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Is Family Relations Related to Health Service Utilization among Older Immigrants: Evidence from Chinese Elderly in the United States

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Abstract

The family is the key for survival and success of the 4.6 million older immigrants in the United States. It is also an overlooked context to understand older immigrants' health service utilization. Most prior studies on this topic either focus on individual or institutional factors that affect how older immigrants use formal health services. Using data from 2011 Population Study of Chinese Elderly in Chicago (N=3,159), this study examined potential linkages between family relationships and health service utilization among US Chinese elderly. Negative binomial and logistic regressions were carried out to investigate whether health service use of these older immigrants are related to positive family relations, negative family relations, and health-related communications among family members. The findings showed that positive spousal or family relations were not associated with either physician visits or hospital stays. However, respondents with more negative family relations had more doctor visits ($\beta = .065$, $p < .05$) and were marginally more likely to use inpatient services ($OR = 1.15$, $CI: .88-1.04$, $p = .08$). Respondents who talked to their spouse for medical concerns were less likely to use inpatient services ($OR = .68$, $CI: .46-.99$, $p < .05$). The findings showed that family relations play a role in Chinese older immigrants' health service use. In addition, family conflict seems to be more influential than close family relations in predicting service use. Practitioners need to thoroughly assess family dynamics to fully understand the resources and barriers for health service utilization among the older immigrant populations.

Keywords

families; family obligations and social changes; older people; health services; care of elderly people; migrants

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INTRODUCTION

Asian Americans are the fastest growing minority group in the United States (Batalova, 2012). Within this growing minority group, older Asian Americans not only have worse self-rated health, more chronic conditions, a greater risk of having a disability, but also lower rates of health service utilization than their White counterparts (August & Sorkin, 2010; Mutchler, Prakash, & Burr, 2007; Turner et al., 2016). Chinese Americans, the largest Asian American subgroup, have the lowest rates of physician visits compared with Whites across all Asian ethnic groups (Nguyen, 2012), and fewer physician visits than their counterparts back in China (Miltiades & Wu, 2008). Further study of healthcare service use factors in this rapidly growing population is needed to provide more insight into how best to address these health disparities.

Prior research has identified numerous individual and institutional factors that explain older immigrants' service use patterns, including language barriers, experience of discrimination, isolation, distrust, conflicting norms/values, and lack of transportation, income, health insurance, and culturally competent providers (Chow, 2012; Damron-Rodriguez, Wallace, & Kington, 1995; Lai & Chau, 2007; Nguyen, 2012; Shin, Song, Kim, & Probst, 2005). Much less is known about the family context and service use patterns. The family is the key for survival and success of the 4.6 millions of older immigrants in the United States (Treas, 2008). Older immigrants' lives are intrinsically linked with their families due to cultural preference, language barriers, economic difficulties, and limited access to entitlement programs (Treas, 2008). While decisions about health care use are often made within the family context across all populations, family relations may play an even more salient role older immigrants' health service use, as they often have smaller social networks and rely more on the family for such decisions (Ma, 1999).

Focusing on the understudied family context, this study used a sizable sample of Chinese elderly in the United States to investigate whether their health service use is related to positive family relations, negative family relations, and communications with family members regarding health issues. As the US population is getting older and more diverse, such information is crucial to address the increasing health care needs of the rapidly growing older immigrant populations.

Conceptual Framework

Andersen Behavioral Model (Andersen, 1995) states that individuals are predisposed to illness and disease based on demographic factors and personal characteristics such as age, gender, race/ethnicity, and education. In addition to health behaviors, enabling and impeding factors such as insurance status, income, prior experience with care, and family and social relations can enhance or obstruct the use of health services. Individuals' perceived need further determines whether or not they seek care (Andersen, 1995).

According to this model, family relationships are hypothesized to be an enabling or impeding factor for older immigrants' health service use. Positive family relations may facilitate older immigrant's use of health care by providing health care information, assisting with health care decisions, encouraging physician visits, bridging language/cultural gaps,

and providing concrete assistance such as transportation, financial support, and help with paperwork (Aroian, Wu, & Tran, 2005; Pang, Jordan-Marsh, Silverstein, & Cody, 2003). Conversely, positive and supportive family relations may also be an impeding factor for older immigrants' service use by providing a mechanism for them to seek help within the home/family instead of using formal services (Marin, Escobar, & Vega, 2006). On the other hand, negative family interactions and strains may turn older immigrants to formal services due to older immigrants' desire to stay independent, but they could also act as barriers as a result of fewer financial, instrumental, and emotional resources available (Leclerc, Jensen, & Biddlecom, 1994).

Empirical Findings

Existing evidence is mixed regarding how family relations may affect health service use among immigrants. Pointing to the enabling function of family relations, several studies found that older immigrants who were married, who lived with family members, who had more children or children living nearby, who had frequent interaction with family members, and who had greater informal support reported more health service use (Aroian, Khatutsky, Tran, & Balsam, 2001; Burnette & Mui, 1999; Calsyn & Winter, 2000; Kuo & Torres-Gil, 2001; Lai & Chau, 2007; Miltiades & Wu, 2008). Conversely, two studies reported that Mexican immigrants with more children and higher levels of informal support had decreased service use, as strong family ties may supplement the need for formal health care (Nandi et al., 2008; Pescosolido, Wright, Alegria, & Vera, 1998). A study on Chinese older immigrants also found that the strong cultural norm of filial piety, that is, children's sense of duty to care for older parents, deterred Chinese elderly's use of formal services because that would indicate children's failure to fulfill their family obligations (Aroian et al., 2005). In addition, two studies on Asian immigrants reported lack of associations between informal support from the family and healthcare utilization (Chang, Chen, & Alegría, 2014; Ting & Hwang, 2009).

Studies have highlighted the importance of the emotional aspects of family relations in facilitating service use of older immigrants. For instance, Ta and college (2010) reported that having emotionally close family ties was predictive of a reduced likelihood of using mental health service among Asian immigrants. Hansen and Aranda (2012) further found that emotional, instead of instrumental support, had a stronger effect on health service use among older Latinos with low language proficiency. Another study of Chinese older immigrants found that even when practical assistance such as interpretation or transportation was not needed from the family, the emotional support such as companionship and sharing feelings and concerns played an important role in older adults' accessing and using care services (Liu, Cook, & Cattán, 2017). Even having candid conversations about health-related concerns may help family members better identify the care needs of older immigrants, facilitating their health care use (Cornwell, Schumm, Laumann, & Graber, 2009).

Among the very limited studies on negative family relations (e.g., conflicts, strains) and health service use, two studies consistently reported that whereas family cohesion was not predictive of service use among Chinese and Asian immigrants, greater conflict in the family was associated with an increased likelihood of service use because such conflictual relations

may act as a significant stressor in immigrants' lives (Abe-Kim, Takeuchi, & Hwang, 2002; Chang, Natsuaki, & Chen, 2013). These findings suggest that cohesive and conflictual family relations may have unique contribution to older immigrants' decisions of seeking formal health care.

The Family Context of Chinese Immigrants

In general, Asian cultures emphasize collectivism, family solidarity, and priority of family's needs over individual needs (Lum et al., 2015). Such a "bounded solidarity" represents a major social capital for Asian immigrants (Leclerc et al., 1994). Research has shown that Asian Americans prefer seeking support from informal ties compared to professional services and tend to employ collectivistic coping strategies such as familial coping and forbearance to deal with difficult events (Turner et al., 2016). For Chinese immigrants, families are the primary, if not the sole, source of elder care (Guo, Liu, & Chi, 2012). Compared to other ethnic groups, Chinese older immigrants have fewer sources of support besides their adult children and often turn first to their children for various support (Wong, Yoo, & Stewart, 2007). The family plays a major role in linking Chinese older immigrants to the healthcare network through helping with assessment of health status, encouraging physician visits, navigating the healthcare system, processing paperwork, and providing translation and transportation (Miltiades & Wu, 2008).

However, this exact cultural norm of family solidarity is also a common reason for not seeking professional services. Many Chinese Americans believe that family members have the duty to care for older family members with minimal outside assistance (Liu et al., 2017). Seeking help outside the family and using certain social services such as nursing homes and home health aides may be an affront to the family norms of filial piety, privacy, and mutual reliance (Aroian et al., 2005; Turner et al., 2016). Chinese older immigrants were also reported to feel embarrassed if their children failed to meet familial expectations by not being able to provide care when needed (Aroian et al., 2005).

Despite strong family bonds, Asian Americans experience more family discord than both Latinos and Whites (Lee & Liu, 2001). Asian immigrants were also reported to have more family conflict than White and the native-born groups, likely due to the stressful migration and acculturation process (Walton & Takeuchi, 2010). First-generation Asian Americans in particular reported greater intergenerational family conflict due to acculturative stressors (Chang et al., 2013). A recent study more specifically on Chinese older immigrants reported that family and spousal conflicts were prevalent among this population, particular among those who had fewer coping resources (Guo, Dong, & Tiwari, 2017). Such conflictual family relations could be a major barrier against older immigrants' health service use if the family is the only bridge linking these older adults to the formal health care system.

The Present Study

Previous research has yielded competing theoretical accounts and mixed empirical findings on family relations and service utilization among older immigrants. It also revealed an interesting combination of high solidarity and high conflict among Chinese immigrant families. Together, these findings point to the value of assessing both positive/supportive and

conflictual family relations in understanding help-seeking behaviors of Chinese older immigrants. In this study, we asked the research question: whether and in what ways Chinese older immigrants' health service utilization is related to their positive family relations, negative family relations, and communication about health-related concerns with the family members?

METHOD

Sample

Data were derived from the Population Study of Chinese Elderly in Chicago (i.e., PINE), the largest population-based study on Chinese community-living older adults in the United States (Dong, Wong, & Simon, 2014). Relying on the principle of Community-Based Participatory Research, PINE recruited 3,159 Chinese older adults aged 60 and older in the greater Chicago area from more than 20 social service agencies, religious organizations, and senior apartments between 2011 and 2013, yielding a response rate of 91.9%. Respondents provided written consent. Interviews were then carried out in respondents' home by trained interviewers in the language preferred by the older adult. All study procedures were approved by the Institutional Review Boards of the [blind for review]. PINE is representative of the Chinese elderly in the Chicago area in key demographic, socio-economic, and household characteristics (Simon, Chang, Rajan, Welch, & Dong, 2014). The working sample consisted of 3,053 older adults who reported valid information on family relations and health service utilization. Older adults who had missing data (3.4% of the original sample) were significantly older, more likely to be widowed, and had more activities of daily living (ADL) limitations than those who were in the working sample. The two groups did not differ in their gender composition, education, income, average length of stay in the United States and acculturation level.

Measures

Health service use.—Respondents reported number of physician visits and hospitalization in the last two years. Given that less than 30% of the respondents had any hospital stays during the time frame, number of hospitalization was further coded into a dummy variable indicating whether the respondent was ever hospitalized in the last two years (1 = yes, 0 = no).

Family relations were measured by positive family relations, negative family relations, and communication with family members on health-related concerns. All the items were drawn from the National Social Life, Health, and Aging Project (NSHAP, Cornwell et al., 2009). Respondents first rated their relationship with spouse on two positive items (open up to, rely on for help) and two negative items (felt too much demand, been criticized) on a three-point scale (1 = hardly ever, 2 = some of the time, 3 = often). The same probes were then asked in relation to family members. In accordance with other studies using the same indicators (Litwin, 2011; Shiovitz-Ezra & Leitsch, 2010), we added the two positive items and the two negative items, separately for spouse and family members, yielding four relationship variables (i.e., *positive spousal relations*, *negative spousal relations*, *positive family relations*, and *negative family relations*).

Open communication with family members about health concerns is an important aspect of supportive family relations, because such discussions enable family members to better identify and deliver the needed support and care to the individuals (Cornwell et al., 2009). This study, as the NSHAP, further asked the respondents to report how likely they would talk to the spouse or the children, respectively, for health problems or medical treatments (1 = not likely, 2 = somewhat likely, 3 = very likely). If the answer was 3 (very likely), the respondents were viewed as having communications with family members on health related issues. This resulted in two dichotomous variables, named “talking to spouse for medical concerns” (1 = yes, 0 = no), and “talking to children for medical concerns” (1 = yes, 0 = no), respectively.

Control variables included age (in years), gender (1 = female), and marital status (1 = married). In addition, enabling factors included education (in years), annual household income (1 = \$0-\$4,999, 2 = \$5,000-\$9,999; 3 = \$10,000 or above), having insurance (1 = yes), years of residence in the US, and level of acculturation. Level of acculturation was assessed by 12 questions adopted from the Short Acculturation Scale for Hispanics (Marín, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987), which measures respondents’ preference for speaking a given language in different settings and preferred ethnicity group with whom they interact (ranging from 1 = only Chinese/all Chinese to 5 = only English/all Americans). Sum scores (12 – 60) were calculated, with a higher score indicting a higher level of acculturation ($\alpha = .91$). In addition, physical health was measured by Katz Index of Activity of Daily Living (ADL) (Wallace & Shelkey, 2007). Sum scores were calculated (0 – 24), with a higher score indicting more functional limitations ($\alpha = .92$).

Data Analysis

We first presented sample characteristics and then Spearman’s correlations among the key study variables. Given that number of physician visits is a count variable, we used negative binominal regressions to test whether it is associated with various family relations. Negative binomial models allow unexplained variations among individuals that reflect differences associated with unobserved predictors, a major advantage over Poisson regressions (Gardner, Mulvey, & Shaw, 1995). To test whether family relations are related to hospital stays (1 = yes, 0 = no), logistic regressions were used. For all the regressions, we entered the following variables sequentially to examine the individual influence of positive relations, negative relations, and communicating with family members about health concerns: control variables and enabling factors (Model 1), positive spousal and family relations (Model 2), negative spousal and family relations (Model 3), talking about medical concerns with spouse and the family (Model 4), and all the variables (Model 5). All the statistic analyses were performed in STATA 9 (StataCorp, 2005).

RESULTS

Table 1 summarizes sample characteristics. The respondents were on average 73 years old. The majority of them were women (58%) and married (71%). They had an average 9 years of education, and only 15% had annual incomes of \$10,000 or more. The majority of them (76%) had some forms of health insurance. On average, the respondents had stayed in the

US for 20 years, but had low levels of acculturation ($Mean = 15.25$ on a scale from 12 to 60). Overall, they reported close relationships with spouse and family members ($Mean = 4.27$ and 4.87 , respectively, on a scale from 2 to 6), and low levels of negative relations with spouse and the family ($Mean = 2.39$ and 2.20 , respectively on a scale from 2 to 6). About 63% of the respondents reported very likely to talk to spouse for medical concerns, whereas 87% of the respondents reported very likely to talk to children for medical concerns. On average, the respondents had seven physician visits and about 30% had been hospitalized in the past two years.

Table 2 presents Spearman's correlation coefficients of the key study variables. The results demonstrated that having a close relationship with spouse and talking to spouse for medical concerns were associated with fewer doctor visits and a lower chance of being hospitalized. Having close relationships with family members was also associated with a lower chance of being hospitalized, but not with fewer physician visits. Having negative spousal relations was associated with fewer physician visits, whereas having negative family relations was associated with more physician visits. None of the negative relations was associated with hospitalization. Talking to children for medical concerns was also not associated with the two outcomes.

Table 3 summarizes the results of negative binomial regressions on physician visits in the last two years. The results remained consistent across all the model showing that among the six indicators of family relations, only having negative family relations was associated with more doctor visits ($\beta = .065, p < .05$). Other significant predictors of doctor visits included older age ($\beta = .008, p < .001$), having insurance ($\beta = .774, p < .001$), longer residence in the US ($\beta = .006, p < .001$), and more ADL difficulties ($\beta = .029, p < .01$). Respondents with an annual income that was more than \$10K had fewer doctor visits than those who had an annual income that was lower than \$5K ($\beta = -.234, p < .01$).

Table 4 reports results of logistic regressions on hospitalization. The findings show that regardless of examining individually or collectively, having negative family relations were associated with a higher chance of using inpatient services. Such an association approached statistical significance ($OR = 1.15, CI: .88-1.04, p = .08$). In addition, older adults who talked to spouse for medical concerns were less likely to be hospitalized ($OR = .68, CI: .46-.99, p < .05$). Those who were older ($OR = 1.03, CI: 1.01-1.04, p < .001$), had higher education ($OR = 1.03, CI: 1.01-1.06, p < .05$), had insurance ($OR = 1.74, CI: 1.27-2.38, p < .001$) and with more ADL difficulties ($OR = 1.16, CI: 1.10-1.20, p < .001$) were more likely to be hospitalized. Similar to physician visits, older adults with higher income (\$10K +) were less likely to use inpatient services than those of lower income (below \$5K, $OR = .60, CI: .41-.87, p < .05$).

DISCUSSION

Positive Family Relations and Health Service Use

Focusing on the family as a crucial context to understand older immigrants' health care use, this study examined the ways in which various family relations may be associated with health service use among Chinese older immigrants. Overall, respondents in this study

reported relatively high levels of emotional closeness with both spouse and family members. However, such close family relations were not associated with either doctor visits or hospitalization when controlling for demographic, enabling, and needs variables. Combined with findings that ADL difficulties and having insurance were consistent predictors of more doctor visits and a higher chance of hospitalization, this finding seems to point to the very practical aspect of health service utilization. Such service use may be mainly needs driven and greatly affected by the affordability of the care (i.e., having health insurance) in comparison to family relations.

The lack of association between positive family relations and health service outcomes might be attributive to the overall low economic status of the respondents in this study. More than 85% of the respondents had an annual income that was lower than \$10K, which was below the poverty line (\$11,484/individual in Illinois in 2011) (Social Impact Research Center, 2013). Although the information on health insurance type was not available, it is likely that the sample was largely enrolled in Medicaid, given that the majority of the respondents were also eligible to receive Medicaid (the income threshold was 120% of the poverty line, about \$13,780/individual) (Watts, Cornachione, & Musumeci, 2016). The speculation that the sample was generally enrolled in Medicaid seems to be supported by the finding that respondents with higher income had fewer doctor visits and hospitalizations than those with lower income (Tables 3 & 4), possibly because those with a higher income were generally enrolled in Medicare and it may cost them more to use various services than those with lower income and enrolled in Medicaid. If our sample mainly captured the experience of a group of low-income older immigrants as these number indicate, it is likely that the family members of these older adults also struggled with their own status and financial security in the host society, or also have limited understanding of the health care system in the United States (Kuo & Torres-Gil, 2001). In this case, strong family ties may not readily transfer to practical support such as language brokering, financial support, or help with navigating the health care system, and consequently have limited influence on older immigrants' access and use of health services.

Negative Family Relations and Health Service Use

A notable finding of this study was that Chinese older immigrants with more negative family relations had more doctor visits and were marginally more likely to be hospitalized than those with fewer negative family relations. These findings were consistent with prior research (Abe-Kim et al., 2002; Chang et al., 2013), showing that having family conflict precipitated older immigrants' help seeking behaviors more than the absence of supportive relations in the family. Unlike other social relations that are often voluntarily formed, family relations are often biologically bonded and are difficult, if not impossible, to terminate (Krause & Rook, 2003). Thus, having conflictual or disturbed family relationships might be a chronic stressor for older adults, posing significant distress for both physical and psychological well-being. Such influence might be intensified in the immigration context, as most older immigrants heavily rely on their families for various support (Treas, 2008). Having to rely on the family for support but having tense relationships with family members could act as profound interpersonal, emotional, and financial stressors for older immigrants, impairing their well-being and increasing the need for health care services.

It's interesting to note that it was the negative relationship with family members, which often referred to adult children and not the spouse, was predictive of more service use. It's well documented that intergenerational conflict is prevalent in immigrant families due to factors such as differences in language ability, levels of assimilation into American culture, and expectation on family interactions across generations (Glick, 2010). Family cultural conflict was associated with a higher prevalence of anxiety disorders among Asian and Latino immigrants (Guo, Li, Liu, & Sun, 2015). In the Chinese context, Chinese culture is deeply rooted in hierarchical social structures that emphasize appropriate status of each member in the society, and children are expected to show not only respect but also obedience to the parents (Lum et al., 2015). In addition, family norms of cohesion and harmony prevail in the Chinese culture. Given these cultural contexts, the presence of conflictual relations with children may diminish Chinese older immigrants' sense of authority in the family and precipitate a great deal of distress or even shame (Abe-Kim et al., 2002), increasing their risks of developing physical and mental diseases and consequently their chance of using healthcare services.

In addition to being a significant risk factor for individual well-being, negative family relations may further inhibit older immigrants from relying on the family for practical support with health care when needed, and turn them to the formal health care system instead. A sick older immigrant with tense relationships with children may end up in a hospital receiving needed care instead of staying at home and receiving care from the children.

Talking about Health-Related Concerns and Health Service Use

Besides positive and negative relationships, this study also examined whether having conversations about health concerns with spouse or family members was associated with health care use. Although these measures also capture family cohesion to some extent, they had unique contributions to the use of inpatient services beyond the close spousal and family relations. Specifically, our findings showed that having such conversations with a spouse, not children, was associated with a lower chance of being hospitalized. Such conversations may reflect the spouse's greater concerns over an older immigrant's health status, which may be linked to better understanding of the needed care, and a greater willingness and commitment to provide care when needed, reducing the likelihood of this person going to a hospital for certain services. This finding highlights the important role of the spouse in providing informal care to older immigrants that may prevent them from entering a hospital. Prior research on American older adults similarly reported that spouses are more likely to be primary caregivers, provide high levels of care, and are less likely to withdraw their caregiving role than other informal helpers (Pinquart & Sörensen, 2011).

Limitations

The findings reported above shall be interpreted cautiously due to several limitations of study design. First, due to limitations of secondary data analysis, we didn't distinguish service utilization due to physical versus mental health concerns. A study of Korean Americans showed that whereas the majority of the respondents preferred to go to friends and religious consultation for mental health problems, most of them first visited physicians

for physical health problems (Cheung, Leung, & Cheung, 2011). In this sense, family may play a different role in older immigrant's use of physical versus mental health services. Such potential distinctions should be carefully examined in future research. Second, although this is the largest population-based study on Chinese elderly in the United States, it is difficult to infer causal relationships due to its cross-sectional designs. For instance, it's likely that higher family conflict was positively associated with service utilization because more doctor visits and hospitalization triggered family conflict. Future studies using longitudinal data could better test directional paths. Recall bias is another limitation. The respondents may not accurately report their health service use, particularly physician visits, in the past two years. Lastly, family dynamics are not always best captured by survey data or numbers. Qualitative studies that provide detailed accounts on how family cohesion or conflict translate into use of services will help researchers and policy makers better understand caregiving resources and needs of individuals from diverse cultural backgrounds.

Implications

Despite these limitations, our findings have some important practical implications. Our results indicate that family conflict was associated with an increased use of both physician visits and hospital stays among the Chinese older immigrants. When working with this population, practitioners may encounter factors as multigenerational households, language barriers, and conflicting cultural and family values. In formulating recommendations for practice with older immigrants, intergenerational conflict must not be ignored. While the goal is to increase physician visits in the form of preventative care and health screening among this population which typically underutilizes health services, it is also important to ensure that they are seeking services for appropriate care and not for issues that could be dealt with at home with increased support or more positive family interactions. Due to the rising costs of inpatient stays and the focus on providing care in the community settings, more support shall be provided to family caregivers of older immigrants to promote family cohesion and reduce conflict, which in turn may reduce the cost of formal health care system.

Also, given that older immigrants who had conversations of medical concerns with their spouse were less likely to seek inpatient health services, educational programs shall be designed to enhance health literacy and knowledge of the health care system not only among older immigrants, but also their caregivers. From the health care providers' perspective, practitioners may need further training in geriatric issues to address concrete services in addition to the psychosocial needs. Such services can include resources for learning English, information on transportation and respite care, and navigating the community and health care system.

Overall, by focusing on the family context, our findings show that when providing health care to older immigrant populations, the family and social situation of the older adults must be thoroughly assessed to better understand the role of family relations and informal supports in their lives. Practitioners should be familiar with the influences of cultural values and family norms of the populations they serve and be sensitive to family dynamics that are often not assessed in health care delivery. Addressing issues of family conflict,

overdependence, and reminding the older adult of hospital and physician visit limitations, not only require cultural competence, but also empathy and respect.

CONCLUSION

Relying on a sizable sample of Chinese elderly in Chicago, this study sheds lights on how the family context may shape the health care behaviors of older immigrants. Our findings failed to support the enabling function of families in older immigrants' health service utilization, possibly due to the overall lower socioeconomic status of the respondents. However, family conflict, specifically intergenerational conflict, seems to be more influential in precipitating the use of both physician visits and hospital stays among this population, than the absence of close family relations. In addition, having conversations with spouse regarding health issues may lower older immigrants' chance of inpatient hospital stays. These findings are useful to develop effective healthcare practices that incorporate the family context to better serve diverse populations. Future research efforts should be focusing on better understanding mechanisms by which family relations facilitate or hinder treatment initiation, and understanding and encouraging collaboration between formal and informal support for the rapidly increasing immigrant population.

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What is known about this topic:

- Older non-white immigrants have different patterns of health service use compared to older White or native-born counterparts
- Prior studies have identified numerous individual and institutional factors that affect older immigrants' service utilization.
- The family is the key for survival and success of older immigrants.

What this paper adds

- Family relations are related to health service utilization among Chinese older immigrants.
- Family conflict is more influential in precipitating both physician visits and hospital stays of Chinese older immigrants than the absence of close family relations.
- Having conversations with spouse regarding health issues may lower older immigrants' chance of inpatient hospital stays.

Table 1.

Sample Characteristics of the PINE (N =3,053)

Characteristics	Range	Mean / %	SD
Predisposing Factors			
Age	60 – 105	72.81	8.30
60–69		41.94%	
70–79		36.71%	
80 and over		21.35%	
Gender			
Men		42.03%	
Women		57.97%	
Marital status			
Married		71.32%	
Widowed		24.53%	
Separated or divorced		4.15%	
Enabling Factors			
Years of education		8.72	5.05
Personal annual income			
\$0–\$4,999		33.32%	
\$5,000–\$9,999		51.78%	
\$10,000 or above		14.90%	
Having insurance		75.98%	
Years in the US	0.1 – 90	20.02	13.18
0–5		12.35%	
6–10		14.51%	
11–20		30.68%	
21 or above		42.46%	
Level of acculturation	12 – 60	15.25	5.12
Health-Related Needs			
ADL difficulties	0 – 24	.39	2.12
Family Relations			
Positive spousal relations	2 – 6	4.27	1.76
Positive family relations	2 – 6	4.87	1.25
Negative spousal relations	2 – 6	2.39	0.81
Negative family relations	2 – 6	2.20	0.57
Talking to spouse for medical concerns		62.91%	
Talking to children for medical concerns		86.82%	
Health Service Utilization			
# of Physician visit	0 – 20	7.18	5.71
# of Hospitalization	0 – 16	0.29	0.90

Table 2.

Spearman's Correlation among Key Study Variables in the PINE

	1	2	3	4	5	6	7	8
1. Positive spousal relations	1.00	.19***	.22***	-.02	.80***	-.01	-.16***	-.06*
2. Positive family relations		1.00	-.04*	-.04*	.05**	.11***	-.02	-.04*
3. Negative spousal relations			1.00	.26***	.25***	.01	-.04*	-.01
4. Negative family relations				1.00	-.02	.00	.03	.01
5. Talking to spouse for medical concerns					1.00	-.02	-.16***	-.08***
6. Talking to children for medical concerns						1.00	.01	.01
7. # of Physician visit							1.00	.33***
8. # of Hospitalization								1.00

* Notes: $p < .05$ ** $p < .01$ *** $p < .001$.

Table 3.

Standardized Coefficients of Negative Binomial Regressions Predicting Physician Visits among Chinese Older Adults in Chicago (N = 3,053)

	Model 1 β	Model 2 β	Model 3 β	Model 4 β	Model 5 β
<i>Control variables</i>					
Age	.008**	.008***	.008***	.008***	.008***
Women	.030	.035	.031	.026	.032
Married	-.054	-.058	-.048	-.052	-.053
<i>Enabling factors</i>					
Years of education	.004	.004	.004	.004	.003
Personal annual income ^a					
\$5,000–\$9,999	-.029	-.029	-.025	-.028	-.024
\$10,000 or above	-.249***	-.240**	-.239**	-.245**	-.234**
Having insurance	.775***	.777***	.775***	.775***	.774***
Years in the US	.006***	.006***	.006***	.006***	.006***
Level of acculturation	-.002	-.002	-.002	-.002	-.002
<i>Health-related needs</i>					
ADL difficulties	.030***	.030***	.030***	.030***	.029**
<i>Family relations</i>					
Positive spousal relations		.004			.010
Positive family relations		-.007			-.010
Negative spousal relations			.005		.005
Negative family relations			.066*		.065*
Talking to spouse for medical concerns				-.002	-.031
Talking to children for medical concerns				.053	.057

Notes:

^aReference group is \$0–\$4,999* $p < .05$ *** $p < .01$

$p < .001$
***

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Table 4.

Results of Logistic Regressions Predicting the Likelihood of Hospitalization among Chinese Older Adults in Chicago (N = 3,053)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	OR	CI	OR	CI	OR	CI	OR	CI	OR	CI
<i>Control variables</i>										
Age	1.03***	1.01–1.04	1.03***	1.01–1.04	1.03***	1.01–1.04	1.03***	1.01–1.04	1.03***	1.01–1.04
Women	.83	.67–1.03	.84	.68–1.05	.83	.67–1.02	.81*	.65–1.00	.82	.66–1.02
Married	.89	.70–1.13	1.05	.72–1.53	.93	.72–1.19	1.21	.86–1.71	1.25	.83–1.89
<i>Enabling factors</i>										
Years of education	1.03**	1.01–1.05	1.03**	1.01–1.05	1.03**	1.01–1.05	1.03**	1.01–1.05	1.03**	1.01–1.06
<i>Annual household income^a</i>										
\$5,000–\$9,999	.95	.76–1.20	.95	.75–1.20	.96	.76–1.21	.95	.76–1.20	.95	.76–1.20
\$10,000 or above	.58**	.40–.83	.59**	.41–.85	.59**	.41–.85	.59**	.40–.85	.60*	.41–.87
Having insurance	1.81***	1.33–2.47	1.75***	1.29–2.41	1.76***	1.28–2.40	1.81***	1.32–2.47	1.74***	1.27–2.38
Years in the US	1.00	.99–1.01	1.00	.99–1.01	1.00	.99–1.01	1.00	.99–1.01	1.00	.99–1.01
Level of acculturation	1.00	.98–1.02	1.00	.97–1.02	1.00	.97–1.02	1.00	.98–1.02	1.00	.97–1.02
<i>Health-related needs</i>										
ADL difficulties	1.16***	1.11–1.21	1.17***	1.11–1.21	1.16***	1.11–1.21	1.16***	1.11–1.21	1.16***	1.10–1.20
<i>Family relations</i>										
Positive spousal relations			.95	.86–1.05					1.01	.90–1.13
Positive family relations			.99	.89–1.05					.96	.88–1.04
Negative spousal relations					.96	.84–1.09			.95	.83–1.08
Negative family relations					1.16 [†]	.98–1.36			1.15 [†]	.88–1.04
Talking to spouse for medical concerns							.68*	.49–.93	.68*	.46–.99
Talking to children for medical concerns							1.19	.88–1.62	1.22	.90–1.66

Notes:

^aReference group is \$0–\$4,999[†] $p < 0.10$

100' > d
***
10' > d
**
50' > d
*

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