

**Health Care Experience of Older Persons with Chronic Illness in Rural and Urban China:
A Qualitative Study in Shandong, China**

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ABSTRACT

Background: China is undergoing rapid socioeconomic transitions. Demographically, its population is aging rapidly. Epidemiologically, it is shifting from infectious to chronic diseases. In addition, China is facing a widening income gap between the rural and urban population. This qualitative study focused on older persons with chronic illness living in rural and urban China. We aimed to understand and compare their healthcare experience.

Methods: Twenty-four pairs of older persons with chronic illness and their caregivers were recruited from rural and urban areas in Shandong, China. Each participant was interviewed individually at his/her home in summer 2008 using a semi-structured, qualitative interview format. Content analysis was conducted.

Results: Both rural and urban older adults had easy access to primary care but the quality of care they received differed. Rural elders relied on village doctors whose qualification and incentives could lead to problems. Their use of higher-level care was a family decision involving all adult children and was often on an emergency basis. Urban elders used their community health centers for chronic care management and were satisfied with the service, however they sought initial care from hospitals for any problems perceived to be serious and complained that those hospitals charged unreasonably high prices. Self-treatment was relatively common in both groups. For

rural participants, this behavior was for cost saving whereas for urban participants, it was an attempt to change the course of a chronic condition.

Conclusions: Rural elders in China were faced with more challenges in receiving quality primary care, accessing higher-level care, and affording healthcare in general, compared to their urban counterparts. The findings of this study provide a better understanding of healthcare utilization by and healthcare disparity between rural and urban elders, which is important for healthcare reform in China and other emerging economies.

Keywords: healthcare equity; access to care; rural-urban; countries in transition; qualitative research

BACKGROUND

China is undergoing two major social transitions. Demographically, its population is aging rapidly—persons age 60 years and older increased from 97 million (8.4% of the population) in 1990 to 171 million (12.9% of the population) in 2010 [1]. Epidemiologically, it is shifting from infectious to chronic diseases with non-communicable diseases accounting for 80% of deaths in 2005 [2]. In addition, China is facing a widening income gap between urban and rural area [3]. In this study, we focus on healthcare equity between older adults living in rural and urban China. Below we briefly describe the healthcare system in China to provide context for our study.

Since the establishment of the People's Republic of China, urban and rural Chinese have been served by two separate three-tier healthcare delivery systems. In urban areas, the existing network consists of community health centers for primary care, and district and city hospitals for secondary and tertiary care. The corresponding components in rural areas are village clinics, township health centers, and county hospitals [4].

From mid-1950s to 1970s, China earned international recognition for providing preventive and affordable basic healthcare to all. Healthcare privatization following economic reforms created major problems in accessibility and affordability of healthcare [5]. For example, health insurance coverage in urban areas fell from 70 to 55 percent of the population between 1993 and 2003. But the drop in rural areas was even more dramatic, from 85% in 1975 to 9.5% in 2003 (Ma, Lu & Quan, 2008) [6]. Recently, the Chinese government has invested substantial resources to expand health insurance coverage [7]. Most urban residents are now covered by either the Urban Employee Medical Insurance Scheme (UEMIS) or the Urban Resident Medical

Insurance Scheme (URMIS) [8]. In rural areas, the New Cooperative Medical Insurance Scheme (NCMIS), a voluntary program with contributions from individual, local, and central governments, was initiated in 2003 [9].

Early studies consistently showed that rural residents were less likely than urban residents to visit a physician, be admitted to a hospital, or seek any type of healthcare when sick [10,11]. More recent data suggest that rural residents' healthcare access was equal to or exceeded that of urban residents [12,13]. But some found that the rural disadvantage remained, evidenced by rural residents' greater likelihood to self-discharge from hospital early due to financial reasons [14].

This study used qualitative methods to examine how older people with chronic illness in rural and urban China meet their healthcare needs, and how their experience differs. Findings of this study will help us better understand health service use of older Chinese and rural-urban healthcare disparities in China. China is not unique in facing the challenge of population aging, epidemiological transition, and urban-rural divide. The findings will have implications for other emerging economies as well.

METHODS

Sample

Our study participants included 24 pairs of older Chinese (age 55 years or older) with chronic illness and their caregivers (all but one were family members). Chronic illness was broadly defined as health problems that had lasted for some time. Half of the sample was from two urban neighborhoods and half from two rural villages in Shandong, China. Shandong is one of the richer provinces in China, with GDP ranked third in the nation in 2008 [15]. The four communities were chosen based on variation in socioeconomic status (SES), distance from each

other (relatively far apart), and local support in sample recruitment. Using purposive sampling and the principle of maximum variance (SES, age, and caregiver-care recipient relationship), we enlisted the help of resident associations (urban) and local villagers (rural) to recruit older adults who then identified their caregivers. People with cognitive impairment and hearing problems were excluded. The study was approved by the University of Michigan Institutional Review Board (HUM00015855).

Table 1 displays characteristics of the older persons (elders) and their caregivers (caregivers) by rural-urban residence. All rural elders were enrolled in the NCMIS, which reimbursed approximately 40% of in-patient care, had high co-payment for out-patient services, and low ceilings for drugs [9]. All except one urban elder had health insurance. Eight were covered by the UEMIS, which reimbursed approximately 70% of in-patient care cost and offered a relatively generous savings account for outpatient and drug expenses [7]. Three were covered by the Government Medical Insurance Scheme (for government officials), which provided more comprehensive coverage than the UEMIS.

Table 1 about here

In terms of their principal health problem, six elders had heart disease, four had diabetes, three had stroke, three had chronic bronchitis, and two had hypertension. Six could not name their diagnosis but described symptoms (e.g., leg pain, difficulty breathing). Their functional capability varied. All but two elders were capable of performing basic self-care (bathing, toileting, eating, drinking, dressing) independently. All received help with some instrumental activities of daily living (e.g., shopping, preparing meals, household chores).

Data Collection

The present study was part of a larger qualitative study aiming at understanding quality of care and quality of life of older Chinese with chronic illness in rural and urban areas. We collected qualitative data through semi-structured, individual interviews, using an interview guide containing open-ended questions. Healthcare experience-related questions included: (a) history of health problems (When did your health problem begin? How has your health changed since then?) and, (b) health service utilization (What medical care have you received for the health problem(s) you mentioned? When and where did you receive the service? How do you feel about the service?). Caregivers were asked the same questions reworded to focus on the older person. Interviewers had discretion to use value-free probing techniques. Socio-demographic data (e.g., age, income, living arrangements) were collected at the end of the interview using a standardized form. Two graduate students and one faculty member of Chinese universities (all of whom were trained and speak the local dialect) conducted interviews during the summer of 2008. The first author was present in most interviews as an assistant. She met with the interviewers daily for peer debriefing and kept a journal throughout the data collection period. All interviews except one were digitally recorded and transcribed in Chinese verbatim. Interview length averaged 82 minutes.

Data Analysis

Content analysis was used to analyze and organize the data. Both authors began by reading each of the 48 transcripts multiple times to obtain a sense of the whole. They then independently applied first-level coding to three randomly selected transcripts from each of these four groups: urban elders, rural elders, urban caregivers, rural caregivers. Through discussion and reconciliation, they agreed upon a coding scheme for each group which was applied to

respective transcripts. The authors then extracted the text under two major categories—“health” and “medical care”—and divided it into meaning units and labeled them with codes. The codes were condensed before being integrated by rural and urban. The grouping of content areas into more abstract levels led to the themes reported below. The authors met frequently to discuss the codes and abstraction. Differences were resolved through discourse.

RESULTS

We present the themes in three areas of use: primary care, higher-level care, and self-treatment. The themes derived from rural and urban participants, respectively, were presented under each area. When appropriate, extracts from participants’ narratives are presented. A four-digit code identified each participant; the first digit (R or U) denoting rural or urban residents, the second (B, J, D, or Y) their neighborhoods, the third (E or C) differentiating elders and caregivers, and the fourth (1 to 6) matching elders to their caregivers.

Use of primary care

Rural: Reliance on village doctors—convenient, low cost, but potentially risky

Urban: Regular visit to community health centers—for ‘minor’ issues and disease monitoring

Both rural and urban participants said they used their neighborhood clinics frequently because of convenience and affordability. Care providers in rural clinics were village doctors with some basic medical training but who did not have a medical degree [16]. The doctors in urban neighborhoods had a medical degree and were licensed [17]. Village doctors charged modest service fees but gained profit from administering injections and selling drugs. Many rural participants reported being treated intravenously by village doctors, which seemed to be a standard practice. RBE5, a 70-year old widow with chronic bronchitis and hypertension, said:

“Whenever my bronchitis got severe, I went to see the doctor in the village clinic. After getting the drips and taking some medicine, I would be fine. I am quite satisfied. He’s just a barefoot doctor. But he helped me when I felt sick.”

Her satisfaction was echoed by most rural elders. However, reliance on village doctors could be problematic. RJE5 (female, 75 years) suffered a stroke the year before our interview. In the first three days after the stroke, the village doctor treated her at home. It was not until her condition worsened that her son decided to take her to the hospital. Another problem of village clinics was their rudimentary equipment. RBE6 (female, 55 years), who had diabetes, complained that her village clinic lacked the equipment to check her blood sugar level.

Rural participants sought help from village doctors on an acute basis—when their symptoms were severe enough to interfere with their daily life activities. RBE1 (female, 73 years) described symptoms including nausea, shortness of breath, and hot flashes, but insisted that she was not sick and did not need to see a doctor because she was mobile.

In contrast, our urban elders had bi-weekly appointments to refill prescribed medications in their community health centers when they also had a routine check to monitor their health conditions. Overall, urban elders gave positive appraisals of the service offered by the clinics. For example, UYE2 (female, 69 years), who recovered from a severe bout of bronchitis under the care of the doctor at her community health center the winter before our visit, described her doctor as “responsible and careful.” Although UDE6 (male, 69 years) did not think that his health problems were effectively treated, he was satisfied with his community health center because people there were friendly and he did not need to pay any out-of-pocket expenses. The

no/low cost of community health centers was particularly attractive when comparing to the cost of hospital services. UYE2 said:

“They [hospitals] charge you 10 yuan for using the bed. That’s not reimbursable ... In the community clinic, they don’t charge you for that.”

In spite of the positive appraisal, community health centers were seen as for ‘minor’ issues only by urban participants. For health problems that they perceived to be serious, they went directly to the hospitals. UDE3 (male, 70 years) said:

“Our community health center is convenient... For minor and simple stuff, it’s ok to go there. If I had an emergency, such as a sore boil or a wound that I cannot self-care, I would go to the hospital.”

Use of Higher-level Care

Rural: Dependent on children

Urban: Love and hate

Rural elders needed their adult children’s help to arrange transportation, provide escort and, more critically, pay for service at township health centers and county hospitals. Adult children’s willingness to do so seemed to depend on several factors, including their own socioeconomic status, perception of parent’s need, and relationships among siblings. RBE6 was taken by her daughter to the township health center regularly for her diabetes. Her daughter and son-in-law had a combined income (3000 yuan/month, about USD462) that was relatively high in rural villages. Some adult children voiced concerns about the cost of using higher-level care. RBC3, a son caregiver of his 83-year old mother, said:

“I took my mother to the township health center for an x-ray. Gee, that cost several hundred yuan. The doctor said it’s a chronic condition, no need for hospitalization. We are farmers. Realistically speaking, we can’t afford hospital care for her...She’s old; taking medicines at home should be fine.”

Good relationships among adult siblings (sons) helped to secure higher-level care for rural elders whereas sibling discord delayed treatment. RJC1’s mother-in-law had multiple chronic conditions including diabetes and heart disease. She said that if RJE1 (female, 79 years) was really sick and all three brothers agreed, she would be taken to a hospital. But she said, “With so many brothers, it’s hard to come to a consensus. I usually just got something for her from the village clinic.”

Quite often, rural elders’ use of higher-level care was due to a medical emergency that related partly to ignorance and lack of management of their chronic conditions. The above mentioned stroke survivor, RJE5, first learned that she had high blood pressure during hospitalization. In another example, RJE4 (female, 76 years) was hospitalized after a fall. She said:

“The doctor [in the hospital] told me I had coronary heart disease, high blood pressure, and blood clots.” When asked whether she felt sick before the hospitalization, she said, “no, just abdominal pain.”

Hospitalization often led to impoverishment of rural elders. Even though the NCMIS covered 40% of inpatient care cost, it was still way beyond their affordability. Four rural elders were hospitalized in the two years prior to the interview, all for catastrophic illness. They relied on their adult children to pay the bill. Putting such a financial burden on their children caused

psychological distress for the older persons. RJE6's (male, 70 years) comment exemplified this concern:

“I cannot really depend on my son. He has two children at home. One of my grandsons should get married soon. That needs a lot of money. If he had brothers, he would have someone to share. Unfortunately, I have only one son. ”

As mentioned, urban elders sought initial care at hospitals for problems that they perceived to be serious. For example, UYE4 (female, 61 years) felt heartburn after taking a self-prescribed drug for her leg pain. Her neighbor told her that the heartburn could be symptoms of coronary heart disease and she should get it checked at the hospital right away. She did and the cost of 2000 yuan (USD323) was mostly covered by insurance.

Most urban participants, however, complained that hospitals charged too much. UDE3 (male, 70), who had advanced stage diabetes, was angry when talking about the cost of hospitalization. He said:

“My buddy down the lane was hospitalized in the district hospital last month. It cost more than 7000 yuan. They talked about healthcare reforms and all that. How can one hospitalization cost 7000 yuan?”

The complaint also included unreasonable charges for drugs and fees. UYE4 (female, 61 years) said, “The hospital charges you every little thing. They charge you if you want an extra blanket.” The high cost was a barrier to those with low incomes. UDC6 (female, 71 years) said that her husband had several episodes that warranted hospital admission, “but we can't afford his hospitalization. I don't even dare to think about that.”

Self-treatment

Rural: a way to reduce cost

Urban: a way to change disease course

To reduce cost, some rural elders used their own methods to control symptoms. RJE1 (female, 79 years), a widow with multiple chronic conditions, had frequent headaches and dizziness. She said, “When I feel dizzy, I sit down and swallow the pill. Usually I feel better after.” She bought the pills from the village clinic. RBE4, a 71-year old farmer with heart disease and high blood pressure, took a drug that he found in the village clinic to substitute the one prescribed by a county hospital doctor for his high blood pressure. He said:

“It’s cheap, about one yuan for a bottle. I take it everyday, twice a day. Whenever I feel dizzy I take it. I can’t afford to take other drugs. We have to eat.”

Unfortunately, his blood pressure had risen to a dangerous point and forced him to seek treatment a few months before the study interview.

Self-treatment was reported by urban elders as well, and was often an attempt to change the course of a chronic condition that they perceived to be unsatisfactorily treated by their doctors. For example, UDE3 (male, 70 years) said that the Western medicine he had taken for his diabetes was poisonous and contributed to his deteriorating condition. He was using an alternative therapy when we interviewed him, saying:

“I learned about this course of therapy from the Shandong Daily News [local newspaper]... The advertisement said they guaranteed [diabetic] recovery after three stages of treatment.”

UDE3 felt that the drug was working and completely stopped using the medicine prescribed by his doctor. Several urban elders commented that Western medicine only treated the symptoms, but not the “root.” Six urban elders said that they had taken self-prescribed drugs for their chronic conditions. At the time of the interview, four had stopped because of negative effects; two were still using it in the hope that it would get to the “root cause” and cure their chronic conditions.

DISCUSSION

Rural and urban older adults in China shared similarities in their healthcare experience—both had easy access to primary care, found hospitalization to be too costly, and practiced self-treatment. However, they were different in the quality of primary care they received, degree of accessibility to higher-level care, and primary motivation for self-treatment.

Despite earning satisfaction from our rural elders, the service of village doctors was limited by their qualification, equipment, and lack of supervision. Village doctors were previously called barefoot doctors who were part of the Cooperative Medical Scheme (CMS) supported by the commune system of collectivized agriculture. The CMS collapsed following the economic reform. Some barefoot doctors became private practitioners. They worked without guidance and supervision, and relied on revenues charged to patients for incomes [18]. Over-prescribing and over-treatment in village clinics have been noted in previous research [19, 20].

On the urban side, community health centers are public health facilities, staffed by licensed physicians and nurses. Worth noting is that community health centers in our research sites had chronic care management systems which were well received by urban participants. However, consistent with previous studies [21], urban elders and their caregivers lacked

confidence in their community health centers, despite positive experience and satisfaction with services. They often sought initial care from hospitals.

In contrast, rural elders had many barriers to accessing higher-level care. First, the decision to seek care outside of the village was a family one involving all children (sons). Second, parental healthcare expense was a burden to most rural adult children interviewed. Our findings suggest that characteristics of adult children play an important role in rural elders' use of higher-level care. However, this was not the case for urban elders. A few previous studies have suggested the importance of family-related factors in older adults' health service utilization in China [22, 23]. This line of research is worth further development, and we note that rural-urban differences should be considered.

Research has shown that self-treatment is prevalent among Chinese citizens [13]. Our findings suggest that the primary motivation for such behavior may be different between rural and urban elders. Rural elders seemed to be motivated by cost-saving, whereas health beliefs related to Western and Chinese medicine seemed to be a driving force for urban elders.

The healthcare issues of rural and urban elders in China identified in our study may be relevant to other emerging economies. First, shortage of health workers in rural areas is a recognized problem throughout the world [24]. Many newly industrialized countries have rural health practitioners who are like village doctors in China [25]. They fill an important gap and are invaluable to rural residents, but their service can be problematic especially when they receive no supervision and are private practitioners. An important task of policymakers in these nations is to develop a system to support rural health workers. In 2009, China announced an ambitious healthcare reform plan that included upgrading village clinics and incorporating village doctors

to be employees of township health centers [7]. This may reduce problems related to supervision, equipment, and incentives of village doctors. But studies are needed to evaluate its effectiveness. Second, cost of care is a major barrier for rural elders, in China and most other emerging economies, to access health services due to their low socioeconomic status. Our rural participants delayed seeking care for their health problems which resulted in costly hospitalization and impoverishment. Health insurance coverage as well as a system of chronic care management at the neighborhood level, such as that received by our urban sample, are some of the ways to encourage early detection and effective management of chronic conditions of older persons living in rural areas. Third, family plays an important role in Chinese rural elders' use of health services. This may also be the case in other newly industrialized nations. Family support, however, should not be used as an excuse to reinforce rural elders' dependence on their adult children. Our findings suggest that such dependence can mean delayed diagnosis and treatment. It is important to enable rural elders to have the autonomy to access all levels of care. However, equally important is to prevent misuse of higher-level care, such as that committed by our urban elders. Some scholars suggest using primary gate-keeping to restrict Chinese patients' access to higher-level care [26]. The Chinese government is hesitant to implement such measure as it is likely to be unpopular. A lesson for other emerging economies regarding healthcare reform is that a gate-keeping system has to be put in place early on before people get used to seek care wherever they want. Price itself cannot prevent inappropriate use of, but certainly increases inequitable access to, higher-level care. Finally, self-treatment is associated with many adverse risks in older adults [27]. Our findings suggest that such behavior in rural older Chinese was primarily related to cost concerns. Provide insurance coverage for prescribed medicine is a first step to prevent inappropriate self-treatment of rural elders. However, the self-treatment behavior

in our urban sample suggests that education about proper use of drugs and acknowledgement of a potential role for traditional medicine in the treatment plan are also important. Many older adults in newly industrialized countries may hold strong beliefs about their folk or traditional medicines.

Limitations of this study should be noted. First, it was based on a small non-probability sample, which is unlikely to represent the population of older persons in rural and urban China, or more specifically, Shandong Province. In particular, health insurance packages, which are likely to influence healthcare experience, vary greatly across different areas of China [8,9]. Second, the sample selection may have been biased, as participants were recommended by our referral sources. Older persons who were perceived to be negative or uncooperative may have been screened out or refused to participate. Third, our older participants had different health conditions and levels of severity, which might have affected their healthcare experience.

One contribution of our study is that, by giving voices to older adults and their caregivers, it provides a context to understand healthcare disparity between rural and urban older adults in China. Quantitative studies often use such indicators as “physician visit when ill” and “hospitalization when needed” to measure healthcare access, as well as to assess rural-urban healthcare equity [12,13]. These measures cannot indicate differences in quality of services, such as those between village clinics and community health centers discussed above. The quantitative measures also do not take into account differences between rural and urban residents in the definition of illness and need. In our study, rural elders did not perceive themselves to be sick and need care until their symptoms interfered with their daily life activities or they were in a medical emergency, whereas urban elders were more proactive in seeking care. Hence, the

affirmative response of rural elders to the quantitative measures may have different meaning from that of urban elders.

CONCLUSIONS

China's economic growth in the past few decades has enabled its government to allocate more resources to healthcare. However, we found that while accessing primary care was relatively easy for both rural and urban older Chinese, rural elders were faced with more challenges in receiving quality primary care, accessing higher-level care, and affording healthcare in general, compared to their urban counterparts. As China and other emerging economies continue to reform their healthcare systems, studies to track and compare changes in healthcare experiences of rural and urban older persons would help to identify areas for improvement and assess the effectiveness of the reforms in advancing rural-urban healthcare equity.

Abbreviations

UEMIS	Urban Employee Medical Insurance Scheme
URMIS	Urban Resident Medical Insurance Scheme
NCMIS	New Cooperative Medical Insurance Scheme
CMS	Cooperative Medical Scheme

Authors' contributions

LWL designed the study, collected the data and wrote the original draft of the manuscript. LWL and YL participated in data analysis, interpretation of the results and revising the manuscript. Both authors read and approved the final manuscript.

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Statement

We confirm that all study participants have given consent to participate in the study. Personal identifiers have been removed or disguised in this paper so the participants described are not identifiable and cannot be identified through the details of the story.

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Table 1. *Sample Characteristics*

	Rural Care Recipients (n=12)	Urban Care Recipients (n=12)	Rural Caregivers (n=12)	Urban Caregivers (n=12)
Age Median (range)	72 (56-82)	69 (61-86)	53 (29-74)	65 (43-74)
Gender				
Men	5	12	4	4
Women	7	12	8	8
Marital Status				
Married	6	11	12	12
Widowed	6	1		
Living arrangements				
Alone	5	1		
With spouse only	6	10		
With spouse & children	0	1		
With children	1	0		
Monthly household income (CNY*) Median (range)	105 (40-3,000)	3,150 (1,400-7,310)	1,157 (48-25,000)	3,650 (1300-5850)
Years of schooling Median (range)	0 (0-6)	7 (0-12)	4 (0-12)	6 (0-14)
Relationship with elder				

Husband			0	3
Wife			4	5
Son			4	1
Daughter			1	0
Daughter-in-law			3	2
Paid helper			0	1

Note: * In Chinese Yuan (CNY). 1 USD \approx 6.3 CNY.