial contact with eligible participants took place using a standard script or through key community leaders making announcements to their staff, clients or congregations. Face-to-face interviews were scheduled, in Cantonese or Korean, and took place in a private room at the church or community organization, the participant's home or in an area away from other people (e.g. corner seat in a tea house). Signed informed consent was obtained. Each person was given $10 in appreciation of his or her participation in the study. All procedures were approved by the institutional review board at the University of California, San Francisco.

Social Support Scale Construction

A review of social support measures revealed no one instrument that captured all domains identified in our previous study that explored social support domains for older Chinese and Koreans (Wong *et al*. 2005) or reported psychometric properties in these groups. For example, in our study consisting of eight focus groups (four Chinese, four Koreans) we found two sub-domains of tangible support, financial and material aid. Study participants also clearly identified the need for language support. When reviewing existing measures, including the: (1) MOS Social Support Survey (Sherbourne & Stewart 1991), (2) Duke–UNC Social Support Questionnaire (Broadhead *et al*. 1988), (3) Arizona Social Support Interview Schedule—ASSIS

(Barerra 1981), (4) Social Support Questionnaire (Sarason *et al.* 1983), (5) Social Support Index (Krause & Markides 1990), and (6) Norbeck Social Support Questionnaire (Norbeck *et al.* 1983), no one measure included sub-domains of both financial and material aid or language support.

A pool of self-report items was developed from existing social support instruments; some item stems and responses were taken from the MOS Social Support Survey (Sherbourne & Stewart 1991), the Duke–UNC Social Support Questionnaire (Broadhead *et al.* 1988) and the Social Support Index (Krause & Markides 1990). Items were selected based on: (1) evidence suggesting that older Chinese and Koreans identified four out of five typically cited functional support domains: tangible, information/advice, emotional and companionship (House & Landis 1988; Krause & Markides 1990; Sherbourne & Stewart 1991; Wong *et al.* 2005) and (2) one of the authors (A.S.) extensive expertise in developing the MOS measures. These items were modified using phrases (item stem: 'Give you information to help you understand a situation'; modification: where to apply for SSI, how to pass the citizenship test) from focus group participants. New items were written based on our previous study (Wong *et al.* 2005) for the domains of financial and language support. A total of 30 items measured five domains: tangible (financial and material aid), financial, information/advice, emotional, and language support and companionship. Tangible support was defined as help with transportation, carrying heavy groceries and making meals. Financial support referred to monetary help. Information/advice was help with obtaining information such as who one could seek for assistance with a personal problem. Emotional support was defined as the display of physical or verbal affection. Language support included help with translation to English in different situations such as medical appointments or understanding a telephone bill. Companionship referred to getting together with others.

All items were translated into Chinese and Korean using the forward–backward translation process (Marìn & Marìn 1991). Items were modified in Chinese, Korean and English, as necessary, in order to ensure conceptual equivalence. That is, the adequate reflection of social support domains important to groups that speak little or no English (Hui & Triandis 1985; Flaherty 1987; Guillemin *et al.* 1993; Patrick *et al.* 1994; Herdman *et al.* 1998). Similar to Broadhead *et al.*'s (1988), Krause and Markides' (1990), and Sherbourne and Stewart's (1991) questions assessed perceived support; questions asked participants: 'If you needed it, how much of the time is someone available to help you with . . .?' The responses consisted of a five-point Likert scale, 'all of the time, most of the time, some of the time, a little of the time, and none of the time'.

Factor Analysis and Psychometric Evaluation of Social Support Measure

To assess whether the number of dimensions identified matched our hypothesized number of five dimensions, we fit a factor analysis model to the total sample. Because two-thirds of the cases had at least one missing item, factor analysis of the

EM covariance matrix was used. EM is a general method for obtaining maximum likelihood estimates when some of the data are missing (Dempster *et al.* 1977). The algorithm consists of two steps; an expectation step and a maximization step. The first is analogous to regression imputation of the missing values. Once missing data are imputed, the maximization step computes the means and covariance matrix using the imputed data. The two steps are iteratively repeated in a process that converges estimates to maximum likelihood estimates. The final factor structure was determined by including items with a strong factor loading (≥ 0.40) on only one factor. Scree plots were also examined. Studies of measurement invariance were not possible due to the small sample sizes.

   Once the final factor structure was determined, social support scales were developed and several psychometric properties were examined for the entire sample and separately for each ethnic group. Scale scores were calculated by averaging non-missing items; scores were converted to $0-100$ scales and a higher score indicated higher frequency of the labeled concept (e.g. higher language support scores indicate more perceived language support).

Psychological Well-being

The Medical Outcomes Study 17-item Mental Health Inventory (MHI-17) was used to measure psychological well-being. It is available in Spanish and English and was designed to measure mental health in terms of psychological distress and well-being (Stewart *et al.* 1992a). The 17-item version reflects three dimensions of psychological well-being: depression, anxiety and positive affect. The five-point Likert response scale for these items was, 'all of the time, most of the time, some of the time, a little of the time, and none of the time'. Similar to the social support scales, all items were scored so that a higher score is interpreted as more of the labeled concept.

Other Variables

Participants were also asked to report their ethnicity, sex, age, number of people living in their household, number and age of their children, country in which they were born, how many years they had lived in the USA, English language ability and acculturation. Ethnicity was coded as $0 =$ Koreans and $1 =$ Chinese, and gender coded as $0 =$ men and $1 =$ women. Other variables included: level of education and health insurance.

   Scale scores were derived for acculturation and English language ability. The acculturation scale, which has exhibited adequate reliability and validity in Spanish and English in past studies (Marìn *et al.* 1987; Marìn & Posner 1995), contains five questions that ask: in what language a person usually reads and speaks, used as a child, speaks at home, thinks in and speaks with their friends. The five-point response categories were: only Cantonese/Korean, Cantonese/Korean better than English, both equally, English better than Cantonese/Korean or only English. Scores could range

from 1 to 5, where a higher score indicated more use of English. Internal consistency reliability for the acculturation scale was high in this sample (0.91—Chinese, 0.98—Koreans).

In order to assess English language ability, a score is derived from three questions regarding how well the person speaks, reads and understands English. The score was constructed such that individuals answering fluently/very well indicated no problems with English, fairly well indicated some problems with English and poorly/not at all indicated severe problems with English.

Variability (range, frequency distribution, degree of skew, floor and ceiling effects), item-scale correlations and internal consistency reliability were examined for the social support scales and the MOS MHI-17. The skewness statistic was used to indicate the degree of skew, which ranges from negative to positive infinity. The closer the score to zero, the more normal is the distribution; scores over 2.0 may require transformation. Cronbach's alpha coefficient was used to assess the internal consistency of each scale using Nunnally and Bernstein's (1994) standard of 0.70 or higher as a criterion.

Content validity of the social support scales was ensured using words and phrases captured through our qualitative work (Wong *et al*. 2005). Construct validity of these scales was assessed by testing for significant positive correlations ($p < 0.05$) between social support and psychological well-being.

Analysis

Descriptive statistics, including frequencies and percentages for categorical data and means, standard deviations and ranges for continuous data, were calculated to characterize the study population. In order to examine the levels of social support and psychological well-being among Chinese and Koreans, we calculated the means of each scale for three types of household configurations: (a) living with spouse; (b) living with adult children and spouse; and (c) living alone. No Chinese or Koreans lived with just their adult children. Analysis of variance and Bonferroni *t*-tests were used to detect any differences between the means (Glantz & Slinker 1990).

The relationship between social support and psychological well-being was examined using linear multivariate regression. Four models were assessed, one for each dependent variable: overall psychological well-being, depression/behavioral emotional control, anxiety and positive affect. Independent variables were the same in all models: demographic variables including ethnicity (Chinese or Korean), gender, household configuration (living with spouse only was the reference group), living with adult children and spouse, and living alone, age, acculturation and social support variables (language, information/advice, financial and emotional). Statistical analyses were performed using SAS Statistical Software, Version 6.12 (SAS Institute 2000).

Results

Among those who were approached, 67% of Chinese ($n = 100$) and 85% of Koreans ($n = 100$) completed the survey for an overall response rate of 75%. The socio-demographic characteristics by ethnic group are shown in Table 1. The distributions demonstrate that the two Asian subgroups are similar in age, gender, educational level, health insurance coverage, the number of children living in the household and the number of children each individual had. The groups are also similar in that the majority were born outside the USA and have resided in the USA for an average of 16–17 years. Chinese and Koreans were not highly acculturated (1.08, 1.04, respectively) and most had severe difficulties with their English language abilities (85 and 78%). Chinese were younger ($p < 0.05$) and more likely to be married ($p < 0.05$) and live in households with more people ($p < 0.05$) compared to the Koreans.

Social Support Measure

Factor analysis

Many people had difficulty answering the tangible support items. Participants overwhelmingly felt that the questions did not apply to them, stating they did not need help getting things done in the house or carrying heavy groceries. Thus, the seven-item tangible support scale could not be analyzed due to extensive missing data.

The scree plot (not shown) of the remaining items provided evidence that a four-factor solution was appropriate. Factor analysis revealed a four-factor solution in which all factor loadings met our criteria, except for two items. One item, 'How much of the time is someone available to help you learn English?' had a factor loading of 0.39 but was included because it almost met our criterion and was considered theoretically important. The other item, 'How much of the time is someone available to love you and make you feel wanted?' was dropped because it had similarly high factor loadings on two of the four factors (0.41 and 0.32), indicating that this item did not discriminate between the two concepts. Items originally hypothesized to belong to an emotional support scale and a companionship scale loaded onto the same factor. Inter-factor loadings ranged from −0.12 to 0.50. Table 2 shows the final analysis with four distinct factors: emotional, information/advice, language and financial.

The emotional/companionship support scale (six items) included two modified items from the MOS Social Support Survey (Sherbourne & Stewart 1991) and four new items. The information/advice scale (seven items) included one item that was modified from the Social Support Index (Krause & Markides 1990) and two modified items from the MOS Social Support Survey (Sherbourne & Stewart 1991), as well as four new items. All language support items were newly developed. The financial support scale also included one item that was modified from the Social Support Index (Krause & Markides 1990) and three there were new.

Table 1 Sociodemographic Characteristics of Chinese and Korean Participants Aged 65 and Older

Demographics	Chinese ($n = 100$)	Korean ($n = 100$)
Age range (years)	65–92	65–95
Mean (SD)*	72.8 (6.1)	75.0 (6.2)
% Female	51	62
% Married*	62	45
Educational level (%)		
< High school	79	57
High school	4	22
Some college	5	6
College graduate*	12	15
Country of origin (%)		
US born	1	0
Foreign born		
China	94	3
Korea	0	96
Other	5	1
Years in the USA (range)	0–64	0–49
Mean (SD)	16.3 (11.1)	17.1 (8.7)
English language ability (%)		
No problems with English	4	5
Some problems with English	11	17
Severe problems with English	85	78
Acculturation (1–5)[a]		
Mean (SD)	1.08 (0.3)	1.04 (0.3)
Type of insurance (%)		
Private only	1	3
Public only	94	86
Private and public	2	0
Uninsured	2	10
Number of children, range	0–7	0–8
Mean (SD)	3.0 (2.0)	4.0 (2.0)
Number of children living in household, range	0–3	0–1
Mean (SD)	0.4 (0.6)	0.1 (0.7)
Age range of children (years)	21–65	0–68
Mean (SD)	42.8 (8.0)	46.1 (7.8)
Number of people living in household, range	1–5	1–4
Mean (SD)*	2.0 (0.8)	1.7 (0.7)

*$p < 0.05$.
[a]Higher = higher preference for using English.

Four scales were constructed from the final 22 items. Scale–scale correlations between the four scales were moderate (Table A2, scale–scale correlations), ranging from $r = -0.16$ between Information/Advice and Financial support to $r = 0.50$ between Information/Advice and Emotional support, indicating independent constructs.

Table 2 Factor Loadings for Social Support Scales

Item number	Item stem: How much of the time was someone available to:	Factor 1 Emotional/ Companionship	Factor 2 Informational/ Advice	Factor 3 Language	Factor 4 Financial
1	Get together for relaxation[a]	0.74	–	0.10	–
2	Go out and do things with	0.72	−0.24	0.18	0.13
3	Eat meals together	0.71	−0.19	–	–
4	Listen to you when you need to talk[a]	0.71	0.18	–	−0.11
5	Talk to about things such as news events or what you are doing today	0.67	–	–	–
6	Confide in or talk to about yourself or your problems	0.63	0.34	−0.13	–
7	Help you feel better when you are sad or lonely	0.61	0.30	–	–
8	Tell you who you could see for assistance with a problem that you were having[b]	–	0.83	0.12	–
9	Turn to for suggestions about how to deal with a personal problem[a]	–	0.79	–	–
10	Give you information to help you understand a situation (e.g. where to apply for SSI, how to pass the citizenship test)[a]	–	0.72	–	–
11	Help you talk to someone (e.g. social worker) in order to get services such as SSI and cheaper housing	–	0.66	–	−0.13
12	Help you read mail that is written in English (e.g. bills, bank statements)	−0.20	0.60	0.14	0.15
13	Give you useful advice about important things in life	0.23	0.51	–	–
14	Help you get directions to places you are unsure of how to get to	–	0.41	0.29	−0.13
15	Help you with translation about which medications and how often you should take them	–	0.11	0.94	–
16	Help you with translation when you go to your doctor or the hospital	–	–	0.86	–
17	Help you ask questions in English when talking on the telephone	0.18	0.11	0.41	–
18	Help you learn English	0.25	0.11	0.39	–
19	Pay for expenses (e.g. rent, telephone bill) on a regular basis, if you needed it	−0.11	–	–	0.81
20	Give you pocket money	0.11	–	–	0.69

Table 2 (*Continued*)

Item number	Item stem: How much of the time was someone available to:	Factor 1 Emotional/ Companionship	Factor 2 Informational/ Advice	Factor 3 Language	Factor 4 Financial
21	Give you or loan you money[b]	–	–	–	0.68
22	Buy food or something else so you don't have to spend your money	0.12	0.10	−0.16	0.57

Note: Response scale = all of the time, most of the time, some of the time, a little of the time and none of the time.
Values less than 0.10 are not reported.
[a]Adapted from MOS Social Support Survey (Sherbourne & Stewart 1991).
[b]Adapted from Social Support Index (Krause & Markides 1990).

Psychometric Evaluation

Emotional/Companionship support

Scores for the Chinese sample ranged from 4 to 79 whereas scores for the Koreans utilized the entire range. However, adequate variability was observed since there were no floor or ceiling effects and the skewness statistic indicated a normal distribution. All item-scale correlations were ≥0.30. Cronbach's alpha was acceptable in both groups and overall (0.81—Chinese, 0.85—Korean, 0.87—overall).

Information/Advice

This scale had adequate variability in both the Chinese and Korean samples. No floor or ceiling effects were observed, the entire range of possible scores in Koreans and nearly the entire range in Chinese were used and the skewness statistic indicates a normal distribution. All item-scale correlations met the criterion (≥0.30) in both ethnic group samples and overall. Cronbach's alpha was acceptable in both groups and overall (0.88—Chinese, 0.78—Korean, 0.87—overall).

Language support

This scale has adequate variability in both samples. No floor or ceiling effects were observed, the entire range of possible scores was used for Koreans and in the total sample. The observed range for the Chinese was somewhat truncated at 81. However, the skewness statistic indicates a normal distribution in both ethnic groups. Although one item had an item-scale correlation <0.30 in the Chinese sample, it was included in the scale because the same item in the Korean sample and in the overall sample met the criterion. Internal consistency reliability (Cronbach's alpha) was 0.84 in the total sample, 0.76 for Chinese and approaching adequate reliability (0.69) in the Korean sample.

Financial support

Adequate variability was found in both groups. Nearly the full range of scores was used and the skewness statistic indicated a normal distribution. All item-scale

correlations met the criterion and Cronbach's alpha was high in both groups and overall (0.90—Chinese, 0.72—Korean, 0.79—overall).

Levels of Social Support and Psychological Well-being

MOS Mental Health Index

The Mental Health Index showed adequate variability for the overall scale as well as for each of the three subscales: Depression/Behavioral Emotional Control, Anxiety and Positive Affect. Nearly the full range of scores was used and the skewness statistic (not shown) indicated a normal distribution. All item-scale correlations met the criterion and Cronbach's alpha was acceptable in both groups and overall (MHI alpha, 0.91—Chinese, 0.88—Korean, 0.89—overall).

The correlation matrix between all the sociodemographic variables indicated multi-collinearity (0.90) between marital status and living with spouse. Therefore, marital status was excluded from our analyses.

Table 3 shows the scale scores for the final social support and psychological well-being scales. Koreans reported more emotional support than the Chinese (60.7 vs 40.4, $p < 0.001$). They also reported more information/advice (70.8 vs 51.8, $p < 0.001$), and more language support (63.0 vs 22.1, $p < 0.001$). However, Chinese respondents reported more financial support than Koreans (63.5 vs 52.6, $p < 0.001$).

Although Chinese and Koreans reported similar levels of overall psychological well-being, Chinese reported a lower level of depression ($p < 0.01$) but also lower positive affect ($p < 0.001$) compared to Koreans. Levels of support were lowest for those who lived alone (see Table 4). Both Chinese and Koreans living alone received less emotional/companionship support compared with those living with their spouses (32.2 vs 43.7, Chinese; 52.4 vs 68.7, Koreans; $p < 0.05$). Koreans living alone received less information/advice compared to Koreans living with their spouse or with their spouse and children (63.0 vs 76.9 and 81.9, $p < 0.05$). Koreans living alone also received less financial support compared to those living with their spouse and adult children (47.1 vs 56.8 and 62.5, $p < 0.05$). There were no differences in language support for either Koreans or Chinese by living situation. Additionally, there were no differences in any domains of psychological well-being by living situation.

The results of the multivariate analyses are shown in Table 5. Ethnic group differences remained significant for depression with Korean respondents having more depression than Chinese respondents ($p < 0.01$). However, ethnic group differences for positive affect were no longer significant. Having more emotional/companionship support significantly contributed to better overall psychological well-being ($p < 0.001$), less depression ($p < 0.001$) and higher positive affect ($p < 0.001$). Those who had less financial support were more likely to be anxious ($p < 0.05$). Language support was not associated with any domain of psychological well-being. When a person lived with a spouse and adult children, both overall psychological well-being and positive affect remained lower than when they lived alone or just with his or her spouse ($p < 0.05$).

Table 3 Psychological Well-being and Social Support Scale Scores

	Number of items	Chinese ($n = 100$)	Korean ($n = 100$)	Total sample ($n = 200$)
Social Support Scales	22			
Emotional/Companionship support				
Mean (SD)***	7	40.4 (16.3)	60.7 (22.7)	50.5 (22.2)
(Range)		(4−79)	(0−100)	(0−100)
Informational/Advice support				
Mean (SD)***	7	51.8 (20.9)	70.8 (22.1)	61.3 (23.5)
(Range)		(10−100)	(0−100)	(0−100)
Language support				
Mean (SD)*	4	22.1 (20.8)	62.9 (25.9)	42.9 (32.2)
(Range)		(0−81)	(0−100)	(0−100)
Financial support				
Mean (SD)***	4	63.5 (18.5)	52.6 (18.9)	57.1 (19.4)
(Range)		(19−100)	(6−100)	(6−100)
Psychological Well-being				
Mean (SD)	17	69.5 (15.3)	68.9 (18.6)	69.2 (17.0)
(Range)		(16−96)	(10−99)	(10−99)
Depression/Behavioral Emotional Control				
Mean (SD)**	8	24.2 (15.2)	31.0 (20.2)	27.6 (18.2)
(Range)		(0−78)	(0−84)	(0−84)
Anxiety				
Mean (SD)	3	25.1 (19.5)	30.7 (24.0)	27.8 (22.0)
(Range)		(0−92)	(0−100)	(0−100)
Positive Affect				
Mean (SD)***	4	55.9 (22.0)	68.0 (22.2)	62.0 (22.9)
(Range)		(6−100)	(0−100)	(0−100)

Note: When comparing Chinese and Koreans: *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.
Higher score = more of concept.

Discussion

This research is among the first to examine different domains of social support and well-being in older Chinese and Koreans living in the USA. It has contributed to current knowledge in several ways. First, this study provides empirical evidence of a new multidimensional social support measure that can be used, with further validation, in older Chinese and Korean immigrants. Our qualitative research (Wong *et al*. 2005) suggesting language support was, indeed, a type of social support was confirmed.

We report acceptable reliability, variability and beginning evidence of item convergence for this social support measure in older Chinese and Koreans. Consistent with recommendations, we focused on the most essential aspects of social support: the perceived availability, if needed, of various components of functional support (Cohen *et al*. 2000; Wills & Shinar 2000). In addition to constructing a social support

Table 4 Mean Levels of Social Support and Psychological Well-being by Living Arrangement and Ethnic Group

Living situation	Spouse only (Chinese $n=35$, Korean $n=37$)	Alone (Chinese $n=31$, Korean $n=45$)	Spouse and adult children (Chinese $n=21$, Korean $n=12$)
Social Support			
Emotional/Companionship support			
Chinese	43.7 (16)[a]	32.2 (16)[a]	40.9 (13)
Korean	68.7 (20)[b]	52.4 (23)[b]	69.4 (22)
Information/Advice			
Chinese	53.3 (22.0)	51.1 (18.8)	45.6 (21.2)
Korean	76.9 (20.4)[c]	63.0 (24.1)[c,d]	81.9 (12.8)[d]
Language support			
Chinese	22.6 (20.8)	23.3 (22.7)	18.3 (18.5)
Korean	64.3 (26.2)	60.4 (27.5)	74.5 (21.6)
Financial support			
Chinese	61.4 (20)	62.4 (19)	70.7 (14)
Korean	56.8 (19)	47.1 (19)[d]	62.5 (14)[d]
Psychological Well-being			
Chinese	73.3 (14)	66.7 (15)	68.3 (16)
Korean	72.7 (17)	69.0 (20)	60.3 (16)
Depression/Behavioral Emotional Control			
Chinese	20.4 (13)	27.2 (15)	25.1 (15)
Korean	27.9 (18)	30.2 (22)	38.3 (20)
Anxiety			
Chinese	21.4 (19)	27.4 (17)	25.8 (19)
Korean	28.1 (21)	29.5 (27)	35.8 (22)
Positive Affect			
Chinese	60.5 (21)	52.6 (24)	53.8 (20)
Korean	74.4 (20)	65.7 (23)	58.1 (22)

[a–d]Significant differences between living situations, $p < 0.05$, within each ethnic group.
Higher score = more of the concept. Total number of Chinese = 87 and total number of Koreans = 94. Thirteen Chinese and six Koreans had other living situations (e.g. living with a relative).

measure specifically for older Chinese and Koreans, this is the first study that the authors know of to examine the relationship between social support and psychological well-being in these two Asian ethnic groups.

The social support measure includes two historically conceptualized domains (information/advice and emotional/companionship support) and two newer domains (language and financial support). However, further work is needed to provide more evidence of the domains of language, financial and tangible.

This multidimensional measure of social support was able to differentiate between emotional and information/advice support, unlike the MOS social support measure (Sherbourne & Stewart 1991). However, further empirical study is needed to

Table 5 Multivariate Linear Regression Results: Social Support and Psychological Well-being in Older Chinese and Koreans ($n = 154$)

	Better Psychological Well-being Overall	More Depression/ Behavioral Emotional Control	More Anxiety	Higher Positive Affect
	Parameter estimate (SE)	Parameter estimate (SE)	Parameter estimate (SE)	Parameter estimate (SE)
Ethnicity				
1 = Chinese, 0 = Korean	7.5 (4.0)	−17.3 (4.2)**	−7.0 (5.3)	−8.7 (5.1)
Gender				
1 = women, 0 = men	−5.0 (2.9)	5.4 (3.0)	7.2 (3.9)	−3.5 (3.7)
Age	−0.5 (0.2)*	0.5 (0.3)*	0.6 (0.3)	0.6 (0.4)
Acculturation	−1.2 (4.2)	3.6 (4.4)	4.6 (5.7)	3.0 (5.5)
Household configuration				
Living with spouse (ref)	0	0	0	0
Living alone	4.3 (3.4)	−4.5 (3.5)	−4.7 (4.5)	0.3 (4.4)
Living with adult children	−8.0 (3.8)*	7.5 (4.1)	6.1 (5.2)	−10.6 (5.0)*
Social Support				
Emotional/ Companionship	0.3 (0.1)†	−0.3 (0.1)†	−0.2 (0.1)	0.4 (0.1)†
Informational/Advice	0.0 (0.1)	0.1 (0.1)	0.1 (0.1)	0.1 (0.1)
Language	0.0 (0.1)	−0.1 (0.1)	−0.1 (0.1)	−0.1 (0.1)
Financial	0.1 (0.1)	−0.1 (0.1)	−0.3 (0.1)*	−0.0 (0.1)
R^2 (%)	12	18	6	15

Note: *$p < 0.05$, **$p < 0.01$, †$p < 0.001$.

determine whether emotional support and companionship can be differentiated among older Chinese and Koreans. Findings from our research did not support their distinctness, in contrast to other multidimensional social support scales that were developed in mainly white samples (Cohen *et al*. 1985; Cutrona & Russell 1987; Vaux *et al*. 1987; Suurmeijer *et al*. 1995). Our previous work found that companionship appeared to be more than just the availability of having other people with whom to share activities. It also seemed to provide encouragement and, indirectly, emotional support (Wong *et al*. 2005). It is possible that the companionship items have a different meaning in older Chinese and Koreans. Previous work suggests that preferred modes of emotional communication for older generations of Asians are through nonverbal indirect behaviors (Morris 1990; Uba 1994).

One reason for the lower levels of information/advice and language support could reflect the more developed services available in Chinese in the San Francisco Bay Area. With increased availability of formalized Chinese services and erosion of filial piety where adult children are responsible for the care of older parents (Kaugh 1999; Parrott *et al*. 2000), community dwelling older Chinese are becoming more independent. Services available in Koreans are less well developed in the Bay Area, which likely results in older Koreans depending more on their social network which

includes both kin and non-kin. It is less clear why Chinese respondents reported lower levels of emotional support.

Second, the results suggest differences in well-being exist between older Chinese and Koreans. The pattern of Chinese being less verbally and emotionally expressive compared to whites is not new (Uba 1994), given that Chinese cultural values emphasize inhibition of emotions (Kleinman 1980; Tabora & Flaskerud 1994). Thus, the finding that Chinese have lower scores in depression and positive affect is not surprising. It could also be that Koreans are more expressive compared to Chinese. Aldwin and Greenberger (1987) found that expressing emotions was positively associated with depression among Koreans. However, further research is needed on differences between Asian ethnic groups in psychological well-being.

Consistent with past literature, those with less emotional support, in this case, in terms of both showing affection (through words or actions) and getting together, were more depressed (House *et al*. 1988; Antonucci & Fuhrer 1997; O. Kim 1999). Even after controlling for sociodemographic variables, including living arrangement, we found that older Koreans had more depression than the Chinese. This finding could be related to a stronger ethnic attachment, defined as an immigrant's subjective identification with a particular ethnic group and maintenance of sociocultural ties with members of that group (Kim 1999). Older Koreans may find it more difficult to expand their sources of emotional support and thus not be able to access services (e.g. bridge club, walking group) offered in other languages which could lead to social isolation and premature death (Berkman & Syme 1979; House *et al*. 1982; Orth-Gomer & Johnson 1987; Sugisawa *et al*. 1994; Pennix *et al*. 1997).

While future empirical work needs to be done, there is some evidence that emotional support is gained from within the kin network (Mui 1996; H. Kim *et al*. 2000). Barriers to obtaining sufficient emotional support include adult children who live far away and reticence in talking to others about negative emotions because of beliefs related to shame, losing family face and beliefs about enduring suffering (Mui 1996).

Finally, these results suggest that social support differs by living arrangement. The norm in Asian cultures has been to co-reside in multigenerational families (Gu & Liang 2000; Sung 2000), however, our data suggest that more older Chinese and Koreans are living alone or only with their spouse and that their psychological well-being may be negatively affected when they live with their adult children. Our results are consistent with recent findings that the concept of filial piety (where Chinese and Korean adult children are 'being responsible' for the care of older parents) is changing (Lee *et al*. 1995; Sung 2000; Lan 2002; Wong *et al*. 2006). This shift in thinking is taking place in Asia as well as the USA due to factors such as the increased mobility of the adult children (Ng *et al*. 2002). Intergenerational relationships are becoming more affection based, and younger generations tend to exchange support based more on feelings of reciprocity rather than to expectations or obligation (Sung 2000). Additionally, adult children are transferring the filial duty of care for their aging parents to non-family employees (Lan 2002).

The findings of this study should be interpreted with caution because the sample consisted of Chinese and Koreans mainly from San Francisco and the surrounding Bay Area which is known for its multilingual aging service providers and community organizations. The use of community-based organizations, public gathering places and ethnic community churches as recruitment sites limit these findings to those who are able to move from one place to another; the sampling strategy also precluded reaching those who are more isolated. In order to further validate this first-generation social support measure and increase its generalizability to use in other groups, different samples including those who are more isolated and other racial/ethnic groups should be used. Future work should also include larger samples of older Chinese and Koreans located in both urban and more suburban settings and in different living situations. We were unable to report on a tangible support domain. It is possible that the financial aid scale could be considered part of tangible support, however, future research to fully develop this domain is needed. As the number of older Chinese and Koreans living in the USA continues to increase relative to other Asian groups, an important next step will be to examine the number of actual sources of support in these groups and identify if the number of sources is sufficient in meeting their needs.

Acknowledgements

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Appendix

Table A1 Psychometric Properties of Social Support Scales

	Chinese (*n* = 100)	Korean (*n* = 100)	Total sample (*n* = 200)
Emotional/Companionship support = 7 items			
Number of missing cases	0	0	0
Mean (SD)	40.4 (16)	60.7 (23)	50.5 (22)
Observed range	4−79	17−100	0−100
Possible range	0−100	0−100	0−100
Floor effects (% lowest)	2	1	1
Ceiling effects (% highest)	1	6	3
Skewness statistic	0.2	−0.3	0.2
Internal consistency reliability	0.84	0.86	0.89
Range of item−total correlations	0.33−0.72	0.58−0.69	0.69−0.74
Informational/Advice support = 7 items			
Number of missing cases	8	9	17
Mean (SD)	51.8 (21)	70.8 (22)	61.3 (23)
Observed range	10−100	0−100	0−100
Possible range	0−100	0−100	0−100
Floor effects (% lowest)	1	1	1
Ceiling effects (% highest)	3	12	8
Skewness statistic	0.1	−0.8	−0.2
Internal consistency reliability	0.88	0.78	0.87
Range of item−total correlations	0.52−0.85	0.38−0.60	0.51−0.73
Language support = 4 items			
Number of missing cases	12	9	21
Mean (SD)	39.1 (24)	63.0 (26)	53.8 (28)
Observed range	0−81	0−100	0−100
Possible range	0−100	0−100	0−100
Floor effects (% lowest)	22	2	12
Ceiling effects (% highest)	1	14	7
Skewness statistic	0.8	−0.4	0.2
Internal consistency reliability	0.75	0.71	0.83
Range of item−total correlations	0.26−0.80	0.32−0.65	0.51−0.82
Financial support = 4 items			
Number of missing cases	29	0	29
Mean (SD)	63.5 (19)	52.6 (19)	57.1 (19)
Observed range	19−100	6−100	6−100
Possible range	0−100	0−100	0−100
Floor effects (% lowest)	1	1	1
Ceiling effects (% highest)	1	1	1
Skewness statistic	−0.9	−0.2	−0.4
Internal consistency reliability	0.90	0.72	0.79
Range of item−total correlations	0.81−0.92	0.63−0.68	0.72−0.77

Note: Higher = more support.

Table A2 Intercorrelations among the Scales

	MOS MHI-17	Depression/ Behavioral Emotional Control	Anxiety	Positive Affect	Informational/ Advice support	Emotional/ Companionship support	Language support	Financial support
MOS MHI-17	1.0	−0.93	−0.75	0.76	0.09	0.24	0.08	0.16
Depression/ Behavioral Emotional Control	–	1.0	0.70	−0.56	−0.00	−0.15	−0.02	−0.19
Anxiety	–	–	1.0	−0.33	−0.06	−0.03	−0.01	−0.10
Positive Affect	–	–	–	1.0	0.26	0.36	0.17	−0.00
Informational/ Advice support	–	–	–	–	1.0	0.48	0.56	−0.12
Emotional support	–	–	–	–	–	1.0	0.51	0.07
Language support	–	–	–	–	–	–	1.0	−0.15
Financial support	–	–	–	–	–	–	–	1.0

Table A3 Inter-factor Correlations

	Factor 1 Emotional/ Companionship	Factor 2 Informational/ Advice	Factor 3 Language	Factor 4 Financial
Factor 1 Emotional/ Companionship	100	0.50	0.33	0.05
Factor 2 Informational/ Advice	–	100	0.44	−0.16
Factor 3 Language	–	–	100	−0.12
Factor 4 Financial	–	–	–	100