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# LONELINESS OF OLDER ADULTS IN RURAL CHINA

by

ZHEN GUO

Under the Direction of Heying Jenny Zhan

## ABSTRACT

This study examined factors that influenced loneliness among rural elders in China. Data were collected from the latest wave of Living and Employment of Population Survey in 2005 (provided by Renmin University, China). The sample of this survey consisted of 284 rural elders in China. T-tests was used to examine the influence of gender, marital status, health, financial support, and living arrangements differences in loneliness perception among Chinese rural elders. Multiple regression analysis was conducted to understand the influences of age and socio-economic status on loneliness among the rural elders. This study provided insights for a better understanding of individual, social, and familial factors that influenced subjective loneliness in later life. Findings from this study might contribute to policy-making decisions regarding improvements of psychological well-being among older adults in China.

INDEX WORDS: Loneliness, Population Aging, China, Living Arrangement, Rural-Urban Migration

LONELINESS OF OLDER ADULTS IN RURAL CHINA

by

ZHEN GUO

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of

Master of Arts

in the College of Arts and Sciences

Georgia State University

2009

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2009

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## 1 INTRODUCTION

Humans are communal animals (Rokach, Orzeck & Neto, 2004). No life can be defined alone and nobody can live without social web. But modernization and industrialization bring about isolation and “the age of loneliness” (Nilsson, Lindström, & Nåden, 2006, p. 93). In an era characterized by population aging, more and more people are living longer and alone (Monk, 1988). Thus, loneliness among senior citizens has become a social issue in contemporary societies. Since loneliness is an important predictor of quality of later life and psychological well-being (Victor et al., 2002), gerontologists become interested in examining the risk factors influencing loneliness among older adults.

China has the largest population in the world. Population aging in China is a significant concern among both policy makers and researchers because of its great social and cultural influence. Moreover, since a large proportion of China’s elders reside in rural areas and there is no pension or health care system in rural China, older adults in these areas may be at higher risk for mental health issues. Therefore, this may be an important area for Chinese governments to develop aging programs. So understanding psychological well-being and implications of loneliness among rural elders is a critical issue.

Existing literature and research findings demonstrate that later-life loneliness is associated with individual, familial, and social factors. But most studies have focused on Western societies and there is limited research regarding loneliness among Chinese older adults, especially the rural elders. So whether those identified factors (e.g. age, gender, health, socioeconomic status, living arrangements, and social support) associated with loneliness in Western societies could also apply to Eastern societies is still unknown.

In this research, I explored loneliness among rural elders in China. First, I examined the concept of loneliness. Then I discussed the factors associated with loneliness. Third, I reviewed literature on population aging in China and loneliness expressed by Chinese elders. Fourth, using data collected by Remin University in China about the latest wave of Living and Employment of Population Survey in 2005, I pre-

sented an outline in the study of loneliness among rural elders in China and explored the implications of individual characteristics, socioeconomic aspects, and living arrangements that influenced the loneliness of Chinese older adults.

## 2 LITERATURE REVIEW

### 2.1 Definition of Loneliness

The definition of loneliness varies by theory. In psychodynamic theory, loneliness is described as “a state of mind which is symptomatic of neurosis and which stems from an 'earlier life' which makes it difficult for a lonely elderly person to form relationships” (Donaldson & Watson, 1996, p. 953).

In cognitive theory, loneliness is a subjective perception and assessment of one's social engagement rather than objective isolation (Pinquart & Sörensen, 2001; Gibson, 1986-1987; Donaldson & Watson, 1996; Kraus, Davis, Bazzini, Church & Kirchman, 1993; Andersson, 1982; Bofill, 2004; Nilsson et al, 2006; Beal, 2006). This conception includes subjective feelings of emotional distress, misunderstanding, isolation, lack of social activities, absence of intimate relations, and rejection by others (Heinrich & Gullone, 2006; Gierveld, 2006; Hughes, Waite, Hawkley, & Cacioppo, 2004; Barretta, Dantzer & Kayson, 1995; Victor et al., 2002). According to this definition, self-reported loneliness (an individual's report of loneliness feelings) is a good estimate of one's cognitive status (Donaldson & Watson, 1996).

In interactionist/relational theory (Donaldson & Watson, 1996), loneliness is a state of deficit in relational function (Heinrich & Gullone, 2006; Kraus et al., 1993; Baarsen et al., 2001). In this model, loneliness is divided into two major categories: emotional loneliness and social loneliness (Routasalo, Savikko, Tilvis, Strandberg, & Pitkälä, 2006; Baarsen et al., 2001; Gierveld, 2006). Emotional loneliness is identified as an absence of intimate attachment such as sexual partnership, children-parent relationship, close friendship, and kinship (Dugan & Kivett, 1994; Kraus et al., 1993; Gierveld, 2006; Mullins & Elston, 1996). Social loneliness occurs when an individual's participation in social activities, volunteer work and church declines and his/her social contacts with colleagues, neighbors and friends are limited (Dugan & Kivett, 1994; Kraus et al., 1993; Gierveld, 2006). For example, widowhood is an important indicator of emotional loneliness while geographical migration influences social loneliness (Gierveld, 2006).

## **2.2 Impact of Loneliness**

Loneliness is an important factor in evaluating one's overall well-being, social integration, and isolation (Gierveld, 2006). First of all, loneliness has been shown to influence psychological well-being factors such as hopelessness (Stephoe, Owen, Kunz-Ebrecht & Brydon, 2003; Andrews, Gavin, Begley & Brodie, 2003; Barg, Huss-Ashmore, Wittink, Murray & Bogner, 2006). It also interacts with self-perceived life-satisfaction (Rokach, Orzeck, Moya & Exposito, 2002). What's more, it often correlates to anxiety and depression (Rokach et al., 2002; Rokach & Neto, 2005; Rokach & Bauer, 2004; Barg et al., 2006; Swami et al., 2007; Cacioppo, Elizabeth, Waite, Hawkley and Thisted, 2006).

Secondly, loneliness is further associated with behavioral agitations and biological/mental quality of life through limited social networks and weakened immune system (Rokach, 2004; Kim, 1997). It is also associated with morbidity and mortality (Rokach & Bauer, 2004). More dangerously, loneliness may lead to suicide (Rokach & Neto, 2005; Rokach & Bauer, 2004; Kim, 1997; Swami et al., 2006).

## **2.3 Determinants of Loneliness**

Studies about determinants of loneliness can be summarized into four major categories. The first category comprises contextual or background variables including age, gender, and health conditions and the second category consists of socioeconomic factors such as education and income (Silverstein, Cong & Li, 2006; Victor et al., 2002; Swami et al., 2007; Miedema & Tatemichi, 2003). The third category incorporates living arrangements such as whether or not living with spouse or children (Holmén, Ericsson, Andersson & Winblad, 1992; Savikko et al., 2005; Miedema & Tatemichi, 2003). The fourth category includes social support networks and social activities (Iecovich et al., 2004).

### **2.3.1 Background/Contextual Variables**

#### **a) Age**

Loneliness may happen to all individuals in all ages (Rokach, 2004; Gierveld, 2006; Nilsson et al., 2006). It has been listed as one of the top four psychological problems in the US (Holmén et al., 1992).

Although it is not an illness, it is a dysfunction leading to psychological problems such as depression (Nilsson et al., 2006).

There has been no consensus amongst researchers regarding the interrelationship between age and loneliness (Mullins & Elston, 1996; Fees & Martin, 1999). A number of scholars hold that age and loneliness have a strong positive relationship (Victor et al., 2002; Barretta et al., 1995). In the paper by Holmén and his colleagues (1992), elderly population showed the greatest loneliness in most Western countries. Some studies reported that as many as 40% of elderly people experience loneliness, among whom around 5%~15% reported frequent loneliness (Fees & Martin, 1999; Pinquart, 2003; Pinquart & Sörensen, 2001). A Denmark longitudinal study once showed that the reported prevalence rate of loneliness increased dramatically from the ages of 62 to 72 (Holmén et al., 1992). Older adults aged 65+ spend 48% of their time alone (Adams, Sanders & Auth, 2004). Other studies suggest that loneliness changes little before the age of eighty and rises to 50% prevalence after 80 but level off after 90 (Savikko et al., 2005; Pinquart, 2003; Hughes et al., 2004; Adams et al., 2004). However, another study has discovered that elders cope with loneliness better than were presumed before (Rokach et al., 2004).

Conversely, some researchers think that age does not affect loneliness directly (Fees & Martin, 1999; Rokach & Bauer, 2004). For instance, according to socioemotional selectivity theory, older adults have selected a group of reliable long-term interpersonal relationships to fulfill their expectations and they have more positive perception toward those relationships (Pinquart & Sörensen, 2001; Adams et al., 2004). Rokach and Bauer (2004) mentioned in their paper that age and loneliness might had a curvilinear correlation, in which people were more vulnerable to loneliness in early and later life than mid adulthood. But they also stated that some studies showed that loneliness peaked in adolescence and then declined with increased age (Rokach & Bauer, 2004). Rokach (2000) examined four age groups (youth, young adults, adults, and seniors) and showed that younger adults had the highest level of loneliness while older adults had the lowest scores.

Based on earlier studies, age per se does not seem to relate to loneliness, but there may be some subgroups of aging people who are vulnerable to loneliness due to higher risk of losses and changes in later life (Dykstra, 1995; Fees & Martin, 1999). In old age, one's need of for physical care and emotional closeness may increase. Social ties can be disrupted by chronic disease, loss of spouse/peers, bereavement, grief, relocation, and "empty nest" phenomenon, all of which could lead to increased loneliness (Alpass & Neville, 2003; Beal, 2006; Dykstra, Van Tilburg & De Jong Gierveld, 2005; Hughes et al., 2004; Balandin, Berg & Waller, 2005; Bofill, 2004; Monk, 1988, p. 535). In the meanwhile, later-life changes such as retirement, financial hardship, transportation inaccessibility, chronic disease, and ADL/IADL incapability may also lead to loneliness because they limit everyday activities (Bondevik & Skogstad, 1998; Dugan & Kivett, 1994; Pinqart & Sørensen, 2001; Balandin et al., 2005; Bofill, 2004).

#### **b) Gender**

Whether women or men experience higher loneliness is still not clear so far (Mullins & Elston, 1996). Some scholars find that women report higher level of loneliness and suggest that this is because they are more open to share emotions and are more prone to be influenced by widowhood than men (Savikko et al., 2005; Pinqart & Sørensen, 2001; Victor et al., 2002; Barretta et al., 1995). However, results from other studies show that men report greater loneliness because of their smaller social network, lower family satisfaction, and less likelihood to develop intimate relationships (Mills, Grasmick, Morgan & Wenk, 1992; Mullins & Elston, 1996; Stevens & Westerhof, 2006; Barretta et al., 1995; Pinqart & Sørensen, 2001; Beal, 2006). Findings from Stokes and Levin (1986) indicated that social network density (density of interpersonal connection within one's social network) is a more vital factor for men to evaluate their loneliness than women since men are group-oriented. In recent studies, Stevens and Westerhof (2006) explored the gender difference in social provisions and loneliness scales in later life but found similar results in both genders.

There is a gender difference in life expectancy in that women live longer than men (Monk, 1988). So women are more likely to spend post-retirement life alone with widowhood (Monk, 1988). However, it is found that male elders without partners are more likely to suffer loneliness than their female counterparts, which may be due to men's limited skills to live an autonomous life (Peters & Liebroer, 1997; Koropecj-Cox, 2002; Pinguart, 2003; Ha & Carr, 2005).

### **c) Physical/Mental Health & Disability**

Most studies reach the conclusion that physical/mental health has a strong correlation with loneliness in older adults (Mullins & Elston, 1996; Fees & Martin, 1999). On one hand, physical handicap, mental illness, chronic disease and disability (eg. vision or hearing loss) may result in loneliness; on the other hand, loneliness may also predict mental health and contribute to some physical problems such as bodily aches (Savikko et al., 2005; Victor et al., 2002; Fees & Martin, 1999; Miedema & Tatemichi, 2003). Rokach and his colleagues (2006) indicate that people with functional/physical limitations show distinct loneliness compared to average population. This may be because of limited external contacts and outside activities (Long & Martin, 2000).

### **2.3.2 Socioeconomic Status**

Low-income elders have higher rates of living alone, which may lead to loneliness (Mullins & Elston, 1996). Individuals with lower education may be faced with more isolation and loneliness (Mullins & Elston, 1996). But a number of studies find no discriminated variance among people with different educational levels (Mullins & Elston, 1996).

### **2.3.3 Living Arrangements**

#### **a) Geographic Location**

Some researchers believe that urban seniors are confronted with less communal integration and more loneliness (Mullins & Elston, 1996). But evidence shows that 2/3 of rural elders also report loneliness (Miedema & Tatemichi, 2003). Rural residents are jeopardized by loneliness because of geographi-

cal isolation, low income, low education, children moving to big cities, less social support and limited access to resources and activities (Savikko et al, 2005; Kivett, 1978). In a more recent study, Lauder, Sharkey and Mummery (2004) examined the loneliness of 1241 randomly-sampled subjects and found that geographical location did not count for loneliness. Moreover, parents with closer geographical proximity with children seem to have lower levels of loneliness and psychological distress (Hall-Elston & Mullins, 1999; Ha & Carr, 2005).

### **b) Living Alone vs. Living with Spouse**

Marital status has also been shown a strong predictor of loneliness (Dykstra, 1995; Koropecjy-Cox, 1998; Koropecjy-Cox, 2002). Never married, widowed or divorced men and women are prone to loneliness (Peters & Liefbroer, 1997; Dugan & Kivett, 1994; Iecovich et al., 2004; Mullins & Elston, 1996; Pinquart, 2003; Dykstra, 1995; Koropecjy-Cox, 1998). However, marital status may be not directly associated with loneliness, but indirectly affect loneliness through shortage of social network (Barron, Foxall, Von Dollen, Jones & Shull, 1994). Hence, factors such as cohabitation with younger children and contacts with relatives/friends/neighbors could serve to compensate for lack of social network and prevent loneliness among divorced/widowed couples (Pinquart, 2003).

Unmarried seniors are faced with triple jeopardy – old age, functional limitations, and lack of partnership. Pinquart (2003) extensively examined the difference in functional status between married and unmarried older adults. Functional status affected unmarried older individuals more than married peers because partnership was an effective coping strategy of married couples. Seniors with functional restrictions may depend more on others for care and support, so they are more likely to experience social support deficits, especially when they withdraw from social life not to be a burden for others.

### **c) Living Alone vs. Living with Children**

Living with children is found by some scholars to either reduce or provoke loneliness (Stevens & Westerhof, 2006). First, nursing home residents are more susceptible to loneliness than community

dwellers (Pinquart & Sörensen, 2001). Second, older adults living with children or grandchildren are tested to benefit from stronger familial ties and experience better psychological well-being and lower rates of loneliness than living-alone peers (Silverstein et al., 2006; Routasalo et al., 2006; Hughes et al., 2004; Victor et al., 2002). Affection and support both from and for children could alleviate loneliness, especially with children living at home (Mullins & Elston, 1996; Long & Martin, 2000; Chalise, Saito, Takahashi & Kai, 2007). Miedema and Tatemichi (2003) studied the impact of social network on loneliness among the very old and discovered and concluded that living alone with inadequate children's contact was the strongest contributor to loneliness. What was more, widowed older adults benefit more from support and contact from children than divorced peers, though children's contact and support do not prevent loneliness in married couples (Pinquart, 2003).

Take the oldest old in China for example, 90.1% of them are living with children, 7% are living alone, and 2.9% are living in institutional care facilities (Zeng, Liu, Zhang & Xiao, 2004). Chinese younger adults serve to both reduce loneliness and provide instrumental/financial/emotional support (Zeng et al., 2004). However, rural elders have higher proportion of living alone since traditional living arrangements and intergenerational relationship in rural China are changing when younger generations migrate to urban cities since 1980 (Silverstein et al., 2006; Zeng et al., 2004). As more families become fragmented, there are more elders living alone, so loneliness among older adults might increase (Hughes et al., 2004; Monk, 1988).

However, another study found that the rate of reported loneliness from current cohorts had declined among older adults living alone (Victor et al., 2002). Moreover, Lauder, Sharkey and Mummery (2004) and Ha and Carr (2005) discovered that having younger children living at home posed negative effect on parents' loneliness by reducing participation in other social activities, especially for women. For instance, in Wong and his colleagues' study (2007), older Korean and Chinese Americans tended to have decreased psychological well-being when living with children. Another finding is that middle-aged

women whose children have left home report greater psychological well-being than those living with children (Glenn, 1975).

#### **2.3.4 Social Support**

Based on existing measurements, Wong and his colleagues (2007) found that social support resources were provided through both formal and informal groups and relationships. It was often identified in functional domains including instrumental assistance, information aid, companionship, evaluation, and emotional support.

Social network availability and interpersonal interaction/support are strong predictors of loneliness (Iecovich et al., 2004; Ekwall, Sivberg & Hallberg, 2005; Rokach et al., 2002; Hughes et al., 2004). Firstly, family function exerts crucial impact on loneliness (Kim & Baik, 2002). Children provide caregiving services, emotional support, instrumental aid, and financial assistance in stressful situations (Wong, Yoo & Stewart, 2007; Stevens & Westerhof, 2006).

Although a large body of literature indicates that intergenerational coresidence reduces elders' loneliness, some studies reveal negative effects of coresidence between generations. Lee and Ellithorpe (1982) found that intergenerational exchange and mutual aid from kin had no significant consequence on elders' psychological well-being. In cases, childless parents or parents who have poor relationship with children report an increase in loneliness, especially among women (Ha & Carr, 2005; Iecovich et al., 2004; Koropeckyj-Cox, 2002; Hall-Elston & Mullins, 1999). The effect of childlessness on loneliness is not always consistent. Zhang and Hayward (2001) found that childlessness had no direct influence on older adults' loneliness; childless men scored higher on loneliness. Holmén and his colleagues (1992) replicated that finding but reached further conclusion, stating that neither childlessness nor the number of children explained loneliness. Instead, older adults who maintain good quality of friendship enjoy fulfillment of happiness and social support in old age (Hughes et al, 2004; Mullins & Elston, 1996; Hall-Elston & Mullins, 1999).

Social support can be measured through five factors: size, confidants, density, percentage of relatives' support, and frequency of received support (Levin & Stokes, 1986; Stokes & Levin, 1986). It is found that size, confidant number of social network, and frequency of contact are negatively correlated with loneliness (Dugan & Kivett, 1994; Victor et al., 2002; Fees & Martin, 1999; Levin & Stokes, 1986). But other studies support that loneliness is more likely to be determined by satisfaction level with relationship than size, density, and frequency of contact (Mullins & Elston, 1996; Routasalo et al., 2006; Kraus et al., 1993). According to "hierarchical compensatory model of support", "spouses are the primary source of support, followed by adult children, other close relatives, friends, and others" (Pinquart, 2003, p. 33). Stevens and Westerhof (2006) mentioned two different views regarding the predictive effect of partnership versus friendship: a) friends and children became less predictive of loneliness when partners were available; b) partners could not substitute for the effect of friends and neighbors in reducing loneliness. Levin and Stokes (1986) argue that no significant difference is identified between relative and non-relative support. Pinquart and Sörensen (2001) found that friends and neighbors were more helpful to reduce loneliness than family contacts due to geographical proximity (Gladow & Ray, 1986; Pinquart, 2003; Pinquart & Sörensen, 2001). Moreover, friends become most important for single persons since friendship serves as compensation for partnership under this circumstance (Dykstra, 1995).

What's more, an individual's subjective appraisal of the quality of relationships and intrapersonal isolation is critical in determining one's loneliness (Victor, Scambler, Bowling & Bond, 2005; Dugan & Kivett, 1994; Mullins & Elston, 1996; Kraus et al., 1993; Rokach et al., 2004; Smith & Knowles, 1991; Gierveld, 2006; Fees & Martin, 1999; Hughes et al., 2004; Nilsson et al., 2006). One's perception of social network serves to moderate the feeling of loneliness (Smith & Knowles, 1991). Filial discrepancy, "the gap between what the children do and what the parents expect from them", is linked with parents' psychological well-being (Cheng & Chan, 2006). One's subjective perception of relationships and quality of

contact/communication is far more important than objective factors (Fees & Martin, 1999; Balandin et al., 2005).

## **2.4 Loneliness in China**

### **2.4.1 Population Aging in China**

Population ageing is prevalent in both developed and developing countries. Because of its large population, the effect of baby-boomers, the one-child policy, and increasing life expectancy, China is one of the countries that have the most rapid growth of aging population in the world (Wang, 2004). Although China is experiencing industrialization and urbanization, the majority of the population, roughly 60-70% still resides in rural areas. In rural China, decreased fertility, increased longevity, and rural-to-urban migration (younger people moving to urban areas leads to large numbers of elders living alone in rural areas) are all possible determinants of population aging in rural China (Joseph & Phillips, 1999). By the end of 2000, senior citizens aged 60+ had exceeded 10% while people aged 65+ was almost 7% of the total population in China (Wang, 2004; Zhou, 2004; Li, 2006; Fan & Wu, 2005). It is predicted that elderly Chinese 65 above will make up 8.2% by 2010 and more than 20% in 2050 (Wang, 2004; Joseph & Phillips, 1999; Wang, 2006). Among the 65+ elders, about 70% are living in rural areas, making up 7.33% of the total rural population by 2000 (compared to 6.30% in urban China) and the ratio may reach 14.0~17.7% by 2020 (Wang, 2006; Fan & Wu, 2005; Gu, 2006; Zhou, 2004). More recently, it is reported that the proportion of the oldest old is increasing particularly fast, with anticipated number reaching 80 million in 2050 (Wu, 2005; Wang, 2004; Zhou, 2004; Chen & Wang, 2007).

### **2.4.2 Government Policy Regarding Population Aging in Rural China**

Chinese officials and scholars are concerned that aging population will become a burden to the nation's economy (Liu, 2006). Therefore, policymakers are trying to address the issue through laws, regulations, policies and social values. The Marriage Law (enacted in 1950 and amended in 1954) and Law of Protection of the Rights of the Elderly (1996) were both aimed to prescribe the children's duty to

support aged parents (Ding, 2004). In 1999, National Working Committee on Aging was founded to ensure the implementation and adaptation of aging policies (Ding, 2004). Moreover, there were two security schemes -Five Guarantees Program and Basic Schemes for Rural Social Insurance for Old-age Support at Country Level- to guarantee the minimum living standard in rural areas, but the coverage was low (Ding, 2004). Finally, governments are constantly advocating that filial piety is a valuable virtue of Chinese tradition (Liu, 2006; Liu & Hou, 2006; Cheng, 2000). However, its effect is not strong and some studies suggest that filial piety might decline (Joseph & Phillips, 1999).

### **2.4.3 Rural-Urban Migration**

Rural China has been experiencing urbanization and large-scale migration of younger adults in the last few decades; consequently living arrangements of rural households are changing dramatically. Prior to 1980s, mobile labor force migration from rural to urban China was rigidly restricted by government residential registration through the household regulations (hukou system) (Chan & Zhang, 1999; Liang, 2001; Wu, 1994; Knight & Song, 2003; Ma, Liaw & Zeng, 1997; Guang, 2005). The hukou system (enacted in 1955) was created to classify China's labor force by "occupational status" and "administrative location" (Guang, 2001, p. 479). This regulation also introduced the official definition of urban area: "residential areas which have a permanent population of 2000 or more, with more than 50% being nonagricultural" (Ma et al., 1997). Relocation was only possible when the migrant gained permission from both original registration and destination places (Liang, Chen & Gu, 2002). Consequently, the Chinese labor force was rigidly divided mainly into "urban workers" and "rural peasants" (Guang, 2001, p. 480). Through this system, urban workers took advantage of living supplies, working opportunities, and public services, while rural peasants relied mostly on self-provision or family support (Guang, 2001).

After 1978, market-driven economic strategies were implemented and travel was no longer restricted (Liang et al., 2002; Knight & Song, 2003; Guang, 2005; Guang, 2001). Free travel facilitated the rural-urban migration (Liang et al., 2002; Knight & Song, 2003; Guang, 2005; Guang, 2001). With the rap-

id economic growth and urbanization, demand for cheap labor increased drastically in urban regions, especially industrializing coastal areas (Ma, 1999; Li, 1996; Knight & Song, 2003; Davin, 1996; Zhu, 2005). Meanwhile, there was surplus labor force with limited farmland in rural areas (Knight & Song, 2003; Zhu, 2005). As a result, young people in rural areas frequently relocated into cities, looking for better job opportunities; older parents stayed at home and cared for themselves (Li, 1999; Davin, 1996; Li, 1996).

In the early period of migration, there was a gender disparity: women made up 26% and men made up 74% in 1986 (Wan, 1995). Much of this was due to the traditional expectations for women to fulfill the role as housewives (Wan, 1995). But according to the 1990 census, the ratio of migration of both genders was nearly equal: 54% for men and 44% for women (Davin, 1996). Hence, women's increasing involvement in job market reduced their opportunity to serve as familial caregivers for old parents (Wang, 2004; Du & Du, 2002; Wan, 1995; Rozelle, Guo, Shen, Hughart & Giles, 1999). Every year, thousands of young men and women were recruited to do construction and domestic work respectively (Ikels, 1990). In most cases, one or more adult children in a rural family moved to metropolitan areas while older adults were left behind at home, doing housework, taking care of the house, and raising grandchildren (Wang & Li, 2005; Shao, 2007; Davin, 1996; Tang & Xu, 2007).

Migration and urbanization help to bring back capital to rural areas and reduce the economic gap between urban and rural China (Wu et al., 2005; Tang & Xu, 2007; Yao & Yu, 2005; Davin, 1996; Du & Du, 2002; Liu, 1998). On the other hand, younger generation may become more independent and less available for aging parents (Ding, 2004; Fan & Wu, 2005; Wu, 1994; Li, 2006). Therefore, family relationships might be challenged and aging parents' instrumental (especially caregiving service) and emotional needs may not be met (Yao & Yu, 2005; Du & Du, 2002).

#### **2.4.4 Changing Dynamics of Living Arrangements in Rural China**

In China, typical traditional households are multigenerational households with three or four generations living together (Silverstein et al., 2005). Silverstein and his colleagues (2006) studied the effect

of living arrangements on rural elders' life satisfaction and well-being in China and discovered that living with children especially sons' families improved the life satisfaction and well-being of rural elders. However, more and more Chinese families begin to adopt nontraditional households these days such as "empty-nest households, network households (children and older parents living separately but nearby), by-turns households (network families in which older parents rotate among sons' residents), and skipped-generation households (grandparents living with grandchildren without the middle generation present)" (Silverstein et al., 2005, p. S257). Although these phenomena are common and acceptable in urban areas, elders in rural China are more conservative. They still prefer to live with children, especially sons (Silverstein et al., 2005).

Traditionally, younger adults value collectivism/interdependence and their behaviors are shaped by filial piety (Wu et al., 2005; Wang & Li, 2005). Filial piety (or Xiao) is a "Confucian concept that encompasses a broad range of behaviors, including children's respect, obedience, loyalty, material provision, and physical care to parents" (Zhan & Montgomery, 2003: p.210). That is, children are expected to cohabit with or live next door to parents, respect, obey, and take care of them (Zhan, 2003; Ding, 2004; Wang & Li, 2005). However, as families become more mobile, familial obligations have been reduced and filial piety has declined (Joseph & Phillips, 1999; Ikels, 1990). First, separated geographic location indirectly facilitates independence among younger children and weakens family ties (Wang & Li, 2005). Second, external pressure, which is the primary motivation for young children, especially daughters-in-law, to fulfill the responsibility of caregiving work, has been weakened (Wang & Li, 2005). In the past, if the young children in rural areas refused to take care of the elderly parents, people in the neighborhood would judge them (Zhan, 2003). With increased geographical mobility, peer pressure has reduced (Zhan, 2006). Third, young people put all their efforts to pursue their career goals and may not have time, energy, and income to support their parents (Wang & Li, 2005; Li, 2006; Fan & Wu, 2005; Cheng, 2000). Consequently, Chinese older adults "are caught by the rapid various social and economic changes" and

are increasingly “bewildered and confused” as to what should they expect from young people (Yue & Ng, 1999, p. 222).

In case of illness, few elderly people in rural areas can afford medical care expenses. Declines in availability of children’s caregiving services due to migration add to the severity of the need for care among rural elders (Tang & Xu, 2007). For older adults who have adequate post-retirement income, financial need may not be a big concern, but their needs for emotional support may be comparatively demanding but not easily satisfied (Wang & Li, 2005; Fan & Wu, 2005; Gu, 2006). Chinese scholars argue that most urban/rural parents in “empty nest” families might experience loneliness, dullness, emotional fragility, depression, anxiety, helplessness and psychological frustration, especially older women (Ding, 2004; Du & Du, 2002; Liu & Hou, 2006; Wang & Li, 2005; Shao, 2007; Tang & Xu, 2007; Gu, 2006; Liu, 2004). Yet few studies have actually examined rural elders’ loneliness in China.

Compared to urban elders, rural elders are more adaptable to migration and loneliness. Liu (2004) examined the difference of empty-nest families in rural and urban China, demonstrating that rural middle-aged residents were better at coping with living alone and they often expected their children to pursue better education and career in metropolitan areas. Moreover, as their time spent with spouse and friends increased, their marital and social life satisfactions also increased (Liu, 2004).

#### **2.4.5 Social Support in Rural China**

Social support is provided mainly in two types of resources in China: familial support and institutional/governmental assistance (Li, 2006). Familial support could be reflected through financial, instrumental, physical, and emotional support (Li, 2006). As to the division of familial support, women, especially daughters-in-law, are still the backbone to offer unpaid family care services and domestic work (Joseph & Phillips, 1999). Most evidence shows that sons are supposed to provide ultimate financial support in rural China because “married daughters have traditionally been given over to the husbands’ families according to patrilocal tradition” (Zhan, 2003, p. 210).

In China, rural residents in old age often have limited welfare and no retirement income-security scheme, so they depend mostly on family, especially children, for care and support (Giles & Mu, 2007; Ding, 2004; Joseph & Phillips, 1999; Yao & Yu, 2005; Fan & Wu, 2005; Li, 2006). Even today, there is still an old saying among rural elders: “rearing a son for the sake of old age” (Wu et al, 2005, p. 297).

However, social support is experiencing a shortage and decline in rural China (Joseph & Phillips, 1999; Wang, 2004; Wang, 2006). First, it is observed that the availability of financial/instrumental/emotional support from children to the elderly might have decreased during the past 50 years and the family ties might have been weakened (Wang & Li, 2005; Gu, 2006; Joseph & Phillips, 1999). Changing family structure, one-child policy, detachment from the traditional value, smaller family size, decreased fertility, reduced mortality, women’s increasing participation in labor force, and rural-urban migration are all contributing factors (Zeng, 1986; Shao, 2007; Li, 2006; Gu, 2006; Fan & Wu, 2005; Giles & Mu, 2007; Joseph & Phillips, 1999). On the other hand, China is still confronted with inadequate laws/regulations and underdeveloped community/institutional services (e.g. adult care, senior prevention, nursing homes, and assisted living facilities) to make up for the shrinking familial support in rural regions, both physically and financially (Joseph & Phillips, 1999; Cheng, 2000; Shao, 2007; Tang & Xu, 2007; Ding, 2005; Gu, 2006; Fan & Wu, 2005). In effect, rural elders rarely deem government as a source of care services (Ding, 2004).

## **2.5 Targeting Rural Elders**

Considering the large ratio of the elderly population in rural China, their disadvantaged situation of post-retirement income-security, and their vulnerability to psychological problems, it is essential for gerontologists to understand their well-being. Even though there are abundant interests pertaining older adults in Western nations and many reports about urban elders in Eastern nations, studies regarding the quality of life among rural elders in China have been relatively few. Moreover, most Chinese studies target the middle-aged population, while qualitative and quantitative studies about older adults are li-

mitted. Finally, little is known about the impact of migration and population aging on rural elders. Therefore, I concentrated my study on Chinese rural elders, incorporated migration as a new factor, and examined multiple variables on loneliness.

## **2.6 Significance**

This paper contributed to the literature on loneliness among older adults in an international perspective. Findings of loneliness determinants could be used as benchmarks for international comparison either between developed countries and developing countries or between China and other developing countries. This study provided an overview of quality of life and psychological well-being and multiple predictors of loneliness among rural elders. Furthermore, this research increased the understanding of Chinese older adults in rural areas. Findings from this paper might benefit Chinese governments and policy makers in developing rural aging programs and promoting health and well-being of aging population. Strategic recommendations were given to improve the quality of later life and address the governmental responsibility in the final section.

Finally, this paper analyzed the impact of loneliness on older adults' psychological well-being. Study results might shed light on the study of mental health and treatment design for Chinese older patients.

### 3 THEORETICAL FRAMEWORK

#### 3.1 The Political Economy of Aging

The political economy of aging focuses on how social forces and social contexts shaping the aging process, old age experience, and social policies (Estes, 2001). It incorporates “societal (macrolevel), the organizational and institutional (mesolevel), and the individual (microlevel) dimensions of aging” and delves into the “conflicting and competitive multidirectional relationships between postindustrial capital, the state, and the sex/gender system” within “the interlocking systems of oppression” (Estes, 2001, p. 1-2). The main point of this theory is that micro-level individual experience such as old age loneliness should be interpreted in the context of macro-level changes (e.g. economy and culture). This framework may offer some insight to explain old-age loneliness in Chinese context. China’s social forces such as free-market economy, industrialization, government policy, and rural-urban migration influence living arrangements and social support availability in rural China. These social forces and changing living arrangements jointly affect loneliness and well-being of rural elders. For example, rural elders are less likely to have a pension and public medical care, and, consequently, they are economically disadvantaged and are likely to count on children for care work and support. Hence, with free-market economy, they are more vulnerable to loneliness after younger children migrate to urban areas. Furthermore, cultural norms of filial piety, family responsibilities, and intergenerational relationships in rural China shape social support provision and living arrangement in rural China, which indirectly influences loneliness among rural elders. For example, the cultural context of Chinese social norms has traditionally emphasized adult children’s co-residence with aging parents and their direct care for aging parents. This cultural expectation and practice probably explain why living arrangements influence loneliness among rural elders.

Applying the theory of political economy in the analysis of loneliness among rural elders allows us to understand how the larger social environment such as China’s economic reforms, market econo-

my, and migration is influencing rural elders' aging experience. Furthermore, combining macro, meso, and micro-levels of analysis will provide insight for a better understanding of how various factors jointly contribute to the understanding of loneliness among Chinese rural elders.

### **3.2 The Social Constructionist Perspective of Aging**

The focal point of social constructionist perspective is that the social experience/context gives rise to subjective understandings/conceptions of the world (Gubrium & Holstein, 1999). In the proposed study, I use the individual's subjective feelings and evaluations toward his/her life as the representation of the overall loneliness among Chinese rural elders. Context, whether it takes the form as being stable such as gender or fluid such as health, shapes the subjective perception of loneliness. Older adults construct the meaning of loneliness in a specific context, and later-life loneliness has different meanings to different persons or has different meanings to the same person with different background information. Experiences in migration, changing living arrangements, and social support influence how older adults evaluate loneliness. For example, Chinese rural elders having migrant children and limited sons' support might perceive higher level of loneliness.

Social constructionist perspective will provide insight for a better understanding for the social context of the aging experience among rural Chinese elders. It validates the subjective experience of loneliness as a reality while bringing in the cultural and social contexts to facilitate better explanation. Combining both political economy theory and constructionist theory in this study will allow me to see aging experience of loneliness in the light of both structural and constructionist perspectives.

#### 4 RESEARCH OBJECTIVES AND HYPOTHESES

The objective of this study was to evaluate the influence of individual, familial and social factors that were associated with self-rated loneliness among Chinese rural elders. Earlier literature revealed that living arrangements, socioeconomic conditions, and social support were correlated with loneliness among older adults. Specifically, considering the special cultural background in China, living alone, living with spouse, living with sons, and living with daughters represented different forms of living arrangements. They might have different impacts on loneliness of Chinese rural elders. Previous studies in the West found that health status and income level were negatively related to loneliness among older adults. Whether or not these factors had similar effects on Chinese rural elders was still unclear and deserves our attention.

Earlier research showed social support had significant influence on perceived loneliness. Older adults with higher levels of informal and formal support were predicted to have lower loneliness. Considering the dramatic changes in migration and social support in rural China, one would predict that migration directly affected social support availability and indirectly affected rural elders' loneliness. Finally, uncertain impacts of two background variables - age and gender - were also proposed and analyzed in this study.

Based on the research goals and research findings in earlier literature, three groups of hypotheses were proposed for testing in this study.

*Hypothesis 1: Living arrangements exert influence on self-reported loneliness among Chinese rural elders.*

Based on earlier literature about the effect of living arrangements on predicting loneliness among older people, five hypotheses were proposed for testing. The fifth hypothesis was also formulated on the basis of Chinese cultural context. Previous literature regarding the relationships between Chinese elders' life satisfaction and their living arrangements addressed the importance of the elders'

proximity to sons' family (Silverstein, Cong & Li, 2005). Therefore, the fifth hypothesis was proposed to specifically examine the difference in well-being among rural elders between living with sons and daughters. The five hypotheses were described as follows.

*1A) Rural elders living alone report higher levels of loneliness than those who live with other family members.*

*1B) Rural elders living with spouse report lower levels of loneliness than those who do not live with spouse.*

*1C) Rural elders living with sons report lower levels of loneliness than non-living-with-son peers.*

*1D) Rural elders living with daughters report lower levels of loneliness than non-living-with-daughter peers.*

*1E) Rural elders living with sons report lower levels of loneliness than those living with daughters.*

*Hypothesis 2: There are age, gender and health-related differences in loneliness among Chinese rural elders.*

*2A) There is an age difference in loneliness among Chinese rural elders. The older a person is, the more loneliness they perceive.*

H-2A was proposed because there was no consistent finding pertaining to the age-loneliness relationship (Fees & Martin, 1999). Further, there was some reasonable evidence showing that older adults were more vulnerable to loneliness (Fees & Martin, 1999). So the question of age-loneliness relationship remained to be discussed.

*2B) There is a gender difference in loneliness among Chinese rural elders. Female elders express higher levels of loneliness than male elders.*

Earlier Literature revealed that there was no agreement with respect to gender difference in old-age loneliness (Mullins & Elston, 1996). But female older adults seemed to perceive more loneliness because they lived longer and expressed their loneliness more frequently (Savikko et al, 2005; Monk,

1988). So did female elders in rural China express more loneliness than male because of Chinese traditional culture and rapid socio-economic changes?

*2C) There is a health-related disparity in loneliness among Chinese rural elders. Healthy older adults are less likely to feel lonely than unhealthy peers.*

Earlier research results showed that physical/mental health status affected the loneliness or life satisfaction among general old population (Mullins & Elston, 1996). This hypothesis was proposed to examine this relationship in the Chinese context.

*Hypothesis 3: Chinese rural elders with different socioeconomic status report their loneliness differently.*

It seemed that socioeconomic resources were important to older adults' well-being because lower socioeconomic status might add to adverse events cumulated with age (eg. living alone, isolation, etc) (Mullion & Elston, 1996). Therefore, I proposed two hypotheses as follows.

*3A) Rural elders with lower educational level report higher level of loneliness.*

*3B) Rural elders with higher income report lower level of loneliness.*

*Hypothesis 4: Social Support affects self-reported loneliness among Chinese rural elders.*

Social support was shown to be strongly related to loneliness and well-being of older adults in Western countries (Iecovich et al, 2004). Moreover, in Chinese context, fulfillment of expectations toward cultural behavioral norms and filial piety from children would presumably affect the perception of loneliness and well-being among the Chinese rural elders. Therefore, it was reasonable to propose that social support (both from governments and adult children) would significantly affect self-rated loneliness among Chinese rural elders. That gave rise to *H-4A*, *H-4B*, and *H-4C*.

*4A) Rural elders receiving support from governments report less loneliness than those who do not have such accessibilities.*

*4B) The more familial support rural elders receive, the lower levels of loneliness they report.*

*4C) Rural elders who receive financial support from migrating children report more loneliness than those without financial support from migrating children.*

## 5 METHODS

### 5.1 Setting and Sample

Data used in this study were obtained from the fourth wave of the Living and Employment of Population Survey in July, 2005. Two hundred and eighty-four participants were recruited from rural areas in Sichuan Province. They were asked to fill out an extensive questionnaire including demographic features, socioeconomic status, health conditions, psychological characteristics, financial situations, living arrangements, children-moving-out effects, etc. Non-random sampling design was adopted to collect the data. The initial data included both the middle aged and the elderly and their age ranged from 32 to 85. For the purpose of this study, only those aged 50+ were selected for analysis. This reduced the sample size to 220 respondents.

### 5.2 Measure

**Table 5.1 Categories and Coding of Variables**

Variable	Variable codes
<b><i>Self-reported Loneliness</i></b>	1= never lonely, 2= sometimes feel lonely, 3= often feel lonely
<b><i>Demographic variables</i></b>	
Age	Age number of years
Sex	0= male, 1= female
Self-reported health	1= very bad, 2= bad, 3= so so, 4= good, 5= very good
<b><i>Socioeconomic Status</i></b>	
Annual Income	1= lower class, 2= middle class, 3= upper class
Education	1= illiterate or semiliterate, 2= primary school, 3= junior school, 4= high school or college
<b><i>Living Arrangements</i></b>	
Living alone or not	0= living with other family members, 1= living alone
Living with spouse or not	0= other, 1= living with spouse only
Living with sons or not	0= other, 1= living with sons only
Living with daughters or not	0= other, 1= living with daughters only
<b><i>Social Support</i></b>	
Government support	0= no, 1= yes
Family support	1= spouse, 2= children at home, 3= hiring professionals, 4= other relatives
Financial support from Migrating children	0= no, 1= yes

*Dependent variable.* — The dependent variable in this study was loneliness. Participants were asked to rate their perceived loneliness after children moved out. The response ranged from 1 = never lonely to 3 = often feel lonely (see Table 5.1 for detailed coding).

*Independent variables.* — Independent variables included demographic variables, socioeconomic status, living arrangements, and social support characteristics. Table 5.1 showed the way those variables were classified and coded.

Background variables were demographic features including age, gender, and health condition. Age was measured by chronological years from date of birth. Gender was coded as dichotomous variables where male=0 and female=1. Health condition was a one-item question asking the respondents their self-rated health status with a five point scale where 1 = very bad and 5 = very good (see Table 5.1 for more details).

Of socioeconomic characteristics, annual income was measured by the self-reported total amount of yuan in a year. Here, Chinese yuan or RMB in 2005 had an exchange rate of 750 yuan=\$100. Education was recoded as a four-point scale item ranging from 1 = illiterate or semi-illiterate to 4 = high school or college (see Table 5.1).

Measures of living arrangements were based on questions asking the older adults to fill out the numbers to four categories of family members living in – parents, spouse, children, and grandchildren. More specifically, in each category, they were asked how many spouses, sons, daughters, sons' wives, daughters' husbands, sons' children, and daughters' children were living in. Gaining these basic data, I dummy coded the answers. For example, if an older adult reported zero in all those categories, that meant he/she was living alone. Otherwise, he/she must be living with other family members. So I recoded 1 = living alone and 0 = living with other family members. If he/she reported a non-zero number only under the category of "spouse", then I recoded 1 = living with spouse only and 0 = other. If he/she reported any number greater than zero in the category of "sons" or "son's wives" but zero in the catego-

ry of “daughters” or “daughter’s husband”, that meant he/she was living with son’s family. So I recoded 1 = living with sons only and 0 = other. The recoding procedure was similar for living with daughters. Please note that there was no overlap between living alone, living with spouse only, living with sons only, and living with daughters only. For more details please read Table 5.1.

Social support variables were explored in two dimensions: government support and familial support. Government support was indicated by the question, “Do governments provide any policy-related provision or assistance activities after children’s migration?” Familial support was measured by the question asking who was providing care services after migration. The coding was categorized into four groups: spouse, living-in children, hired professionals, and other relatives. Moreover, to test the effect of children’s migration on financial support for elderly parents, the respondents were asked whether the moving-out children provided financial support after they relocated in urban areas. All of these items were dummy coded by 0= no and 1= yes (see Table 5.1).

### **5.3 Data Analysis**

Data were analyzed using SPSS 14.0 statistical software. The analysis started with frequency distribution of categorized variables for the sample population. To examine Hypotheses group 1, ANOVA was used to examine mean differences in living arrangements. Then, zero-order correlation analyses were conducted to explore relationships between loneliness and each group of independent variables. Finally, multiple logistic regression analyses were conducted to better understand the impact of demographic, socioeconomic, and social support factors on loneliness (Hypothesis 2-4).

### **5.4 Findings**

#### **5.4.1 Profile of the Respondents**

Respondents’ socio-demographic characteristics were shown in Table 5.2. Among all the participants, rural elders aged 50-59, 60-69, and 70+ accounted for 44.5%, 28.6%, and 19.5% of the total sample population respectively. The mean age of the sample was 61.9 (SD = ±8.576). The majority of the

respondents were male rural elders (57.7%). The age and gender distribution reflected by above data was the result of the sampling strategy which over-sampled rural elders over 70 and female oldest-old with the purpose of better comparability between the data sets. Most rural elders rated their health status as bad (30.5%), so so (37.7%) and good (26.8%)

The average annual income among the sample population was 5867.27 yuan (SD = 4498.687). The percentages belonging to different levels of income were 20.9% for lower class, 35.5% for middle class, and 18.6% for upper class. The rate of the rural elders who had no formal educational experience was 48.6% while the rest of them either went to primary school (38.6%) or junior school (10.9%). Only 0.9% went to high school or college.

With respect to living arrangements, a large majority of the respondents were living with other family members (97.7%) at the time of the survey. Specifically, 16.4% of them were living with spouse only, 28.6% were living with son's family only, and 3.2% were living with daughter's family only. Among the rest of the respondents, 25.5% were living with both son's and daughter's family and 21.8% were living in skipped-generation households. These two special forms of living arrangements accounted for almost half of the total population 47.3%.

The large majority of the respondents had received no government support (89.1%). As to family support and financial support from migrating children, missing data were a problematic issue – 78.2% and 94.1% respectively. So these data could not provide us enough information and I did not include them in any further analysis such as t-test, one-way ANOVA test, and regression.

Since the percentage of elders living alone was relatively small, I merged living-alone elders with those living with spouse. Consequently, a variable "living by themselves" was created, which included elders both living alone and living with spouse. Moreover, a significant number of elders were living with both sons' and daughters' family (or extended household). I recoded them as "living with children's family". If they reported living with grandchildren without sons, sons' wives, daughters, and daughters' hus-

bands (so-called skipped generation household), then I recoded them into a new category called “living with grandchildren only”. All of these different living arrangements were mutually exclusive; there was no overlap. Finally, I had five different categories of living arrangements, as shown in Table 5.3.

**Table 5.2 Profile of Respondents (N=220)<sup>a</sup>**

Variable	N	%
Self-reported loneliness		
Never lonely	64	29.1
Sometimes feel lonely	97	44.1
Often feel lonely	57	25.9
Age		
50-59	98	44.5
60-69	63	28.6
70+	43	19.5
Sex		
Male	127	57.7
Female	90	40.9
Self-reported health		
Very bad	6	2.7
Bad	67	30.5
So so	83	37.7
Good	59	26.8
Very good	3	1.4
Annual income		
Lower class	46	20.9
Middle class	78	35.5
Upper class	41	18.6
Education		
Illiterate or semiliterate	107	48.6
Primary school	85	38.6
Junior school	24	10.9
High school or college	2	0.9
Living alone or not		
Living with other family members	214	97.7
Living alone	5	2.3
Living with spouse or not		
Other	183	83.6
Living with spouse only	36	16.4
Living with sons or not		
Other	156	71.2
Living with sons only	63	28.6
Living with daughters or not		
Other	212	96.8
Living with daughters only	7	3.2
Government support		
No	196	89.1
Yes	23	10.5
Family support		
Spouse	31	14.1
Children at home	6	2.7
Hired professionals	0	0.0
Other relatives	11	5.0
Financial support from migrating children		
No	6	2.7
Yes	7	3.2

a. Percentages may not add up to 100% due to missing data.

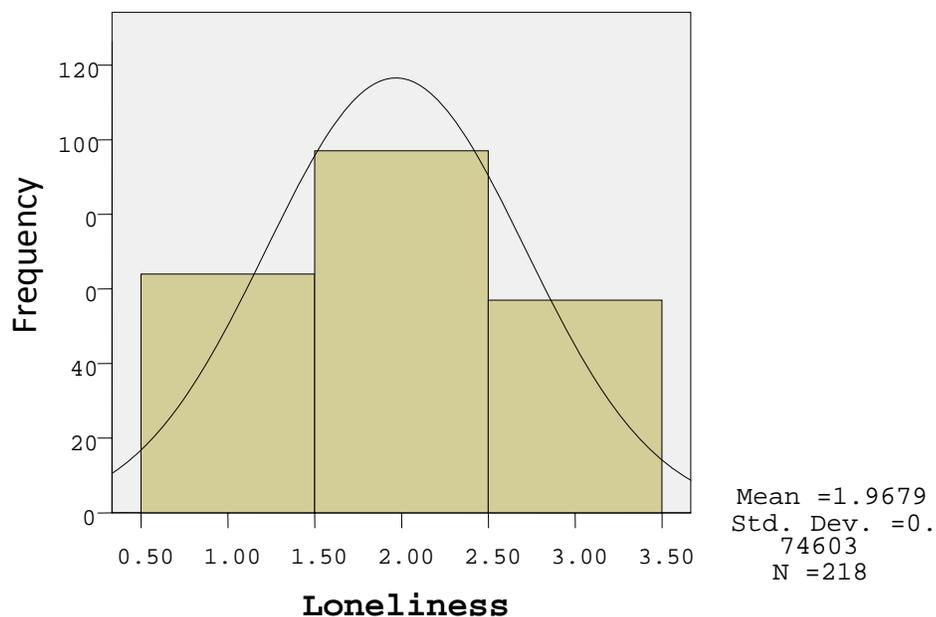
**Table 5.3 Profile of Respondents (N=220)<sup>a</sup>**

Variable	N	%
Living by themselves	41	18.6
Living with sons only	63	28.6
Living with daughters only	7	3.2
Living with children's family	56	25.5
Living with grandchildren only	48	21.8

a. Percentages may not add up to 100% due to missing data.

#### 5.4.2 Levels of Loneliness Reported by the Respondents

Of the respondents, 29.1% reported their loneliness frequency as never lonely, 44.1% as some-times lonely, and 25.9% as often lonely (see Table 5.2). The frequency distribution of loneliness also was shown in Figure 5.1. It showed that the loneliness among rural elders was almost a normal distribution though the majority of loneliness values lied below the mean (1.9679).



**Figure 5.1 Frequency Distribution of Loneliness Among Respondents**

### 5.4.3 Gender Differences in Loneliness

A t-test was conducted to evaluate differences between the two sex groups (male and female) on mean loneliness. The results showed no statistically significant differences between gender groups on loneliness. This finding rejected Hypothesis 2B.

### 5.4.4 Influences of Living Arrangements on Loneliness

Analysis of Variance (ANOVA) was conducted to evaluate the influence of different living arrangements in elders' report of loneliness. The results were shown in Table 5.4.

The results indicated that Chinese rural elders living by themselves reported significantly higher levels of loneliness than those living with their grandchildren. But no statistically significant differences were found on loneliness between rural elders living by themselves and living with sons, daughters, or multiple children.

**Table 5.4 Loneliness in Relation to Different Living Arrangements**

Dependent Variable: Loneliness			
Living Arrangements (I vs. J)	Mean Difference (I-J)	Std. Error	Significance
Living by themselves vs. Living with sons	.22505	.13323	.442
vs. Living with daughters	-.12179	.20135	.974
vs. Living with children	.23751	.13216	.377
vs. Living with grandchildren	.41524**	.14305	.032
Living with sons vs. Living with daughters	-.34685	.19350	.380
vs. Living with children	.01246	.11986	1.000
vs. Living with grandchildren	.19019	.13177	.600
Living with daughters vs. Living with children	.35931	.19276	.339
vs. Living with grandchildren	.53740*	.20039	.060
Living with children vs. Living with grandchildren	.17773	.13069	.654

Note: a. Significance levels: \*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$  (two-tailed test).

Moreover, the rural elders living only with daughters' families reported significantly higher levels of loneliness than those living with grandchildren. There were no statistically significant differences in loneliness between rural elders living with daughters' families and other living arrangements. This

result rejected Hypothesis 1D. Living with daughters did not help to reduce loneliness among Chinese rural elders.

Finally, no statistically significant differences were found on loneliness between rural elders living with sons and other living arrangements. Hypothesis 1C and 1E were, therefore, rejected. The cultural belief of living with sons' families seemed to have no impact on the perception of rural elders toward their loneliness.

#### **5.4.5 Socio-environmental Factors in Predicting the Chinese Elders' Loneliness**

Zero-order correlation coefficients were computed among the variables before further analysis such as regression. Loneliness was found to be correlated with only two variables: gender and living arrangements. Women were more likely to report loneliness. Rural elders who lived with grandchildren reported less loneliness than those living with sons, daughters, or spouse.

Age was found to be correlated with four variables: sex, self-reported health, annual income, and education. Female respondents were younger than male peers. The older a participant was, the worse his/her health status was, the lower his/her income level was, and the less education he/she received.

In addition, gender was also found to be correlated with education. Female rural elders had less education than male elders.

Apart from background variables, self-reported health was also found to be correlated with annual income and government support. Rural elders receiving more income and government support reported better health than their peers.

In addition to the correlation between education and age, sex, and income, educational levels were also found to be correlated with government support. Rural elders with higher educational levels reported receiving more support from Chinese governments.

Finally, living arrangements were found to be correlated only with loneliness and government support was shown to be correlated with self-reported health, annual income, and education, as discussed in previous paragraphs.

#### **5.4.6 Multiple Logistic Regression Model for Loneliness**

Several multiple logistic regression analyses were conducted to understand the influence of various factors on loneliness. Different from ANOVA test which only showed the relationship between living arrangements and loneliness, regression analysis was helpful to determine the contributions of all independent variables to predict the dependent variable. Four conceptually different groups of factors were selected as predictor variables. They were demographic features, socioeconomic factors, living arrangements, and social support. Since the relationship between loneliness and living arrangements was the focal point of this research, I performed four different analyses by changing the variable of living arrangements (living with spouse, living with sons, living with children's family, and living with grandchildren) in my regressions. Here, I merged the data from living only with daughters to living with multiple children, since I only had 7 observations for older adults living only with daughters. The results of the regression analysis were illustrated in Table 5.5 to Table 5.8.

Table 5.5 presented the estimated coefficients and odds ratios of multinomial logistic regression results using "living by themselves" as the independent variable. In the comparison of often feel lonely and never lonely, two variables were significant. In the comparison of often feel lonely and sometimes feel lonely, only one variable was significant. First, the presence of higher income led to the odds of nearly two times (1.980) the likelihood to report "never lonely" relative to often lonely among Chinese rural elders ( $b = .683, p < .05$ ). Moreover, having more education was negatively related to loneliness: elders with higher educational levels were 58% more likely to report "never lonely" and 59% more likely to report "sometimes lonely" compared to "often feel lonely" among rural respondents ( $b = -.543,$

$p < .1$  and  $b = -.525$ ,  $p < .1$  respectively). Age, sex, self-reported health, living with spouse or not, and government support did not have significant effects.

The second regression examined the effect of living with sons and other variables. As seen in Table 5.6, the results were very similar to the results in Table 5.5.

**Table 5.5 Logistic Regression Results: Living by Themselves<sup>a</sup>**

Predictor Variable	Never Lonely <sup>b</sup>		Sometimes feel lonely <sup>b</sup>	
	Unstandardized Coefficient	Odds Ratio	Unstandardized Coefficient	Odds Ratio
<b>Background Variables</b>				
Age	-.022	.978	-.011	.989
Sex	-.606	.546	-.152	.859
Self-reported health	-.090	.914	-.102	.903
<b>Socioeconomic variables</b>				
Annual income	.683**	1.980	.343	1.544
Education	-.543*	.581	-.525*	.591
<b>Living Arrangements</b>				
Living by themselves or not	-.860	.423	-.485	.616
<b>Social Support</b>				
Government support	.395	1.484	.304	1.356
<b>Constant</b>	2.156			
<b><math>\chi^2 = 14.850</math>, <math>df = 14</math>, <math>p = .388</math></b>				

Note: a. Reference category: Often feel lonely.  $N = 220$ .

b. Significance levels: \*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$  (two-tailed test).

Table 5.7 presented the relationship between living with multiple children's family (including living only with daughters) and other variables in predicting loneliness. Clearly, two variables were significant. Different from Table 5.5 and Table 5.6, age was found to be another predictor of loneliness in Table 5.7. Younger old adults were .906 (S.E. = .906) times as much as older old adults to report never lonely ( $b = -.098$ ,  $p < .01$ ) and .946 (S.E. = .946) times as much to report sometimes feel lonely ( $b = -.055$ ,  $p < .05$ ) in comparison with often feel lonely. Sex, self-reported health, education, living with children's family or not, and government support did not have significant effect on loneliness. Finally, it is worth

noting that this regression had a significant improvement over other regression models ( $\chi^2 = 21.708$ ,  $df = 14$ ,  $p < .1$ ).

**Table 5.6 Multiple Logistic Regression Results: Living with Sons Only<sup>a</sup>**

Predictor Variable	Never Lonely <sup>b</sup>		Sometimes feel lonely <sup>b</sup>	
	Unstandardized Coefficient	Odds Ratio	Unstandardized Coefficient	Odds Ratio
<b>Background Variables</b>				
Age	-.025	.975	-.011	.989
Sex	-.584	.558	-.161	.851
Self-reported health	-.135	.873	-.113	.894
<b>Socioeconomic variables</b>				
Annual income	.728**	2.072	.453	1.573
Education	-.548*	.578	-.531*	.588
<b>Living Arrangements</b>				
Living with sons or not	-.399	.671	.285	1.329
<b>Social Support</b>				
Government support	.380	1.463	.338	1.402
<b>Constant</b>	2.205			
<b><math>\chi^2 = 13.924</math>, <math>df = 14</math>, <math>p = .455</math></b>				

Note: a. Reference category: Often feel lonely.  $N = 220$ .

b. Significance levels: \*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$  (two-tailed test).

The last regression was intended to analyze the relationship between living with grandchildren in skip-generation household and loneliness. As shown in Table 5.8, three variables were significant. Again, education and income were significant predictors. Furthermore, living with grandchildren had significant positive relationship: elders who lived with grandchildren were five times (5.209) more likely to report “never lonely” ( $b = 1.650$ ,  $p < .01$ ) and 4.8 times to report “sometimes feel lonely” ( $b = 1.573$ ,  $p < .01$ ) compared to often feel lonely. Background and social support variables were not significant. Again, this regression had a significant improvement over other regression models ( $\chi^2 = 22.553$ ,  $df = 14$ ,  $p < .1$ ).

This regression models for loneliness showed annual income and education were the strongest predictors of loneliness, followed by living with grandchildren. These results added evidence to existing findings that socioeconomic status and living arrangements played important roles in influencing the feeling of loneliness among Chinese rural elders.

**Table 5.7 Multiple Logistic Regression Results: Living with Children's Family <sup>a</sup>**

Predictor Variable	Never Lonely <sup>b</sup>		Sometimes feel lonely <sup>b</sup>	
	Unstandardized Coefficient	Odds Ratio	Unstandardized Coefficient	Odds Ratio
<b>Background Variables</b>				
Age	-.098***	.906	-.055**	.946
Sex	-.036	.965	.238	1.269
Self-reported health	.027	1.028	-.023	.977
<b>Socioeconomic variables</b>				
Annual income	.632*	1.881	.491	1.633
Education	-.211	.810	-.334	.716
<b>Living Arrangements</b>				
Living with children or not <sup>c</sup>	.666	1.947	-.126	.881
<b>Social Support</b>				
Government support	.359	1.432	.498	1.645
<b>Constant</b>	5.171			
<b><math>\chi^2 = 21.708, df = 14, p = .085</math></b>				

Note: a. Reference category: Often feel lonely.  $N = 220$ .

b. Significance levels: \*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$  (two-tailed test).

c. Living with children's family here means living with both sons and daughters or live only with daughters.

**Table 5.8 Multiple Logistic Regression Results: Living with Grandchildren Only<sup>a</sup>**

Predictor Variable	Never Lonely <sup>b</sup>		Sometimes feel lonely <sup>b</sup>	
	Unstandardized Coefficient	Odds Ratio	Unstandardized Coefficient	Odds Ratio
<b>Background Variables</b>				
Age	-.030	.971	-.017	.983
Sex	-.730	.482	-.257	.773
Self-reported health	-.160	.852	-.148	.862
<b>Socioeconomic variables</b>				
Annual income	.750**	2.117	.481	1.618
Education	-.480	.619	-.457*	.633
<b>Living Arrangements</b>				
Living with grandchildren or not	1.650***	5.209	1.573***	4.823
<b>Social Support</b>				
Government support	.329	1.390	.240	1.271
<b>Constant</b>				
	2.265			
$\chi^2 = 22.553, df = 14, p = .068$				

Note: a. Reference category: Often feel lonely.  $N = 220$ .

b. Significance levels: \*  $p < .10$ , \*\*  $p < .05$ , \*\*\*  $p < .01$  (two-tailed test).

## 6 DISCUSSION AND IMPLICATIONS

As stated in the methodology, the main purpose of the study was to understand individual, familial, and social factors that predicted Chinese rural elders' subjective perceptions of loneliness. In this chapter, I focused on the discussions of the meanings of major findings in this study as well as policy implications for these findings. These findings included three aspects: living arrangements, social support, and individual factors.

### 6.1 Social, Cultural, and Familial Context with Rural Elders' Loneliness

#### 6.1.1 Living Arrangements

This study partially supported the argument that living arrangement factors played an important role in influencing loneliness among rural elders. Specifically, elders living with grandchildren expressed less loneliness than all other groups. However, unlike previous studies, other living arrangements were not significantly predictive of loneliness status.

##### a) Living by Themselves

The category of older adults living by themselves included both elders living alone and those who lived with their spouses. Because there were only a few participants falling in the category of living alone (2.3%), this study was not able to explore the differences between living alone and living with other family members. The overwhelming pattern of co-residence among rural elders in this study was consistent with the literature on traditional living arrangements in China, where family ties and filial piety were greatly emphasized and living with families had always been the primary living arrangement for older adults (Silverstein et al., 2005).

The findings in this study failed to support the argument in previous literature that marital status was a strong predictor of loneliness and living with spouse reduced loneliness in old age (Dykstra, 1995; Koropecjy-Cox, 1998; Koropecjy-Cox, 2002). Results from one-way ANOVA and regression analysis suggested no significant difference between elders living by themselves and living with other family

members. Therefore, I would argue that partnership was not privileged over parent-children co-residence in reducing loneliness.

**b) Living with Children**

The study results showed discrepancy from previous findings that Chinese elders benefited from co-residing with younger generations on account of direct social support, strong emotional attachment with children, and fulfillment of the Chinese cultural ideal of filial piety (Silverstein et al., 2005). Based on one-way ANOVA and regression analyses, living with children did not reduce loneliness for rural elders. There was no significant difference between elders living with son and not living with son and between those living with daughter and not living with daughter elders.

Traditionally, rural elders have tended to rely on their male offspring more than female offspring for material and emotional support. This study, on the contrary, found no difference in loneliness between the rural elders co-residing primarily with sons and daughters. This finding deviated from earlier literature that Chinese older adults preferred to live with sons' family because patrilocal co-residence helped to improve their life satisfaction and well-being in later life (Silverstein et al., 2005).

**c) Living with Grandchildren**

A surprising finding of this study was that living with grandchildren exerted effect on reducing loneliness for Chinese rural elders. One might suppose that raising grandchildren in skipped generation household should add to loneliness among rural elders because they have to take care of themselves and provide caring work for their grandchildren at the same time, especially when their health condition is possibly declining. However, analyses showed significant negative relationship between living with grandchildren and loneliness.

This study seems to reveal a potential conflict in the traditional practice of xiao through co-residence and a changing pattern of the practice of cultural norms. Study findings revealed that elders who lived in skipped-generation household reported lower levels of loneliness com-

pared to those living with children. It could be possible that co-residence between elderly parents and adult children, though expected by the traditional norm, or xiao, is becoming more conflict-stricken between the generations and constraining for the elderly parents. Children may view themselves and be viewed by their parents as practicing their filial piety in varied patterns such as through financial assistance or emotional support, rather than co-residing with older parents. Further studies are needed to investigate the implications for this changing pattern of living arrangements and its impact on elders' loneliness.

The emergence of skipped generation households could be explained by migration of adult children. An earlier study found a negative relationship between intergenerational co-residence and grandchildren's willingness to provide parental care (Zhan, 2004). On the contrary, this study reviewed that grandparents reported lower levels of loneliness when living with grandchildren. The implications of this finding could suggest that grandchildren and grandparents may have different preference of living arrangements and intergenerational co-residence. The impact of this new household form deserves great attention in studying loneliness in future.

### **6.1.2 Social Support**

According to the findings, informal support still provided the bulk of social support to Chinese rural elders compared to formal support. Only a few people were covered by government support and no one reported using hired professionals for care services. This could mean that rural elders could not afford institutional care, which would be consistent with earlier literature that government support in rural China was limited and rural elders counted mainly on their family to provide support (Ding, 2004). This is also supported in my data by the extremely small number of elders that were living alone.

Findings could not provide definitive support regarding the relationship between social support and rural elders' loneliness since we did not have enough participants who responded to the questions

regarding familial support and financial support from migrating children. For the question regarding government support, even though everyone answered it, the percentage of respondents answering “yes” was not significant enough to conduct analysis.

## **6.2 Individual Factors with Loneliness Among Rural Elders**

### **6.2.1 Age**

Different from findings from Western countries, results of this study indicated age was negatively correlated with loneliness among older adults in rural China. Younger older adults were more likely to express loneliness than older peers. This might be due to different expectations toward life. Younger older adults might require higher living standards and life satisfaction than older peers because of China’s dramatic development in economic and social realms after 1980s. Or probably younger older adults had more children migrated, so they would certainly felt more lonely. Further study with more data will be needed to identify this proposal.

### **6.2.2 Gender**

Zero-order correlation results showed that sex was a strong predictor of rural elders’ loneliness and women reported more loneliness than men. This finding was consistent with results from earlier studies, which pointed out that women expressed more loneliness because they were more willing to share their feelings (Savikko et al., 2005; Pinquart & Sörensen, 2001; Victor et al., 2002; Barretta et al., 1995). Another explanation is that women live longer than men and they are more vulnerable to widowhood, living alone, and hence loneliness in later life (Monk, 1988). The third possible answer is that they have lower socio-economic status such as lower education and income, which lead to loneliness too. In other words, being female may not directly exert effect on perceptions of loneliness, but affect it through marital status, socioeconomic factors, and living arrangements.

### **6.2.3 Health Status**

Different from earlier literature that found that health status was a strong predictor of old age loneliness, analyses in the current study did not find significant health differences on levels of loneliness. This finding may need further explanation in future.

### **6.2.4 Income**

Results of this study indicated that lower-income rural elders reported higher levels of loneliness than upper-class peers. Regression models displayed a negative relationship between higher income and decreased loneliness. These findings are consistent with the general assumption that the more wealthy the person is, the lower levels of loneliness he/she will feel, due to better income security, health benefit accessibility, and physical/psychological health conditions.

Findings of this study showed that income was the strongest predictor of loneliness among rural elders. Elders with lower income reported higher loneliness. I argue that efforts are needed for income security schemes in rural China. So far the Chinese government has not offered post-retirement income security programs to rural elders, so they counted on younger children to provide physical and financial support (Giles & Mu, 2007; Ding, 2004; Joseph & Phillips, 1999; Yao & Yu, 2005). However, due to rural-urban migration and reduced family size, children may not be able to provide both physical and financial support anymore (Wang, 2006; Wang, 2004). To ensure rural elders' financial security, I argue that social welfare programs and government policies regarding later-life income security should be implemented in the context of rural China. To ensure their physical health and psychological well-being, more community services and facilities are needed to be developed in future.

### **6.2.5 Education**

Although previous studies indicated that older adults with lower education levels were disadvantaged in both socio-economic status and psychological well-being (Mullins & Elston, 1996), the current showed that lower-education elders were less likely to report "often feel lonely" after controlling

for the effects of other factors. First, possibly this is due to different expectations toward social support network. Older adults with higher education may expect more from their children to provide emotional support while elders with less education may expect younger adults to provide mainly financial support. When younger generations left rural China, migrated to urban areas, and lived separately from older adults, they could still provide financial support but may have difficulty offering emotional support. Therefore, better educated elders may still feel lonely even though their financial need was satisfied. Another explanation could be from psychological perspective. Lower-education elders might be taught to accept what they could get. Consequently, their subjective standard for quality of life may be lower. They may be easier to feel satisfied so they might express less loneliness than well-educated people.

### **6.3 Policy Implications**

Based on the findings, there are several future social policy formulations that may be helpful reducing loneliness among Chinese rural elders. First, income continues to play the primary role in loneliness even in very old age. Post-retirement income security for older adults will continue to be one of the most important factors to ensure quality of life and well-being for seniors. It is time to have considerable political and social concern to loneliness of rural elders and related aging issues in China. Social welfare programs and government support should be implemented in future.

Secondly, other socioeconomic effects such as education on loneliness should not be ignored. Education also contributes to rural elders' loneliness. So any community intervention programs helping better educated elders to deal with post-migration loneliness may be useful to reduce loneliness.

Finally, the differences in loneliness between male and female elders need more attention. Because of women's longer life expectancy and lower socioeconomic status, gender disparities may even bring more social problems, such as the lack of health care benefits, lack of pension and social security system, and poorer health. All of them may have negative impact on rural elders' well-being in the long run. High political regards should be given to facilitate pension and public medical care reform to alle-

viate gender disparity and rural-urban inequality which in turn will benefit the disadvantaged people and those most in need.

## 7 CONCLUSIONS

In conclusion, the overall results from t-test, ANOVA, zero-order correlation, and regression analyses showed that gender, socioeconomic status, and living arrangements played important roles in influencing the feeling of loneliness among Chinese rural elders. Annual income and education were the strongest predictors of loneliness, followed by living with grandchildren. Also, increased age is another predictor of loneliness and women were more likely to report loneliness.

This study shed lights on factors related to loneliness. Rural elders were an important group of people in Chinese society. This study was significant in addressing loneliness in this specific group of seniors and provides implications for future research, practice and policy to some degree.

## 8 STUDY LIMITATIONS

Several limitations should be taken into consideration in this research. First, this study used a secondary data, collected by Renmin University. The goal of the research was to understand living conditions and employment situations of migrating population from rural to urban areas. There were very few questions specifically raised to test the loneliness scales of older adults such as using UCLA Loneliness Scale. So I could only use the self-reported questions about loneliness. Second, this survey questionnaire was only conducted in one Province in south China. Since findings based on small sample size might not be applicable to large sample size, findings from Sichuan Province might not be representative to all rural elders who had migrant children in China. Third, this sample was not restricted to older adults per se. This made the number of recruited elders in the study even smaller. It was disadvantageous to use small sample size because the distribution of tested variables might be skewed or some significant variables might become insignificant.

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