Social Network Types and Subjective Well-being in Chinese Older Adults

Sheung-Tak Cheng, 1 Coty K. L. Lee, 1 Alfred C. M. Chan, 2 Edward M. F. Leung, 3 and Jik-Joen Lee 4

1Department of Applied Social Studies, City University of Hong Kong, China.
2Asia-Pacific Institute of Ageing Studies, Lingnan University, Hong Kong, China.
3United Christian Hospital, Hong Kong, China.
4Department of Social Work, Chinese University of Hong Kong, China.

The study examined social network types in a sample of 1,005 older Chinese adults in Hong Kong and the networks’ relations to subjective well-being. Given the nature of kinship in Chinese society, we broke down social support provision by closeness of blood ties (immediate kin, distant kin, and non-kin). Using K-means cluster analysis, we identified 5 network types: diverse, friend focused, restricted, family focused, and distant family. The latter was characterized by few immediate kin but mostly distant kin. Diverse and family-focused networks were most beneficial to well-being, whereas restricted networks were least. Distant family networks were associated with only marginally lower well-being than family-focused networks and were comparable to friend-focused networks. Results suggested the importance of the extended family in support provision for Chinese older adults, especially in the absence of immediate kin and friends. Implications of the present findings for other cultural groups are discussed.

Key Words: Social network—Kinship—Subjective well-being—Elderly—Hong Kong Chinese.

Researchers have approached the topic of social support mainly by describing the different structural (e.g., contact frequency) and functional (e.g., practical assistance) properties of a social network and examining their unique effects on physical and psychological outcomes (e.g., Brown, Nesse, Vinokur, & Smith, 2003). Another key aspect of social networks is the systematic variation among support elements across individuals, leading to the identification of network types. For example, a wide network of family, friends, and neighbors may not only be larger in size but also provide more robust support functions because of the various roles that different network members play in times of need. In comparison, a network of close friendships is highly adaptive when emotional needs arise but not necessarily when it comes to instrumental needs such as problems with activities of daily living (Adams & Blieszner, 1995). Such covariations make network typology a convenient and parsimonious construct in describing the structural and functional properties of a network (Litwin, 1998; Wenger, 1991). It therefore differentiates individuals based on network constellations rather than specific characteristics of the network.

Qualitative and quantitative studies converged to show that structural and functional support qualities tend to exhibit certain patterns across individuals (Bosworth & Schaie, 1997; Fiori, Antonucci, & Akiyama, 2008; Fiori, Antonucci, & Cortina, 2006; Fiori, Smith, & Antonucci, 2007; Litwin, 1996, 1997, 2001; Wenger, 1991; see Litwin, 1998, for a review). Across the United States, Germany, Israel, and Japan, the networks of community-dwelling older persons are found to cluster around four main types. Diverse networks are characterized by a broad support base consisting of family, friends, and neighbors, as well as frequent participation in organizational activities (e.g., church and clubs). Family-focused networks are characterized by close ties with spouse, children, and siblings but little contact with friends and organizational participation. In contrast, friend-focused networks are characterized by frequent contact with friends and neighbors but few or nonexistent kinship ties, as well as low organizational participation. Finally, restricted networks feature few social ties and low social activities. Those having friend-focused or restricted networks are more likely than others to be widowed or divorced (see Fiori et al., 2006, 2007, 2008; Litwin, 1997, 2001; Wenger).

Preliminary research has shown systematic variations between network types and physical and psychological functioning. Fiori et al. (2006) found that people with diverse networks, the most prevalent type among U.S. older persons, were less depressed than those with friend networks, who in turn were less depressed than those with family networks; individuals with restricted networks were, as expected, most depressed. In Israel, different nationally represented samples converged to indicate that those with diverse networks had the highest overall psychological (moral) and physical health in terms of subjective and objective (e.g., functional and visual impairments, mortality) indicators, followed by those with friend networks. Surprisingly, individuals with family networks had lower morale and a higher mortality rate than individuals with neighbor or community clan networks, although they were better than those with attenuated (i.e., restricted) networks (Litwin, 1998, 2001; Litwin & Shiovitz-Ezra, 2006). Despite inconsistencies (see Fiori
et al., 2007), the general pattern of findings suggested that the diverse network is most protective of physical and psychological health, followed by the friend-focused network in Western and Israeli populations. According to the task-specific model of social support, network members specialize in various support provisions. Whereas close kin provide practical assistance, a sense of security and belonging, and opportunities for nurturing behaviors, non-kin network members boost one’s self-esteem and facilitate social integration (Felton & Berry, 1992; Litwak, 1985). It is no wonder that the diverse network, having a greater variety of family and friends to provide for different needs, should be most well-being and health enhancing.

In spite of general similarities, notable cross-cultural variations in social network types exist, for culture and society structure social interactions and relations. Approximately 12% of U.S. older adults had family-focused networks (Fiori et al., 2006). In Israel, however, more than one third belonged to family-focused networks, differentiated as religious family networks (i.e., family networks with regular synagogue attendance, 11%), narrow family networks (17%), and extended family networks (7% Litwin, 1997). Moreover, more than half of older adults drawn from a large city in Japan belonged to two different family networks: a close family-focused network (29%) and a married distal network (24.4%), which might be unique to the Japanese society (Fiori et al., 2008). Fiori and colleagues (2008) remarked that whereas relationships in the West are relatively voluntary and affection based, those in the East are predetermined by roles defining obligations between relational partners. For example, the emphasis on children’s (particularly sons’) filial responsibility is heavily ingrained in the Chinese society due to Confucian indoctrination (Cheng & Chan, 2006). Clearly, social network research has to be grounded in the social and cultural condition in which relationships are defined and nurtured. Because of this, we consider one important aspect of Chinese social networks—distant kinship.

In traditional Chinese societies, the basic social unit was the extended family with close kin relationship, and it is still true in many rural areas in China. Having extended kin is especially crucial to older adults in rural China because the current social security policies do not cover most underdeveloped areas (Xu, Xie, Liu, Xia, & Liu, 2007). According to the hierarchical compensation model (Cantor, 1979), the position of distant kin as between non-kin and close kin in terms of blood relatedness and emotional closeness enables them to react more flexibly to one’s needs and to compensate and give out support in case one’s network composition changes, such as when close kin are unavailable. Despite the declining household size in cities as China’s economy took off, the concept of the family as an inseparable support unit is still cherished by both older and younger Chinese (Xu et al.). Similarly in Hong Kong, household size has declined substantially over time, from an average of 4.5 persons in 1971 down to 3.0 persons per household 35 years later (Census and Statistics Department, 1982, 2007). Nevertheless, the linkage among extended kin is still maintained through various means, such as living close to each other and holding regular family gatherings, although such linkages are weaker than before. For the current cohort of older persons in Hong Kong who grew up in extended families, relationships that have been cultivated over the years have become the convoy that serves as the support resource over the life course (Antonucci & Akiyama, 1995). Although a cross-sectional sample could not rule out cohort effects, it was noteworthy that Fung, Stoeb, Yeung, and Lang (2008) found a strong positive correlation between age and the number of extended family members in the Hong Kong adults’ networks. Regular contact among extended kin is relatively easy in Hong Kong because of the excellent technological and transportation infrastructure, despite being a large metropolis. For these reasons, relatives in the larger extended family are expected to be important in the social networks of older persons in Chinese societies such as Hong Kong.

The social convoy model (Antonucci & Akiyama, 1995; Kahn & Antonucci, 1980) postulates the replacement of network members when support functions become inadequate or are no longer available. A social network is not a static entity but a dynamic multilayered system of resources that provides support over the life course. Some convoys that were adaptive before may no longer be so when the person’s needs change over the life course (e.g., divorced or widowed) or when some key network members are no longer available (e.g., due to illness or death). When this happens, the person may create new support resources, such as by cultivating peripheral ties to substitute lost close social ties. Thus, a larger convoy of distant relatives may enable more robust support substitutions over time due to the flexible roles they play. This argument applies also to ethnic groups that value relationships with distant kin, such as Hispanic, African, and African American (Cheng & Siankam, 2009; de Vos, 1990; Dilworth-Anderson, 1992). Based on these observations, we wonder whether networks composed primarily of distant kin would be found in Chinese older adults, especially those without immediate family members, and whether these networks would be similarly protective of well-being compared with other types of family network.

The foregoing discussion about the importance of immediate and distant kin leads to another question about the supportive role of friends for Chinese persons. Along the same line, one can argue that close friends can become preferred support providers when kin support is absent (Cantor, 1979). However, a small body of literature showed that seeking support from friends is less likely in collectivist than in individualistic cultures (Nemoto, 1998; Taylor et al., 2004). Despite the risk of overgeneralization (Matsumoto, 1999), a meta-analysis showed that East Asians were more collectivistic and less individualistic than North Americans (Oyserman, Coon, & Kemmelmeier, 2002).
Compared with individualism, collectivism gives priority to the group’s rather than the individual’s goals and emphasizes social harmony, interdependence, and reciprocity (Nemoto; Taylor et al.). These norms that govern social behavior require one to return favor after receiving benefits and discourage drawing the group’s attention to one’s problem because doing so would damage harmony. Because these norms are stronger with friends than with family (Nemoto), an important question is whether friend networks are necessarily more supportive than family networks in the Chinese.

The study

In the following, we report an exploratory study that investigates social network types in a large sample of Chinese older persons. Because our primary aim is to examine the supportive functions of distant kin in addition to those provided by immediate kin and non-kin, we recruited a sample in which unmarried individuals were overrepresented, with roughly equal numbers of married, divorced/separated, widowed, and never married participants. Marital status is a situational characteristic that is expected to lead to different affiliation patterns with immediate kin, distant kin, and non-kin (Antonucci & Akiyama, 1995; Kahn & Antonucci, 1980), and hence, a sample with sufficient variations in marital status is necessary to reveal the diversity of support patterns in any particular culture.

We expect to find new network types that are characterized by high support exchange with distant kin, whether in the context of high support exchange with immediate kin or in its relative absence. In the latter case, we expect that individuals without an immediate family (i.e., never married) and those whose immediate families are compromised (i.e., divorced or widowed) are most likely to report networks characterized by a supportive distant kinship and to place distant kin in their inner circles. We also expect that the well-being advantage of friend over family networks that has been consistently reported for Western samples will not be found in the Hong Kong Chinese because of the traditional reliance on the family and kinship for the fulfillment of needs and because seeking support from friends is not necessarily functional due to the norms of reciprocity and social harmony.

**Methods**

**Participants and Procedure**

We recruited a sample of 1,005 older persons roughly equally divided across four marital categories (married, never married, divorced/separated, and widowed) by putting up advertisements or through referrals by staff in nongovernment organizations servicing community-dwelling older persons. They were interviewed individually at home or at a social center. Although our targets were those aged 60+ years, one individual aged 59 years was also included. Men and women differed in marital status, $\chi^2(3) = 11.03, p < .05$, with more men than women being married but fewer being widowed. Characteristics of the sample are shown in Table 1.

**Measures**

**Cognitive impairment** was screened using the Mini-Mental State Examination (Folstein, Folstein, & McHugh, 1975). All participants scored 20 or above.

**Structural support** was assessed using the Kahn and Antonucci (1980) questionnaire. A set of three concentric circles was presented, with a smaller circle in the center labeled “me.” Participants were asked to place individuals into each of the three circles. The inner circle refers to people so close that it is hard to imagine life without them. The middle circle consists of people who are not as close but still very important to the focal person. The outer circle includes those people who have not yet been mentioned but nonetheless are close and important enough to be included in one’s personal network. For each network member, the following questions were asked: gender, age, relation to focal person, and frequency of contact on a 6-point scale of 1 (occasional), 2 (once a month), 3 (several times a month), 4 (once a week), 5 (several times a week), and 6 (daily). This
procedure generated measures of total network size and contact frequency; the latter was broken down by three relationship categories (vertically extended family, horizontally extended family, and nonfamily; see Data Analysis) and the scores represent the average frequency of contact across all network members within the specific category. In addition, as a measure of social integration, we asked participants to indicate their frequency of participation in eight social activities (e.g., playing mahjong [a.k.a. mah-jongg], singing Chinese opera) on a scale of 1 (never) to 5 (almost everyday).

Functional support received was assessed by asking whether each network member provided the following support functions to the participant: (a) emotional support, as measured by four items (confiding, showing affection, paying respect, and showing appreciation; \( \alpha = .76 \)) and (b) instrumental support, also measured by four items (care when ill, assistance with daily activities, advice and guidance, and financial aid; \( \alpha = .70 \)). Companionship was measured by two items: (a) common activities and (b) common topics for conversation (\( \alpha = .72 \)). Functional support provided by the participant to each network member was measured with (a) two items for emotional support (confiding and consoling; \( \alpha = .96 \)) and (b) two others for instrumental support (assistance with chores and everyday problems; \( \alpha = .89 \)). Items were rated on a 5-point scale of 1 (never) to 5 (always).

Similar to contact frequency, these functional support measures were broken down by the three relationship categories, hence 15 variables (5 functional support measures \( \times 3 \) relationship categories). The five support measures were highly intercorrelated within each relationship category (\( rs = .76–.94 \) for immediate kin, .75–.93 for distant kin, and .74–.92 for non-kin). To reduce the number of criterion variables for cluster analysis, we conducted a confirmatory factor analysis in which the 15 variables were specified to tap three underlying factors, each representing the overall support exchanges with network members that belonged to that relationship category. Results supported that the variables tapped three distinct latent factors: \( \chi^2(84) = 655.30, p < .001; \) comparative fit index = .97, nonnormed fit index = .96, standardized root mean square residual = .05, root mean square error of approximation = .08. All the observed variables were highly loaded on their respective factors: .86–.97 for immediate kin, .87–.97 for distant kin, and .75–.96 for non-kin. Hence, we computed overall support measures by summing the standardized scores of the five functional support measures for each relationship category.

Subjective well-being was assessed by three scales that generated four variables. First, life satisfaction was measured by the five-item Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985), rated on a 7-point scale from 1 (strongly disagree) to 7 (strongly agree; \( \alpha = .78 \)). Second, positive affect (e.g., happy, relaxed) and negative affect (e.g., depressed, sad) were each measured with six items using the short form of the Chinese Affect Scale (Cheng, 2004). Each item was rated on a 5-point frequency scale of 1 (rarely) to 5 (often) against the past week (\( \alpha = .87 \) for positive affect and .85 for negative affect). Finally, a four-item short form of the Geriatric Depression Scale (Cheng & Chan, 2004, 2005) was used (\( \alpha = .78 \)).

Data Analysis

K-means clustering was used to form the network clusters, followed by an examination of sociodemographic and well-being differences across network types using analysis of variance approaches. K-means clustering generates a prescribed number of clusters through repeated iteration of criterion cluster centers until the optimal formation of clusters is found (Everitt, 1993). To explore social support patterns in relation to distant kin, we constructed criterion variables that were slightly different from those of previous studies. In the existing literature, the presence of a spouse, number of and contact with children, contact with friends, emotional and instrumental support received, and participation in religious and organizational activities are common criterion variables (e.g., Fiori et al., 2006, 2008; Litwin, 2001). These variables, although important and predictive of well-being (e.g., Glass, de Leon, Bassuk, & Berkman, 2006; Silverstein, Cong, & Li, 2006), assume the nuclear family to be the norm. Albeit true to some extent, these clustering variables may ignore the role played by kinship outside the nuclear family in Chinese/Asian societies. To the best of our knowledge, only one study (Litwin, 1997) had included contact with siblings as an explicit criterion variable, but the contributions of kin other than spouse, children, and siblings were still ignored. Nevertheless, the effect of including measures related to other kin can be gleaned from the results of the study: A traditional extended family network was identified, with large immediate families and moderate contact with siblings. Therefore, in this study, we examined three different segments of each individual’s social network, namely, (a) immediate kin, defined as those within a vertically extended family, including parents, spouse, children, children-in-law, grandchildren, and great grandchildren; (b) distant kin, which include all other in-laws (horizontally extended family); and (c) non-kin, namely, friends, neighbors, and other nonfamily network members.

Furthermore, we omitted marriage and proportion of close others, two commonly used criterion variables in previous studies (e.g., Fiori et al., 2006, 2007, 2008; Litwin, 1997, 2001). In our view, including marriage (0 = no, 1 = yes) would tend to, on the one hand, exaggerate the difference between having or not having a spouse in a society that places importance on extended kinship and, on the other, obscure important differences among individuals who are never married, widowed, and divorced. In the Berlin Aging Study sample, for instance, including marriage as one of the criterion variables had led to the identification of two family-focused network types consisting solely of married individuals, two friend-focused network types consisting solely of unmarried individuals, two restricted network types consisting almost
Correlations Among Variables

Table 2 presents the intercorrelations of the profile variables, demographic correlates, and subjective well-being variables. Variables (contact frequency and support exchange) within the same relationship category were highly correlated ($r \geq .73$), but they were uncorrelated between categories, supporting further the need to examine these three sources of support independently. (Note that these high correlations occurred only within relationship categories; when aggregated across all relationship types, contact and support correlated at just .43.)

Social Network Types

Eight criterion variables were used in K-means cluster analysis, namely, total network size, frequency of contact and support exchange with immediate kin, frequency of contact and support exchange with distant kin, frequency of contact and support exchange with non-kin, and engagement in social activity. Standardized scores were used to eliminate scaling difference among variables. Because previous studies have shown consistently a range of four to six clusters in older adults, we began by specifying four clusters and then gradually increased the number of clusters. The choice of appropriate cluster formation was determined on the basis of three criteria: (a) eta square from multivariate analysis of variance (MANOVA) showing the strength of the relationship between clusters and the set of criterion variables, (b) number of cases in each cluster, and (c) meaningfulness of the formed clusters. On the basis of these criteria, a five-cluster solution was found to be most suitable. Consistent with previous studies (e.g., Fiori et al., 2006, 2007), we found four major network types: diverse, friend focused, family focused, and restricted. On top of these, we found a fifth network type (labeled as distant family) solely of unmarried individuals, and a diverse network type consisting mostly of married individuals. Therefore, the presence or absence of a spouse became the most deciding factor in network differentiation in that sample, which, as argued, would not be appropriate for Chinese persons. Moreover, unlike those who choose to remain single throughout their lifetimes, those who become unmarried by widowhood and, to a lesser extent, by divorce may still have the immediate support system intact by virtue of the large number of children and children-in-law who are duty bound to serve them under Confucian ideology (Cheng & Chan, 2006). Hence, instead of including marriage, our criterion measures are not dependent on whether the person has a spouse (e.g., measures based on the vertically extended family as a whole).

Additionally, the proportion of close others (defined as the ratio of inner circle [see following] network members to total network size) was also excluded in the present study, although it was included as a measure of the functional quality of the network in two recent studies (Fiori et al., 2007, 2008). For those with no network member at all, a zero score was arbitrarily assigned (K. Fiori, personal communication, November 8, 2008). However, a person with some network members but none in the inner circle would also receive a score of zero. This measure therefore has a built-in bias that may affect the clustering outcome.

**Results**

**Correlations Among Variables**

Table 2. Descriptive Statistics and Intercorrelations

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Profile variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Total network size</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>2. Freq.: vertical fam.</td>
<td>—</td>
<td>.32***</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>3. Support: vertical fam.</td>
<td>—</td>
<td>.34***</td>
<td>.83***</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>4. Freq.: horizontal fam.</td>
<td>—</td>
<td>.12***</td>
<td>.03</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>5. Support: horizontal fam.</td>
<td>—</td>
<td>.18***</td>
<td>.04</td>
<td>.02</td>
<td>.76***</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>6. Freq.: nonfam.</td>
<td>—</td>
<td>.21***</td>
<td>.01</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>7. Support: nonfam.</td>
<td>—</td>
<td>.20***</td>
<td>.01</td>
<td>.04</td>
<td>.07***</td>
<td>.73***</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>8. Social activity</td>
<td>—</td>
<td>.26***</td>
<td>.15***</td>
<td>.19***</td>
<td>.08***</td>
<td>.10***</td>
<td>.15***</td>
<td>.17***</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>Demographic correlates</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Age</td>
<td>—1.11***</td>
<td>—.24***</td>
<td>—.18***</td>
<td>—.06</td>
<td>—.10**</td>
<td>—.00</td>
<td>—.10***</td>
<td>—.20***</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>10. Gender (women)</td>
<td>—</td>
<td>.19***</td>
<td>.09***</td>
<td>.06</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>11. Married</td>
<td>—</td>
<td>.26***</td>
<td>.44***</td>
<td>.42***</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>Subjective well-being</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Depression</td>
<td>—.25***</td>
<td>—.13***</td>
<td>—.14***</td>
<td>—.04</td>
<td>—.10**</td>
<td>—.09**</td>
<td>—.05</td>
<td>—.23***</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>13. Life satisfaction</td>
<td>—</td>
<td>.24***</td>
<td>.13***</td>
<td>.19***</td>
<td>.04</td>
<td>.09**</td>
<td>.10**</td>
<td>.03</td>
<td>.14***</td>
<td>.19***</td>
<td>.17***</td>
<td>.07**</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>14. Positive affect</td>
<td>—</td>
<td>.29***</td>
<td>.14***</td>
<td>.19***</td>
<td>.03</td>
<td>.05</td>
<td>—</td>
<td>.17***</td>
<td>.12***</td>
<td>.28***</td>
<td>.02</td>
<td>.11***</td>
<td>.08**</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>15. Negative affect</td>
<td>—</td>
<td>.13***</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>.15***</td>
<td>—</td>
<td>—</td>
<td>.11***</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td><strong>M or %</strong></td>
<td>11.15</td>
<td>2.25</td>
<td>0.00</td>
<td>1.09</td>
<td>0.00</td>
<td>2.72</td>
<td>0.00</td>
<td>1.78</td>
<td>72.18</td>
<td>51</td>
<td>27</td>
<td>1.85</td>
<td>4.54</td>
<td>3.10</td>
<td>1.78</td>
</tr>
<tr>
<td><strong>SD</strong></td>
<td>6.96</td>
<td>1.93</td>
<td>4.67</td>
<td>2.15</td>
<td>4.58</td>
<td>2.05</td>
<td>4.61</td>
<td>0.38</td>
<td>7.15</td>
<td>1.15</td>
<td>4.68</td>
<td>2.05</td>
<td>4.61</td>
<td>0.38</td>
<td>7.15</td>
</tr>
</tbody>
</table>

Notes: Freq. = frequency of contact; fam. = family. Ranges are as follows: total network size, 0 – 40; frequency of contact with vertical/horizontal/nonfamily, 0 – 6; support exchange with vertical family, −6.55 – 11.11; support exchange with horizontal family, −5.93 – 13.34; support exchange with nonfamily, −7.28 – 12.14; depression, 0–4; life satisfaction, 1–7; positive and negative affect, 1–5.

$p < .05$; **$p < .01$; ***$p < .001$. 

Downloaded from https://academic.oup.com/psychsocgerontology/article-abstract/64B/6/713/553328 by guest on 24 November 2018
characterized by high support exchanges with the horizontally extended family but by low support exchanges with both the vertically extended family and the non-kin. Details of the profile characteristics of the network types are shown in Tables 3 and 4.

As we did not recruit a representative sample of the population, the distribution of network types was specific only to this sample. Diverse networks comprised 26% of the sample. They were distinguished by larger total network sizes, frequent contacts, high levels of support exchange with network members, and active social participation. On average, immediate kin, distant kin, and non-kin each made up one third of members, and active social participation. On average, immediate kin, distant kin, and non-kin each made up one third of this network type. However, the number of non-kin with whom contact and support exchange were low was relatively small. Distant family networks (18%) had high levels of contact and support exchange with distant kin, average levels with nonfamily, and comparatively sparse contact and support interaction with immediate kin. Interestingly, those with this network type had few immediate family members but roughly equal numbers of distant and nonfamily network members. Finally, 15% of the sample was classified into the restricted network type; these individuals had a small network size, infrequent contact, and low support exchange with virtually all members, particularly non-kin (7% of network) and distant kin (32%). Had marriage been included as a criterion variable, six network types would emerge with the

<table>
<thead>
<tr>
<th>Table 3. Network Types by Defining Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Profile variables</strong></td>
</tr>
<tr>
<td>Total network size</td>
</tr>
<tr>
<td>Frequency of contact: vertical family</td>
</tr>
<tr>
<td>Support exchange: vertical family</td>
</tr>
<tr>
<td>Frequency of contact: horizontal family</td>
</tr>
<tr>
<td>Support exchange: horizontal family</td>
</tr>
<tr>
<td>Frequency of contact: nonfamily</td>
</tr>
<tr>
<td>Support exchange: nonfamily</td>
</tr>
<tr>
<td>Social activity</td>
</tr>
</tbody>
</table>

**Notes:** Means are reported in the original scale with standard scores in parentheses. Values in boldface are the defining peaks of the clusters, which are approximately more than 0.5 SD above or below the mean.

<table>
<thead>
<tr>
<th>Table 4. Network Type Differences by Age, Correlates, and Subjective Well-being</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variables</strong></td>
</tr>
<tr>
<td>Age (years)</td>
</tr>
<tr>
<td>Gender (% women)</td>
</tr>
<tr>
<td>% Close others</td>
</tr>
<tr>
<td>Number of children in network</td>
</tr>
<tr>
<td>Marital status (%)</td>
</tr>
<tr>
<td>Married</td>
</tr>
<tr>
<td>Never married</td>
</tr>
<tr>
<td>Divorced/separated</td>
</tr>
<tr>
<td>Widowed</td>
</tr>
<tr>
<td>Subjective well-being</td>
</tr>
<tr>
<td>Depression</td>
</tr>
<tr>
<td>Life satisfaction</td>
</tr>
<tr>
<td>Positive affect</td>
</tr>
<tr>
<td>Negative affect</td>
</tr>
</tbody>
</table>

**Notes:** Means are shown with the standard deviation (age) or standard error (subjective well-being) in parentheses.

1. Calculated by dividing the inner network size by the total network size; 19 cases reporting no network members (all in the restricted network cluster) were excluded.
2. Distribution of each marital category within network types (column total = 100%).
3. Controlled for age-group (60–74 vs. 75+), gender, and marriage.
4. Multivariate F ratio, based on Pillai’s trace. All other F ratios were based on univariate tests.

*p < .05; **p < .01; ***p < .001.
friend network without a married person, the family-focused network without a friend, and two less distinct diverse network types identical in every aspect except for marital status. Once again, with marital status included, the presence or absence of a spouse, rather than support availability across the board, played a deciding role in classifying networks. Detailed results of this analysis can be obtained from the first author.)

**Age, Gender, Inner Circle, and Marital Status Differences**

As seen from Table 4, significantly more never married individuals belonged to the distant family network. Moreover, there was gender difference across network types. Women were more likely to have diverse and friend networks, whereas men tended to have restricted, distant family, and family-focused networks. In addition, the network types differed in age of the focal person ($\eta^2 = 0.07$); post hoc tests using the Bonferroni correction showed that those with diverse networks were significantly younger than the others, but there was no age difference among individuals with the other network types.

Individuals with restricted networks had a significantly higher proportion of network members in their inner circle than the other network types ($\eta^2 = 0.08$; see Table 4). Further examination of the inner circle composition by MANOVA showed that the network types varied in the distribution (%) of the three relationship categories in the inner circle, Pillai’s $F(12, 3000) = 68.91, p < .001, \eta^2 = 0.22$. Univariate tests showed large differences in immediate, $F(4, 1000) = 136.23, p < .001, \eta^2 = 0.35$, and distant kin, $F(4, 1000) = 191.86, p < .001, \eta^2 = 0.43$, as well as a moderate difference in non-kin, $F(4, 1000) = 30.01, p < .001, \eta^2 = 0.11$. Post hoc comparisons with the Bonferroni correction revealed that compared with individuals with other network types, those having distant family networks had the highest percentage of their inner circles being distant kin and the smallest percentage being immediate kin. Individuals with distant family networks also had a higher percentage of friends in their inner circle than those with diverse, restricted, and family-focused networks. By contrast, the inner circles of friend-focused networks were least likely to contain distant kin. This network type had the highest concentration of non-kin in the inner circle, whereas the distant family network type also had proportionally more inner circle members who were unrelated than the other network types. Moreover, compared with friend-focused and restricted networks, family-focused networks had a significantly higher proportion of the inner circle being immediate kin. Finally, restricted networks had a higher concentration of distant kin in the inner circle than family-focused networks.

**Subjective Well-being by Network Types**

A MANOVA was conducted with depression, life satisfaction, positive affect, and negative affect as dependent variables, and network type as the between-subjects factor (Table 4). As the network types differed by age, gender, and marital status, these were included as control variables. Results showed significant difference in overall well-being across network types ($\eta_p^2 = 0.02$). Subsequent univariate tests revealed significant network differences in all measures of well-being, with a moderate effect on positive affect ($\eta_p^2 = 0.05$) but small effects on negative affect ($\eta_p^2 = 0.02$), depression ($\eta_p^2 = 0.03$), and life satisfaction ($\eta_p^2 = 0.02$; refer to Table 4 for $F$ values).

Post hoc comparisons with the Bonferroni correction (see Table 4) showed that individuals with diverse and family-focused networks were significantly more satisfied with their lives than those with restricted and distant family networks. Moreover, those with diverse networks were significantly less depressed than those with friend-focused, restricted, and distant family networks, and those with family-focused networks were also less depressed than those with restricted networks. However, only one pairwise comparison was significant in the case of negative affect, with diverse networks associated with less negative affect than restricted networks. Finally, individuals with restricted networks reported less positive affect than those with all other network types; the other four network types could not be differentiated from one another except for the lower positive affect in the distant family network when compared with the diverse network. No pairwise comparison was significant between family-focused or distant family networks.

**Discussion**

The current study examined the social network types of Chinese older adults in Hong Kong, with a specific aim to uncover the contribution of extended kinship to their social support systems. To do this, we oversampled individuals who would benefit more from distant kinship (e.g., those never married) so that the contribution of distant kin is more readily identified. Moreover, for the cluster analysis, we included criterion variables that differentiated three broad sources of support in a person’s network, namely, immediate kin, distant kin, and non-kin. Whereas the support measures of contact and functional exchange were highly correlated within each of the three relationship categories, they were uncorrelated across categories. This strongly suggested that the measures tapped three distinct aspects of one’s social network. Their independence also meant that they were given equal weight in the cluster analysis, making network classification based on different kin relations possible. As a result, we found five network types, four of which (diverse, family-focused, friend-focused, and restricted) mirrored what was found in the West (e.g., Fiori et al., 2007, 2008). We found, however, an additional distant family network, with characteristics of extensive contact and support exchange with distant kin but relatively
infrequent contact and low support exchange with immediate kin.

Those who remained single throughout their lives were disproportionately represented in the distant family network. These were individuals without a family stem, who had to rely on siblings, cousins, and distant in-laws. Whereas people with this network had the fewest children by default, their subjective well-being was still higher than those with the restricted network. In fact, having immediate kin who nonetheless were detached might suggest why the restricted network was associated with the poorest well-being indicators. In contrast, such detached involvement with the immediate family was compensated by supportive friendships in the friend-focused network. Consistent with previous studies, individuals with the diverse network were most psychologically healthy, whereas those with the restricted network were least.

The friend-focused network did not differ from the two family networks in subjective well-being, which contradicted Western findings (Fiori et al., 2007). Interestingly, in the study of Japanese older adults, Fiori and colleagues (2008) also found that friend and family networks were indistinguishable in terms of depressive symptoms and morbidity. Western scholars have suggested that despite the family being the preferred support provider (Cantor, 1979; Roberto, Allen, & Blieszner, 2001), family interaction tends to revolve around mundane activities that are rarely emotionally uplifting, whereas activities with friends involve mutual interests and pleasure (e.g., Larson, Mannell, & Zizanek, 1986). This may not be the case for many Chinese, for whom social engagement in the form of family activities is a major source of uplift. Family as an inseparable unit and its cohesiveness are still deeply valued in Chinese and other Asian societies, despite the growing number of nuclear families and the diminishing sense of filial piety (Cheng & Chan, 2006; Xu et al., 2007). In contrast, the supportiveness of friend networks may be reduced by the norms of reciprocity and maintenance of harmony in collectivistic cultures (Kim, Sherman, Ko, & Taylor, 2006), which discourage seeking help from non-kin more than from kin.

At first glance, our family-focused network may seem similar to other family networks that have been reported in studies with Western populations (Fiori et al., 2006, 2008). Nevertheless, as one can see from Table 3, the network we have identified was characterized by high support exchange with distant kin, besides frequent contact and support exchange with immediate kin. Hence, distant kin, although not necessarily in regular contact, also occupy an important position in the family-focused network, which may as well be referred to as an extended family network. On the whole, Chinese older adults can be said to have a strong family in-group bias in the selection of network members (Fung et al., 2008). Such a large family network would mean a robust substitution of support functions (Adams & Blieszner, 1995; Antonucci & Akiyama, 1995) within the larger extended family. Even if certain extended kin are not seen regularly, they can be a reliable source of support at times of crisis. Without corresponding data from existing studies, it is difficult to say whether the family-focused networks identified across cultural groups were more or less the same in nature (cf. Fiori et al., 2007; Litwin, 1997).

The norms of reciprocity and harmony may be part of the reason why those with distant family networks had marginally lower well-being (life satisfaction) than those with family-focused networks, because the norms are stronger for distant than for immediate kin. Nevertheless, it illustrates that the supportive functions of distant kin are very much alive in contemporary Chinese societies, especially for the older cohort. Whether in Chinese/Asian (Xu et al., 2007) or Western societies (Felton & Berry, 1992), the extended family often provides a sense of embeddedness in a supportive network that may be the most crucial quality of the extended family in contemporary societies. Even in Western societies, it has been argued that certain functions of the extended family (e.g., financial support, help with caregiving) remain and that modern technologies allow extended family members to stay connected despite geographic mobility (Litwak, Silverstein, Bengtson, & Hirst, 2003). As the present findings suggest, the protective effects of distant kin are likely to be most prominent when immediate kin are missing. For instance, in a sample from six Latin American countries, unmarried older adults were more likely than married individuals to coreside with extended family members (de Vos, 1990). In light of the challenges of global aging and demographic changes leading to fewer older persons with immediate families (National Institute on Aging, 2007), researchers may find investigations into the roles and functions of the extended family increasingly important.

We acknowledge several limitations in the present study. First, we collected a sample with the majority being unmarried. Such a sample does not represent the general population of older adults, but in our view, using it is an effective strategy for investigating the diversity of social network types. Indeed, we found that the distant family network type was characterized by close contact and support exchange with distant kin, belonging mainly to never-married individuals, followed by those who were divorced/separated. Had we not used this recruitment strategy, a much larger sample would have been necessary to locate a sufficient number of individuals with the distant family network for analysis. Nevertheless, a much larger representative sample of Hong Kong adults would allow more definitive conclusions and would give precise estimates of the distribution of the different network types.

Second, besides the structural and functional aspects of the social network, more attention needs to be paid to other relationship qualities, such as communication patterns and conflicts (Mancini & Blieszner, 1989), in future research. Adding these variables may further differentiate network
types along these lines (cf. Fiori et al., 2008) and reveal further how relationship quality contributes to well-being within specific support structures.

Third, like many other studies of community-dwelling older adults, our sample included relatively healthy persons, for whom instrumental assistance may not be a crucial issue. It would be interesting to find out how Chinese older adults view the different sources of familial support when they begin to experience functional health problems. For example, distant kin can be helpful in times of crisis or emergency, but many support functions are normatively not performed by distant kin, especially forms of support that are either long term, instrumental, or both. Supports of these kinds are usually performed by immediate kin (Litwak, 1985). Similar arguments apply to friends. Thus, researchers may find family-focused networks to be more protective than distant family and friend-focused networks in frail older adults.

Fourth, the importance of the extended family might gradually diminish with successive cohorts as culture and relational patterns may change over time. It is only with future studies that we will know whether the findings seen in this cohort will remain.

Finally, more studies in other societies encompassing the extended family structure will provide further insights into the social support functions of the extended family. As discussed previously, our findings may not be specific to the Chinese alone. More research is needed to examine the protective effects offered by peripheral family members in other cultures.

FUNDING
The preparation of the manuscript was supported in part by Competitive Research Grant CityU14950SH of the Research Grants Council of Hong Kong.

ACKNOWLEDGMENTS
We are grateful to the nongovernment organizations for assistance with data collection.

CORRESPONDENCE
Address correspondence to Sheung-Tak Cheng, PhD, Department of Psychological Studies, Hong Kong Institute of Education, 10 Lo Ping Road, Tai Po, N.T., Hong Kong, China. Email: takcheng@ied.edu.hk.

REFERENCES


Received December 15, 2008
Accepted August 7, 2009

Decision Editor: Rosemary Blieszner, PhD