Equity in Informal Care among Dependent Older People in China

ABSTRACT

Population ageing are fuelling concerns over need for informal care—the most common source of caregiving for older people in China. Despite its great importance, there is still a lack of a better understanding about the distribution of informal care received by dependent older adults, in particular regarding whether there is income-related inequity in the receipt of informal care and in the intensity of informal care. Drawing data from the 2005, 2008, 2011, 2014 waves of the Chinese Longitudinal Healthy Longevity Survey, this study explores the relationship between income and informal care among dependent older people in China. I first calculate income-related inequity in receipt of informal care and in the intensity of informal care in 4 waves, using Concentration Indices. Then I use panel data to control for individual-specific unobservable heterogeneity, trying to examine the effects of income more deeply. Our finding suggests for the whole sample and those with severe limitations, older people with higher income are more likely to receive informal care, compared with the worse-off. And this impact is much stronger for those with severe limitations. But we do not observe the same effects of income on the receipt of informal care for dependent older people with mild limitations. Unlike the results of Concentration Indices in four waves, higher income does not translate into higher intensity of informal care for the whole sample, based on panel data analyses. These findings highlight a pressing need for the government to buttress informal care for those with low income.

KEY WORDS: inequity, income, informal care, intensity of care, China

1. Introduction

Population ageing is poised to become an unprecedented challenge in China. By 2018, there are 249 million older people aged 60 and above in China, accounting for 17.9% of the total population in China. The United Nations predicts that by the first half of the 21st century, China will always be the country with the largest number of older people in the world, making up 50% of the total elderly population in Asia, and 20% of the total elderly population in the world. With the dramatic pace of population ageing, a growing number of older people lose their ability to live independently because of physical decline in activities of daily living (ADLs), such as bathing, eating or toileting, resulting in growing needs for long-term care (LTC) (World Health Organization, 2015). In China, the development of formal LTC is in its infancy, while 92% of older people receive informal care from spouse and children (Du, Sun, Zhang, & Wang, 2016). Thus, informal care is the primary source to assist older people in daily life in China.

Although informal care is particularly important in China, there is still a lack of a better understanding about the distribution of informal care received by dependent older adults, who have strong needs for care. Equal access to care for equal need is an essential objective of LTC system (Saito, Kondo, Shiba, Murata, & Kondo, 2018). It is widely assumed that people among lower income groups have poorer health and experience more limitations in carrying out activities in the daily life (World Health Organization, 2015). The need for assistance therefore is not distributed equally, more is needed for the poor. However, barriers in accessing care is unequally distributed, either. The potential mechanism is that affordability hinders the poor from paid services, so dependent older people in lower income groups have to rely on unpaid care. So far, no study has been published to explore income-related inequities in informal care received by dependent older adults in China, to find how receipt of informal care varies among different levels of income, and how other socioeconomic factors influence the receipt of informal care.

This study uses the data from the Chinese Longitudinal Healthy Longevity Survey (CLHLS) collected four times triennially from 2005 to 2014 to analyse the income-related inequity in the receipt of informal care among dependent older people in China. In particular, this study measures income-related inequity in the receipt of informal care and in the intensity of informal care in 2005, 2008, 2011, and 2014. Furthermore, panel data analyses (four waves of CLHLS) are used to examine the effects of income on the receipt of informal care and the intensity of informal care by removing selection bias.

2. Methods

First, I calculate the Erreygers's Concentration Index (EI) to find the inequity in receipt of informal care because this dependent variable is binary. And then I calculate the Concentration Index (CI) for the intensity of informal care because this dependent variable is continuous. Both EI and CI are unadjusted index, indicating the level of inequity of actual use. They equal zero if all individuals have an equal probability of using informal care or having the same intensive informal care, regardless of income. Second, the use of informal care and the intensity are all based on both need and non-need (socioeconomic) factors. The Horizontal Inequity Index (HI) is calculated to examine the inequity still related to income after differences in health needs across the income groups have been standardized for. HI would equal zero if after controlling for differences in need, the probability of informal care use or intensity of informal care is independent of income. The estimate of HI is positive if after standardizing for need higher income individuals are more likely to receive informal care or have intensive informal care than those with lower income, and negative if those with higher income are less likely to receive informal care or have intensive informal care than the lower income individuals. Furthermore, by using random effects model and fixed effects model in unbalanced panel data, it is possible to control for individual-specific unobservable heterogeneity, trying to examine the effects of income on the receipt of informal care and the intensity of informal care.

3. Results and Discussion

3.1 Inequity in the receipt of informal care

Figure 1 shows the changing trend of income-related inequity of the receipt of informal care in four waves. In 2005, both EI and HI are not significant at 0.1 significant level, which means that there is not any inequity in term of the receipt if informal care across different income groups in 2005. In 2008, favouring-poor inequities are observed. EI is not significant while HI is marginally significant. However, it is worth pointing out that both indices become statistically positive in 2011 and 2014 at 0.05 significant level, indicating that receiving informal care is more concentrated among the high-income groups, even only considering socioeconomic factors. Moreover, EI are 0.056 in 2011 and 0.053 in 2014, while HI are 0.031 in 2011 and 0.026 in 2014, showing that the inequity effect driven only by socioeconomic factors decreases, and the receipt of informal care is slightly less concentrated among the rich compared with 2011

[Figure 1 about here]

3.2 Inequity in the intensity of informal care

Figure 2 presents CI and HI in the intensity of informal care among care recipients in four waves. Overall, the inequity effect has been increasing from 2005 to 2014, indicating that intensity of informal care is more concentrated among the rich care recipients in 2014 compared with 2005. These two indices are statistically insignificant in 2011 and are presented only as references. In 2005, CI is not significant at 0.1 significant level, but HI is significant, which means that there is a favouring-rich inequity among care recipients when only considering socioeconomic factors in 2005. Both CI and HI increase in 2008 and are statistically significant. In 2014, CI is 0.043 and HI is 0.034, showing that the

better-off tend to receive more hours of care from children compared with the poor, and there appears to be a notable increase in inequity in receipt of intensive informal care during this period.

[Figure 2 about here]

3.3 Effects of income on the receipt of informal care

The Hausman test reports a large p value (0.5845), indicating that random effects model is the preferred one. In order to have a clear picture of dependent older people with different limitations in ADLs, this study disaggregates the whole sample into two sub-groups, Mild limitations (number of limitations is no more than 2) and Severe limitations (number of limitations is at least 3). As Table 1 shows, for the whole sample and older people with severe limitations, income has a significantly positive impact on the probability of receiving informal care, that is, older people with higher income are more likely to receive informal care, compared with the worse-off. And this impact is stronger for those with severe limitations. Interestingly, this relationship does not hold for those with mild limitations. In other words, there is not significant difference in the probability of receiving informal care between the poor and the rich with mild limitations.

In terms of control variables, for the whole sample, being in an older group (>90 years) increase the probability of receiving informal care as opposed to the reference group (60-79 years). Besides, this effect of age in males is stronger that in females. Education attainment has no significant effects on receiving informal care. Married and living with spouse is closely associated with lower predicted probability of receiving informal care. Living with family members, receiving financial assistance from children, having a greater number of chronic diseases, having more limitations in ADLs, and having sever cognitive impairment increase the likelihood of receiving informal care. However, for those with severe limitations, there is no distinct difference in the effects of age on the likelihood of receiving informal care. Besides, the effects of receiving financial assistance from children, the number of chronic diseases, the number of limitations in ADLs, and the cognitive scores are not significant among dependent older people with severe limitations. In addition, unlike the findings mentioned above, for those with severe limitations, having higher education level decreases the probability of receiving informal care.

[Table 1 about here]

3.4 Effects of income on the intensity of informal care

I further test the effects of income on the intensity of informal care since I am interested in knowing whether income has any effects on the intensity of informal care among care recipients. The Hausman test reports a small p value (0.001), indicating that fixed effects model is the preferred one, and the results are shown in Table 2. In all these three models, income does not have significant impact on the intensity of informal care, when controlling for time fixed effects.

In terms of control variables, for the whole sample and those with mild limitations, receiving financial assistance from children significantly decreases the intensity of informal care, and having a greater number of limitations in ADLs increases the intensity. these effects, nevertheless, are not significant among those with severe limitations. In other words, receiving financial support from children, or having more limitations has no significant effects on receiving more hours of informal care. Additionally, having lower cognitive scores increases the likelihood of receiving more intensive informal care.

[Table 2 about here]

4. Conclusion

This study is among the first to investigate the relationship between income and informal care among dependent older people in China. I found that the rich are more likely to receive informal care compared with the worse-off. Intensive informal care is more concentrated among dependent older people among high income groups and this inequity effects are increasing from 2005 to 2014. Using four waves in CLHLS, after controlling unobserved individual level heterogeneity and time effects, it is found that for the whole sample and those with severe limitations, older people with higher income are more likely to receive informal care, compared with the worse-off. And this impact is much stronger for those with severe limitations. But we do not observe the same effects of income on the receipt of informal care for dependent older people with mild limitations. In other words, there is not significant difference in the probability of receiving informal care between the poor and the rich with mild limitations. Unlike the results of CI and HI in four waves, higher income does not translate into higher intensity of informal care for the whole sample, based on panel data analyses.

These finding from this study give rise to a number of important policy implications with regard to LTC in China. Although dependent older people in lower income groups have to rely on informal care, they are less likely to receive informal care, compared with the better-off. With rapid economic development in current China, a large number of labours in rural areas move to cities for well-paid jobs, making informal care provision in poor families difficult, Thus, it is critical for the government to focus on dependent older people with low income, who have limited money but strong need for informal care. In addition, the significant association between financial assistance from children and the intensity of informal care suggests that the individual who receives money from children are less likely to have intensive informal care. This implies that children normally make choices between giving money and providing care. But it is still important to provide care for those dependent older adults, since money could not fully meet their needs in daily life.
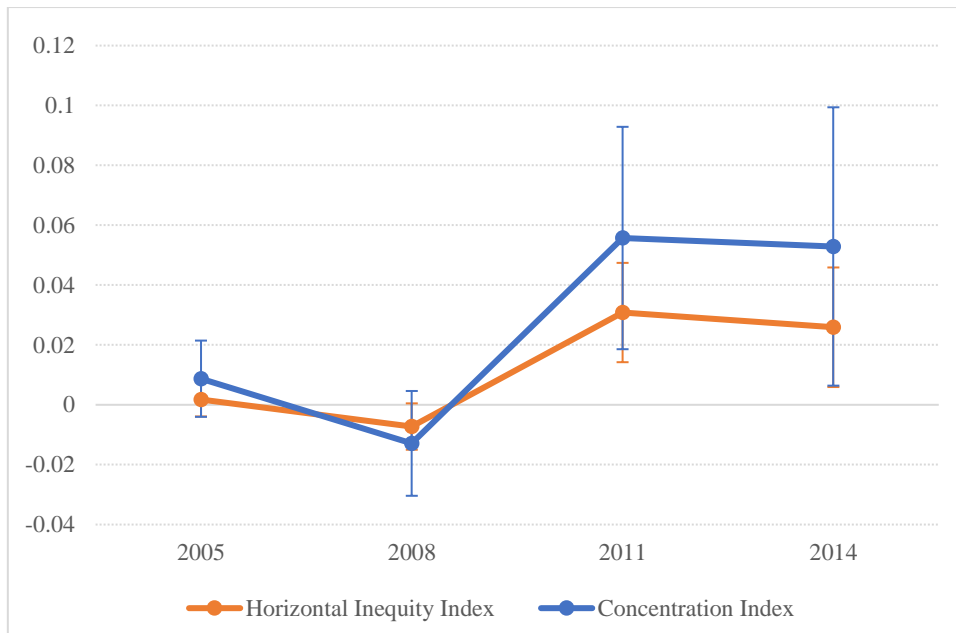
Figure 1 Indices of inequity in the receipt of informal care, with 95% confidence intervals
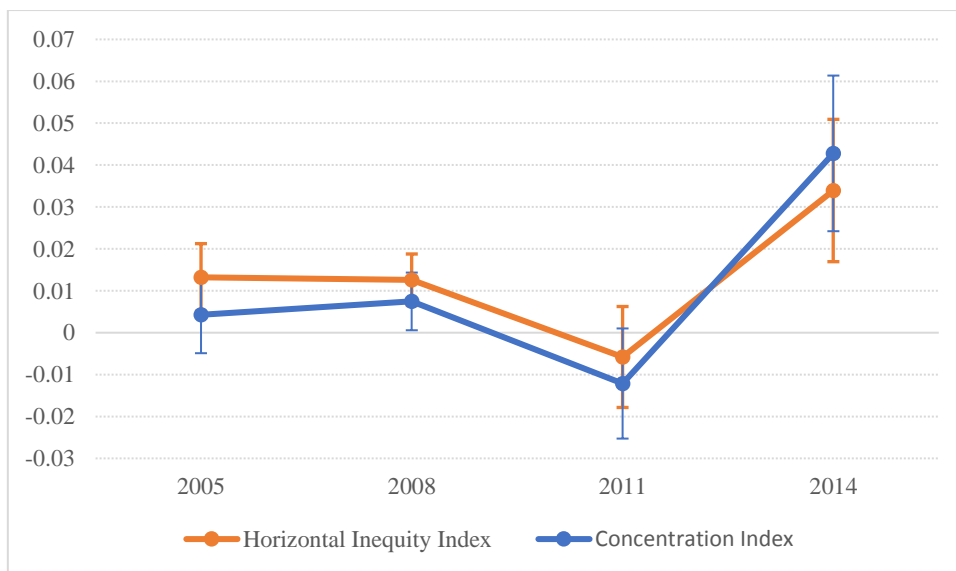

Figure 2 Indices of inequity in the intensity of informal care, with 95% confidence intervals

Table 1 Effects of income on the receipt of informal care (Random effects model)

Variables	Effects of income on the receipt of informal care		
	Total	Mild limitations [a]	Severe limitations [b]
Age group			
60-79 years	Ref	Ref	Ref
80-89 years	0.456 (1.633)	0.527*(1.674)	0.320(0.507)
90-99 years	0.794***(2.780)	0.701**(2.226)	1.793**(2.336)
>100 years	0.973***(3.295)	1.013***(3.015)	0.997(1.475)
Male	-0.246(-0.845)	-0.395(-1.178)	0.299(0.482)
Gender*Age			
Male*80-89 years	0.236(0.636)	0.371(0.873)	-0.145(-0.182)
Male*90-99 years	0.230(0.637)	0.529(1.288)	-1.211(-1.369)
Male*>100 years	0.855*(1.840)	1.286**(2.330)	-0.357(-0.388)
Education attainment			
No education	Ref	Ref	Ref
Elementary school	0.086(0.448)	0.177(0.808)	-0.177(-0.432)
Middle school and above	-0.445(-1.309)	0.046(0.109)	-1.710***(-3.141)
Marital status			
Not married	Ref	Ref	Ref
Married	-0.756***(-4.412)	-0.534***(-2.738)	-1.481***(-3.957)
HH per capita income [c]	0.077*(1.878)	0.050(1.029)	0.143**(2.017)
Residence			
Rural	Ref	Ref	Ref
Urban	-0.146(-1.126)	-0.215(-1.452)	0.189(0.654)
Co-residence with family members			
No	Ref	Ref	Ref
Yes	0.732***(3.771)	0.590***(2.720)	1.375***(3.208)
Financial assistance from children			
No	Ref	Ref	Ref
Yes	0.435***(2.869)	0.457**(2.573)	0.478(1.512)
SAH			
Bad	Ref	Ref	Ref
Fair	0.226(1.408)	0.249(1.337)	0.176(0.495)
Good	0.197(1.178)	0.270(1.417)	-0.015(-0.036)
Number of chronic diseases	0.095**(2.113)	0.087*(1.685)	0.118(1.246)
Number of limitations in ADLs	0.500***(9.142)	1.035***(4.863)	0.232(1.610)
Cognitive function [d] scores	-0.018**(-2.321)	-0.019**(-2.099)	-0.017(-1.105)
Year			
2005	Ref	Ref	Ref
2008	-1.531***(-7.444)	-1.620***(-6.894)	-1.220**(-2.027)
2011	-1.715***(-7.993)	-1.581***(-6.487)	-2.397***(-4.287)
2014	-1.577***(-6.696)	-1.371***(-5.105)	-2.307***(-3.985)
_cons	1.802***(3.688)	1.485**(2.468)	1.811(1.517)
N	9378	4935	4443

Notes: [a] Mild limitations denotes that the dependent older people have difficulties in no more than 2 items in ADLs. [b] Severe limitations denotes that the dependent older people have difficulties in at least 3 items in ADLs.

Table 2 Effects of income on the intensity of informal care (Fixed effects model)

Variables	Effects of income on the intensity of informal care		
	Total	**Mild limitations [a]**	**Severe limitations [b]**
Age group			
60-79 years	Ref	Ref	Ref
80-89 years	0.411(1.273)	0.197(0.315)	-0.009(-0.018)
90-99 years	0.603(1.587)	0.402(0.554)	0.539(0.847)
>100 years	0.338(0.766)	0.131(0.149)	0.301(0.411)
Male	0	0	0
Gender*Age			
Male*80-89 years	0.258(0.617)	0.467(0.561)	0.498(0.829)
Male*90-99 years	0.438(0.868)	1.115(1.132)	-0.035(-0.043)
Male*>100 years	1.155*(1.927)	1.348(1.139)	1.403(0.874)
Education attainment			
No education	0	0	0
Elementary school	0	0	0
Middle school and above	0	0	0
Marital status			
Not married	Ref	Ref	Ref
Married	-0.194(-0.927)	-0.533(-1.347)	-0.004(-0.013)
HH per capita income[c]	0.003(0.090)	-0.009(-0.146)	0.026(0.593)
Residence			
Rural	Ref	Ref	Ref
Urban	0.009(0.093)	-0.011(-0.059)	-0.045(-0.300)
Co-residence with family members			
No	Ref	Ref	Ref
Yes	-0.182(-1.078)	-0.251(-0.817)	-0.022(-0.074)
Financial assistance from children			
No	Ref	Ref	Ref
Yes	-0.231**(-2.495)	-0.524***(-2.766)	-0.181(-1.197)
SAH			
Bad	Ref	Ref	Ref
Fair	-0.051(-0.576)	-0.130(-0.669)	-0.032(-0.233)
Good	-0.110(-1.186)	-0.212(-1.092)	-0.238(-1.486)
Number of chronic diseases	0.000(0.008)	-0.004(-0.076)	0.031(0.755)
Number of limitations in ADLs	0.252***(10.604)	0.394**(2.497)	0.087(1.393)
Cognitive function scores [d]	-0.005(-1.171)	0.010(1.023)	-0.016**(-2.137)
Year			
2005	Ref	Ref	Ref
2008	0.289***(3.108)	0.402**(2.288)	0.048(0.309)
2011	0.228*(1.815)	0.213(0.920)	0.126(0.599)
2014	0.290*(1.818)	0.597*(1.937)	0.049(0.189)
_cons	2.313***(5.819)	2.418***(3.046)	3.008***(4.127)
N	8536	4307	4229

Notes: [a] Mild limitations denotes that the dependent older people have difficulties in no more than 2 items in ADLs. [b] Severe limitations denotes that the dependent older people have difficulties in at least 3 items in ADLs.