A Qualitative Study of Healthcare Experiences Among Chinese Homebound Adults Receiving Home Health Care Services

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Abstract

Background: Home health care services (HHC) are emerging in China to meet increased healthcare needs among the homebound population, but research examining the efficiency and effectiveness of this new care model is rare. This study aimed to investigate care recipients' experiences with HHC and areas for improvement in China.

Methods: This research was a qualitative study based on semi-structured interviews. Qualitative data were collected from homebound adults living in Jinan, Zhangqiu, and Shanghai, China. A sample of 17 homebound participants aged 45 or older (mean age = 76) who have received home-based clinical care were recruited. Colaizzi's descriptive phenomenological method was used to generate qualitative codes and identify themes.

Results: The evaluations of participants' experiences with HHC yielded both positive and negative aspects. Positive experiences included: 1) the healthcare delivery method was convenient for homebound older adults; 2) health problems could be detected in a timely manner because doctors visited regularly; 3) home care providers had better bedside manners and technical skills than did hospital-based providers; 4) medical insurance typically covered the cost of home care services. Areas that could potentially be improved included: 1) the scope of HHC services was too limited to meet all the needs of homebound older adults; 2) the visit time was too short; 3) healthcare providers' technical skills varied greatly.

Conclusions: Findings from this study suggested that the HHC model benefited Chinese older adults, primarily homebound adults, in terms of convenience and affordability. There are opportunities to expand the scope of home health care services and improve the quality of care. Policymakers may consider providing more resources and incentives to enhance HHC in China. Educational programs may be created to train more HHC providers and improve their technical skills.

Trial registration: Not applicable

Background

Although no consensus has been reached on the definition of "homebound status," this term typically refers to individuals who are unable to leave their homes or require substantial support to do so, due to their physical or medical limitations[1]. Homeboundness is mostly prevalent among older adults and the morbidity rate increases with age[2]. The homebound population is increasing in China, as the proportion of older adults is rapidly growing[1, 3, 4]. According to a survey of urban older adults conducted in two Chinese provinces in 2013, the morbidity rate of being homebound and semi-homebound was 15.5%[2]. The likelihoods of hospital admissions were 50% higher and outpatient visits were 20% higher among homebound older adults than among non-homebound older adults[5]. Homebound adults have many unmet hospitalization needs; meanwhile, they face the most barriers in accessing hospital-based care[6].

High healthcare costs and transportation difficulties were the most frequently reported barriers to healthcare access for homebound older adults[5, 7, 8].

Merely improving the traditional hospital-centered care model will not sufficiently meet the unique healthcare needs of homebound adults. The home health care (HHC) model, which has been adopted by various developed countries, provides comprehensive and continuous physician, nurse, and therapist care services at home[9]. Some HHC models involve high-quality and cost-effective clinical services, and have been shown to improve access to healthcare, especially among homebound older adults[10]. Care recipients also expressed increased levels of satisfaction toward the technical and interpersonal skills of HHC providers[11–14]. However, the HHC model has only recently emerged in China. In 2017, the National Health and Planning Commission and the State Administration of Traditional Chinese Medicine jointly published a report emphasizing the importance of developing home-based health care services in China[15]. However, the HHC market in China is currently still in its infancy; HHC is limited to a few medical institutions and provides a narrow breadth of medical services[16].

Research focusing on the efficiency and effectiveness of HHC in China is scarce. In this present study, we interviewed homebound participants from three different areas in China who had been receiving HHC, aiming to understand their experiences and attitudes toward HHC and their opinions on the future development of HHC. Through qualitative research, we intended to summarize best practices, shortcomings, and areas for future improvements in HHC in China, and to compare the strengths and challenges related to HHC in China with those in other countries.

Methods

Study design and setting

This study was a qualitative research based on semi-structured interviews. Qualitative data were collected from homebound adults (mean age = 76) living in Jinan, Zhangqiu, and Shanghai, China.

Aim

This study aimed to investigate care recipients' experiences with home health care and areas for improvement in China.

Participants

We recruited 17 Chinese homebound adults based on the following eligibility criteria: 1) have received HHC, 2) aged 45 years or older, 3) no obvious cognitive impairment, and 4) able to independently answer questions. We defined homebound status as not having left home in the last week, or leaving home less than once in the last month[17]. There were few institutions delivering HHC; thus, we had to recruit participants through purposive sampling from health care institutions that provide home healthcare or rehabilitation care services. These institutions included two community health centers (in Jinan City, Shandong Province and Dinghai District, Shanghai Municipality, respectively) and one hospital (in

Zhangqiu District, Shandong Province) that provide HHC services. Home healthcare providers were contacted first—they then asked their care recipients if they were willing to participate in the interview. Once participants expressed interest, we contacted them by phone to schedule an interview appointment. In addition, a snowball sampling method was used for recruitment, which involved asking our participants to introduce us to acquaintances who fit the inclusion criteria. We then contacted those older adults to ask if they were willing to participate in this study and made an appointment with them if they were interested. The Ethics Committee of School of Health Care Management of Shandong University supported this research (ECSHCMSDU20190101).

Data collection

Two primary authors conducted semi-structured interviews with participants in July 2019. One author served as the main interviewer who conversed with participants and the other author was responsible for recording and time management. Interviews were conducted at participants' homes. Prior to the interview, we introduced the research content, purpose, as well as confidentiality protections to participants. They signed an informed consent form if they agreed to participate and granted us permission for recording. The average interview duration was 40 minutes (range 25 to 63 minutes). The content of interviews included participants' demographic characteristics (i.e., gender, age, highest education level, and living status) and health conditions, as well as their perspectives pertaining to HHC. In terms of health conditions, we asked about participants' chronic diseases, oral medicines, and the impact of being homebound on themselves and their caregivers' lives. Regarding HHC, we collected detailed information from participants about reasons why they chose HHC services, the major content of services they received, evaluations of current HHC services, and suggestions for future service development. The interviews were guided by open-ended questions and the interviewer probed for more details when necessary. A total of 17 interviews were completed within 16 days. Compensation of 100 RMB was sent to each participant who completed the interview.

Analyses

Two researchers agreed to end the participant recruitment process when no novel information seemed to emerge from participant interviews. Interview records were stored on a secured device to fully protect the privacy of participants. Recorded interviews were transcribed verbatim into text by one researcher and double-checked by another researcher to ensure accuracy. To protect participants' confidentiality, participants were given pseudonyms and transcripts were deidentified. The collected data were analyzed by two researchers to reduce subjective errors, using Colaizzi's descriptive phenomenological method[18–20]. The seven steps were as follows:[18, 21] 1) Each transcript was read several times by two researchers to become familiar with and make sense of the content in its entirety. 2) Two researchers reread each participant's transcript critically. The phrases and sentences that directly related to the research objectives were highlighted by both the researchers. The two researchers then compared their work and came to a consensus. 3) Formulated meanings from significant statements were coded into different categories. 4) Categories were grouped into clusters of themes. Thematic clusters that related to

a particular issue constituted an emerging theme. Two emergent themes and six thematic clusters were identified in this study. 5) An exhaustive description for each of the two themes was developed. The two themes established the fundamental structure of this phenomenological study. The findings were reviewed by a third, senior researcher with expertise in this field of study, to confirm whether the descriptions accurately reflected the experiences and attitudes of Chinese homebound adults toward HHC. 6) After review by the third researcher, relevant descriptions were further modified for clarity. 7) The researchers shared the fundamental structure statement with participants to confirm whether it accurately captured their experiences.

Results

Demographic characteristics

Participants' demographic characteristics are provided in Table 1. Of the 17 participants, about half (n = 9) were female, and a majority was older than 60 years, with an average age of 76 years (range 45 to 94). More than half of the participants had an education level of junior high school or below. Most participants lived in urban communities and with their families—only one participant reported living alone.

Health conditions and impacts of homeboundness

All participants were considered homebound, but their level of homeboundness varied. Among them, 9 were completely confined at home due to severe health conditions and 3 were too scared to leave home because of the risk of falls. The remaining 5 participants could only go out with the assistance of their family members. All participants reported having two or more chronic diseases and taking oral medication. Cardiovascular diseases including hypertension, heart disease, cerebral thrombosis, as well as cerebral infarction were reported by more than half of the participants. Among the cardiovascular diseases, hypertension was mentioned by 11 participants. In addition, 5 participants reported having metabolic diseases (e.g., diabetes or constipation) and 3 participants had kidney diseases (e.g., kidney cancer, stomach pain, or tuberculosis). Participants also reported on disability status. Seven participants were homebound due to physical disabilities, such as partial paralysis, amputations, pressure sores, and broken legs. Every participant took two or more different oral medicines; one 70-year-old participant took as many as ten drugs per day.

Participants described how being homebound affected their own and family caregivers' lives; selected quotations are listed in Table 2. The lives of participants became monotonous and boring due to the limitations of being confined at home. They had to give up previous work or housework, as a result of their health conditions. In addition, they had to rely on caregivers to look after them (quote 4-6), requiring these caregivers to spend more time and energy on them than before the participants became homebound.

Home health care experience

A number of questions were asked to help the researchers understand homebound adults' experiences with HHC; sample responses are provided in Table 3. Firstly, participants were asked why they chose to use HHC services. The first major reason was that HHC was more convenient than office-based care. The participants had varied degrees of difficulty in leaving home. Twelve participants lived on upper floors of apartments without an elevator. They reported that seeing a doctor in their office was challenging (quote 7). Medical care provided at home greatly benefited homebound populations. The second reason was that receiving care at home reduced medical expenses incurred by the participants. Thirteen participants mentioned that HHC was introduced to them by doctors in the hospital. Depending on the participant's health condition, HHC could offer chronic disease management or wound care, to reduce unnecessary hospital admissions (quote 8).

The scope of HHC services varied in different locations. The services in Shanghai usually covered monitoring blood pressure, blood sugar, and heart rate, checking care recipients' medications, and adjusting their medication dosages based on their health conditions. The home-visit process was typically conducted by both a doctor and a nurse. In addition to these services provided in Shanghai, HHC in Jinan provided Chinese medicine services, such as acupuncture and electrotherapy. Medical care providers and Chinese medicine therapists took turns visiting care recipients' homes. In Zhangqiu, HHC was provided by specialists from the Burn and Wound Repair Center. Services included wound care and dressing changes for persons with various types of pressure sores and trauma.

Furthermore, we asked participants about their attitudes toward the HHC they had received. Both positive and negative aspects were described. Positive experiences consisted of the following aspects: 1) This delivery method was convenient for homebound older adults. Compared to non-homebound adults, homebound adults faced more challenges in seeing a doctor. For example, they face physical functional limitations and difficulties caused by their built environment, such as apartment buildings without elevators (quote 9). They tended to take longer time to reach a hospital. HHC helped homebound older adults access medical care as well as medications. Doctors told the participants how to take and flexibly adjust oral medicine dosages according to their health conditions. Caregivers could retrieve medicines from the hospital, using a medication list prescribed by their doctor. 2) Health problems could be detected in a more timely manner, because doctors visited participants regularly. HHC providers went to participants' homes diligently—around two times per month or more frequently, and arrived on time to their scheduled appointments. Consistent HHC helped participants maintain a stable health status (quote 10). 3) Home care providers exhibited better bedside manners and technical skills than did hospital-based providers. The excellent bedside manners of providers were highly praised by almost every participant. The providers served participants seriously and responsibly (quote 11-12). Moreover, rehabilitation therapists had advanced technical skills in administering acupuncture and electrotherapy, which were greatly welcomed by the participants (quote 13). 4) China's medical insurance, which mainly refers to Urban Employee Basic Medical Insurance (UEBMI), usually covered the majority of the cost of approved HHC services. Beneficiaries pre-deposited a certain amount of money into their health insurance account. Then, the medical expenses of approved HHC could be deducted directly from the health insurance account and the care recipients would be reimbursed for a majority of costs by their insurance (quote 14).

Participants also mentioned negative experiences with current HHC services. The most prominent problem was that the scope of existing HHC services was too limited to meet the needs of homebound older adults. The content of services mainly included nursing and rehabilitation or narrow specialist treatment. Certain equipment, such as large devices, could not be carried by providers to care recipients' homes; thus, more comprehensive physical examinations and procedures could not be performed (quote 15). Some participants asked whether they could receive infusion therapy at home, a service that is not currently possible (quote 16). Another complaint was that the healthcare providers' visit time was too short (quote 17). Compared to the number of homebound older adults in need, there were too few HHC providers (quote 18). Lastly, participants indicated that healthcare providers' technical skills varied greatly. Most providers that participants encountered in Jinan did not have specialized training in HHC, and some recipients felt worse after their treatments (quote 19).

Participants suggested increasing publicity surrounding HHC. Homebound participants hoped that the government would pay more attention to the HHC model. If HHC became more prominent, more providers may feel compelled to engage in this method of healthcare delivery. Participants also hoped HHC providers would proactively seek out homebound older adults in need of these services. Secondly, participants hoped that the treatment of care providers would be improved and their salaries would be increased. These changes might attract more providers who are willing to serve homebound older adults at home. Thirdly, participants hoped that the scope of services might expand in the future, and that providers would receive better education and training. Participants also wanted HHC providers to use better equipment that might detect acute health problems more effectively. Lastly, the holistic, continuous nature of HHC was mentioned. Participants hoped that during HHC visits, providers could teach care recipients' family members about how to care for homebound older adults at home; for example, how to help homebound adults clean themselves or what to eat for a nutritious meal. More comprehensive care would enhance care recipients' recovery process.

Discussion

We conducted semi-structured interviews with homebound adults who had received home health care (HHC) to collect information regarding their experiences and attitudes toward HHC. Homebound participants reported positive opinions of HHC for its convenience. Due to providers' regular home visits, participants' health problems could be detected in a timely manner. The bedside manners and technical skills of care providers were greatly praised by participants. In addition, the majority cost of approved HHC could be covered by medical insurance. However, the limited scope of services, the lack of HHC providers, short visit durations, and inconsistent quality of care were also mentioned by participants.

Our qualitative findings in China are consistent with published literature on the efficacy and efficiency of HHC in other health systems. Most research suggests that HHC was a convenient method of accessing medical services for home-limited individuals[22]. Some literature also showed that care recipients' satisfaction seemed to be strongly tied to the care services provided and clinicians' positive bedside manners[13, 14]. Providers were serious about their commitment to serving care recipients and they

treated recipients warmly. In addition, participants did not have to worry about the financial stress of approved home health care, because medical insurance covered most of service fees[14]. There existed a shortage of HHC providers in China[16, 23]. Our findings from this present study supported these conclusions.

A prior study in the United States found that only 11.9% of the most severely homebound individuals received HHC[17]. The qualitative nature of our study did not enable us to examine the utilization rates of HHC in China. Future research should examine disparities in accessing healthcare at home. Modern home care medicine is new in China, relative to more traditional healthcare delivery methods. Services provided by HHC clinicians in China are more limited than in other health systems such as those in the US[24] and Japan. In this observational study, the content of HHC was mainly limited to nursing and rehabilitative care. However, modern HHC services also include general medicine, palliative care, hospice, and acute care[16]. The current services do not completely satisfy care respondents' needs; it is necessary to expand the scope of HHC services in China[25].

Based on the experiences of our study's participants, HHC visit durations were very short compared to those in other countries' health systems. This may be attributed to fewer providers for more homebound older adults, or the lack of a uniform standard of service. There is an urgent need for more training for HHC providers. Additionally, training local medical providers in home care techniques may be a potential method for developing HHC in rural areas[16, 26]. Other research has found that providers' technical skills were appreciated by care respondents[14]. Though we found similar opinions in some cases, dissatisfaction towards some providers' poor technique still existed. Providers' technical skills varied greatly. Sometimes, participants thought HHC providers were helpful not because their technical skills were advanced but because providers visited regularly to monitor participants' health status and detect issues. There is still room for improvement in the technical skills of HHC providers[16, 27].

This study discussed the best practices, shortcomings, and areas for improvement of HHC in China, from participants' perspectives. HHC benefits Chinese older adults, especially homebound adults, in terms of convenience and affordability. These are some suggestions for our policymakers: 1) More attention should be paid to technical skill promotion and increasing the number of HHC providers. Educational programs should be created to train providers and to improve their technical skills. Providers' technical skills varied considerably in China because they did not receive specialized training before beginning medical practice. It is necessary to intern for 2 to 3 months with a HHC practice with experienced providers[16]. Compared to the number of homebound older adults in need, the number of providers could not satisfy demand for HHC. Recruiting retired nurses could increase the supply of providers[28]. Using telemedicine technology could make HHC more accessible[29]. 2) Healthcare service content should be expanded to satisfy the multifaceted demands of homebound adults. Multi-level home medical care and care collaboration should be explored, such as personality service packages including mental health care or long-term care depending on older adults' needs[25]. HHC should deliver more comprehensive services to improve care recipients' well-being and longevity. 3) Medical insurance programs may set up payment policies to stimulate the development of HHC. Simultaneously, value-based payment systems should be

developed[16]. Though beneficiaries covered by UEBMI didn't have to bear the majority costs of HHC, residents covered by other insurance schemes or those without coverage had to pay medical costs out of pocket. More attention and financial support should be directed toward enhancing HHC in China. 4) A quality-of-care framework should be established to regulate HHC practices in China. The HHC model of healthcare delivery was implemented differently throughout China and the quality of care varied drastically. According to Leff and Ritchie[30], establishing a quality-of-care framework and developing quality indicators is a possible way to evaluate and improve China's HHC.

Strengths And Limitations

This study contributed to the development of China's modern home health care for the following reasons. This was the first study to explore and compare modern HHC in China's different provinces and investigate best practices, shortcomings, and areas for improvement. In addition, this was the first study centering care recipients' voices and feelings about HHC. We collected suggestions regarding the improvement of HHC directly from participants. Despite this study's important contributions, two limitations should be highlighted. Our sampling method may have resulted in selection and response bias. Participants were recruited via purposive sampling through community health services centers. In addition to recommending individuals who fit the study's inclusion criteria, doctors tended to refer persons with obvious positive health effects resulting from HHC. Those participants were more likely to have a better relationship with doctors or community health service centers. We made interview appointments with the participants in advance, in order to avoid having healthcare providers present, which could spur response bias. However, in a few cases, providers were present for a portion of the interview, and participants may have felt more inclined to give a positive evaluation of HHC providers and services; thus, their answers may not be completely objective and fair. Another limitation was that participants' evaluations of their experiences with HHC were not unanimous. The content of HHC service in three areas of China were not identical. The technical skills of providers in different areas varied greatly, as did participant satisfaction regarding providers' skill level.

Conclusion

The home health care model benefited Chinese older adults, particularly homebound adults, in terms of doctor-patient relationship, convenience, and affordability. There are still many opportunities to improve the quality of care and expand the scope of home care services; these future improvements in service were expected by Chinese homebound adults. Policymakers may consider providing more resources and incentives to enhance HHC practice and delivery in China. Educational programs should be created to train more HHC providers and to improve their technical skills.

Abbreviations

HHC

home health care

Declarations

Ethics approval and consent to participate: The Ethics Committee of School of Health Care Management of Shandong University supported this research (ECSHCMSDU20190101). All the participants of this research provided their written informed consent prior to data collection and patient anonymity is preserved.

Consent for publication: All contributing authors hereby consent to publication of the work in BMC Geriatrics.

Availability of data and materials: The datasets in the current study are not publicly available to preserve participants' privacy.

Competing interests: The authors declare that they have no competing interests.

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Authors' contributions: Rui Zhou conducted data analyses, Rui Zhou, Joyce Cheng, Shuangshuang Wang and Nengliang Yao were involved in concept and design, acquisition and interpretation of data. All authors were involved in preparation of manuscript and Rui Zhou was a major contributor in writing the manuscript. All authors read and approved the final manuscript.

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Tables

Table 1
Descriptive Statistics of the Study Sample

Characteristic	Number of Participants (N = 17)	Percent
Gender		
Male	8	47.1
Female	9	52.9
Age (in years)		
40–49	1	5.9
50–59	1	5.9
60–69	3	17.6
70–79	3	17.6
80–89	6	35.3
90–99	3	17.6
Highest Education Level		
Primary school or below	4	23.5
Junior high school	6	35.3
High school or technical school	5	29.4
Undergraduate or above	2	11.8
Area of Residence		
Urban communities	14	82.4
Rural areas	3	17.6
Living Status		
Alone	1	5.9
With others	16	94.1
Living with comorbidity	17	100.0

Table 2

Homebound Chinese Older Adults' Quotes on Health Conditions and the Impacts of Being Homebound

Health condition section	Quotes
Chronic disease and oral medicine status	1: "I'm in poor health, I'm old and my whole body hurts. I have to take a lot of medications every day."
	2: "I take this huge container of medications every day. Medications alone cost me over thirty yuan a day. I can't afford it!"
	3: "As one gets older, he becomes like a 'pill jar.' I rely on medication to keep myself alive."
Impact on themselves and their caregivers	4: "I can't do anything except stay at home. I can't do any chores. I have to rely on my family to take care of me."
	5: "My health is pretty bad, I have to rely on my husband for care. My husband quit his job to take care of me. Our children live far away from us, they have jobs and children to take care of, it's not convenient for them to come over here."
	6: "Before I had the amputation, I used to farm or help people manage a tree farm, now I can't do anything. I'm in poor health now, and my wife has to take care of me."

Table 3
Homebound Chinese Older Adults' Quotes on Home Health Care Experiences

HHC services	Quotes
Reasons they accept HHC	7: "My apartment is on the fourth floor, the building doesn't have an elevator. My legs are not good, so I can't go downstairs at all. It's too inconvenient for me to get out and see a doctor, so I applied for this (home health care)."
	8: "Last time, when I went to the hospital, Dr. Ge told me that he could come to my apartment to check my wounds and change my dressings. Since then I don't go out anymore when it's not necessary. I'll go to the hospital only when Dr. Ge tells me to go."
Participants' positive experiences	9: "Of course this (home health care) is very convenient. The stairs in my building are very steep. My son used to carry me down every time. This service (home health care) is quite good, in many ways!"
	10: "I'm so thankful to my doctor. She saved my life. There was a time when she did a checkup for me and she found that my heart was about to stop beating, I didn't feel it myself, but she insisted on sending me to the hospital. After a pacemaker was put in my body, my heart rate came back to normal. I am grateful for the rest of my life!"
	11: "The doctor is exceptionally nice, he treats us (his patients) as if we were his relatives. Dr. Ge is a good doctor and every one of us says he is very nice and we all respect him."
	12: "The doctor knows my condition very well and takes great care of me. He always comes to see me and we are like friends!"
	13: "Dr. Xu's acupuncture and electrotherapy were very helpful to my health, they were pretty effective for me. I couldn't lift my neck or cervical spine before, but after she gave me acupuncture, I was able to lift it a little bit, which is quite good."
	14: "My spouse and I are both covered by the Urban Employee Medical Insurance. We first pay a 300 yuan premium, and then the costs of home visits and medical services are paid by the health insurance account. The insurance reimbursement rate is quite high, so we don't need to spend that much money."
Participants' negative experiences	15: "The medical and examination equipment they (the doctors) are using is outdated. The quantity of such equipment should be increased. The more advanced the equipment they use, the more they could help us."
	16: "The community hospital is too crowded, there is not enough space, can my doctor give me an IV at home?"
	17: "The doctor's visits are too short in duration, he just takes a look at me and then leaves, it doesn't even take ten minutes. I wish the doctor would examine me more thoroughly!"

HHC services	Quotes
	<p>18: “There are many patients like us but there are only a few doctors providing this service (HHC), older people like us need this service, and we hope the number of doctors who do home visits would increase.”</p> <p>19: “The first home-visit provider did not do well. His massage was very painful and made me upset. My heart was very tired and the massage was poorly done. I don’t think his technical skill was good enough or maybe he was inexperienced.”</p>

Supplementary Files

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- [questionnaire.docx](#)