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RESEARCH

Long-term care insurance and unmet needs in China: perspectives of older adults and family members

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Abstract
With population aging, many countries have introduced long-term care insurance (LTCI) and provide home-based services for older adults. Grounded in the convoy of care framework, this study investigated the lived experiences of older recipients and their families, exploring how specific policy features relate to unmet care needs. Qualitative data were collected from 24 older recipients and their family members in Guangzhou, China. Findings revealed four LTCI policy mechanisms that alleviated unmet needs: (1) enrolling individuals to use formal care, (2) flexibility in choosing caregivers, (3) integrating home care agency nurses into care networks, and (4) providing training for caregivers. Yet, unmet needs were identified due to suboptimal policy features: the inadequacy of LTCI benefits, the lack of program information, and limited access to individualized care-related goods. To enhance care outcomes, policymakers could incorporate our findings into the development of LTCI programs.

Keywords Care poverty · Well-being · Cash-for-care · Home- and community-based services · Older adults

Introduction

In response to rapid population aging, many countries have introduced public long-term care insurance (LTCI) programs to fund home- and community-based services (HCBS), supporting older adults' desire to stay in their communities and enhancing their well-being. For example, since 2016, China has piloted LTCI programs in 15 cities. LTCI-funded HCBS yield substantial benefits for older adults, including fewer unmet needs, lower mortality rates, and reduced healthcare utilization and costs (Chen and Xu 2020; Lei and Zhang 2025; Long et al. 2025; Sohn et al. 2020). However, LTCI is not a panacea for addressing all care-related needs, as various policy challenges can undermine its effectiveness. For example, LTCI systems, including those in China and South Korea, adopt copayment strategies that require service recipients to make out-of-pocket payments, often resulting in unmet needs among low-income individuals, even when they receive financial support such as Medical Aid or reduced copayment rates (Sohn et al. 2020). Even Germany, widely regarded as a benchmark for LTCI implementation, assessed eligibility before 2017 with greater emphasis on physical capabilities than on cognitive and psychological functioning. This approach resulted in individuals with dementia receiving inadequate benefits, leaving their care needs unmet (Kotschy and Bloom 2022). The consequences of these unmet needs include heightened anxiety and increased healthcare utilization (Huang et al. 2024), highlighting the need for refined policy designs.

Given the role of LTCI policies in addressing unmet needs, existing literature has predominantly relied on quantitative methodologies to examine their impact on recipients' well-being (Lei and Zhang 2025; Sano et al. 2022; Sohn et al. 2020; Sugisawa et al. 2024). While such studies offer valuable insights into the effectiveness of LTCI, they overlook two critical dimensions of how recipients and their families navigate the care systems. First, prior quantitative analyses often conceptualize LTCI as one homogeneous

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intervention—classifying it simply as formal care, cash benefits, or hybrid models. This approach obscures the heterogeneity of policy components (e.g., benefit adequacy and the choice of caregivers) and fails to disentangle how specific policy mechanisms shape recipients' well-being. Second, these quantitative studies focus on specific aspects of unmet needs, such as activities of daily living (ADLs) and instrumental activities of daily living (IADLs) and explore how policies impact these dimensions. However, this narrow approach fails to capture the complexity of unmet needs and the nuanced ways they can be addressed, where needs are a multi-dimensional concept, with individuals often requiring tailored support that extends beyond standardized definitions (Graham et al. 2024; Kalánková et al. 2021). Specifically, older recipients may perceive the current provision of LTCI as inadequate, even when standardized surveys classify these needs as "met," as such surveys fail to capture the extent and specific dimensions of unmet needs. These gaps hinder policy efforts to develop person-centered care and improve older adults' well-being.

This study explores older adults' and their family members' perceptions of policy features and mechanisms related to care needs among older recipients in Guangzhou, China. Specifically, the research questions are: (1) How does LTCI relate to older recipients' care needs? (2) For the needs that are met, which LTCI policy features do older adults and their families perceive as effective in addressing these needs? (3) For the unmet needs, what improvements do they suggest could enhance LTCI to address these gaps? Following prior research, unmet needs in this study are defined as the gap between felt need (as perceived by individuals) and expressed need (the amount of help received or demanded) (Brimblecombe 2022; Mahoney et al. 2019). This subjective definition allows for the identification of individualized and participant-defined aspects of need not currently being met by LTCI.

LTCI in Guangzhou

To address growing care needs, China launched LTCI pilots in 15 cities, including Guangzhou and Shanghai, in 2016. The program aims to improve access to affordable formal care from public or private institutions (Zhang et al. 2026). The central government recommends a reimbursement rate of 70% of eligible expenses, emphasizing shared responsibilities with individuals and families. LTCI mainly covers individuals enrolled in Urban Employee Basic Medical Insurance (UEBMI) who have a formal work history and determines eligibility largely based on physical limitations rather than a comprehensive assessment of physical and mental functioning. While the central government provides policy directives, local governments are responsible for designing and implementing local policies, such as benefit levels and eligibility criteria (Table A1). For example, several cities, such as Qingdao and Shanghai, provide in-kind services for eligible older adults, while some cities, such as Guangzhou and Chengdu, allow older adults to receive cash benefits and select caregivers based on their preferences.

Guangzhou is the administrative capital of Guangdong province and one of China's largest metropolises. It introduced LTCI in August 2017. The program covers all residents aged 18 and above who are enrolled in local social health insurance programs, including UEBMI and Urban and Rural Residents Basic Medical Insurance (URRBMI). In 2015, social health insurance programs covered 98% eligible local residents (Nanfang Daily 2016), indicating that almost all residents were covered before the introduction of LTCI. While all adult residents are eligible to apply for LTCI benefits, the program primarily targets older adults, particularly those aged 85 and above (China News 2017; Shi et al. 2024). Additionally, a notable disparity exists in benefit levels. Urban employees receive twice the benefits amount compared to urban residents and rural residents (Online Appendix A Table A2). This inequality reflects the occupation-based welfare system in China, where higher public spending favors urban employees.

Guangzhou's LTCI benefits encompass both HCBS and institutional care, with HCBS including personal and medical care (Zhang et al. 2026). For personal care, recipients can choose between in-kind services provided by agency-designated caregivers or cash benefits, which are mainly used to hire caregivers, including relatives and domestic helpers. While the system offers flexibility in selecting caregivers, home care agencies play an important role in implementing LTCI and often enforce age restrictions (typically under 65) to ensure that caregivers are physically capable of fulfilling their responsibilities (see Online Appendix A for details). The program also allows recipients to rent care-related equipment—such as wheelchairs and rehabilitation devices—from a government-designated catalog.

In addition to allowing recipients to choose cash benefits, Guangzhou's LTCI program is characterized by comprehensive coverage. Unlike many other pilot cities in China that predominantly target urban employees with physical impairments, Guangzhou's program extends eligibility to both urban and rural residents, including those with dementia—though this inclusion was discontinued after June 2023 due to challenges in implementing dementia-related needs assessment (Ye et al. 2024).

Theoretical framework

The convoy of care model provides a valuable framework for understanding older adults' well-being in the context of their care networks as well as the personal and situational characteristics that influence these networks (Fuller et al.

2020). Care convoys encompass all individuals who provide support—professional/formal caregivers and family caregivers. The structure, support, and quality of these convoys—determined by personal characteristics (e.g., age, gender, and socioeconomic status) and situational factors (e.g., policy and culture)—collectively shape older adults' well-being (Vogel et al. 2024). Structure is the objective characteristics of the care networks, including composition (family or professionals) and the number of caregivers. Support refers to the level of care older adults receive, provide, or exchange. Quality reflects older adults' subjective evaluation of the care they receive. These three dimensions are particularly useful for examining how older adults' unmet needs are related to LTCI policies. Rather than providing services directly, LTCI policies indirectly relate to unmet needs by altering the structure, support, and quality of care networks. While this study focused on older recipients' care needs, the convoy of care model remains useful because respondents often discussed interactions with professional caregivers and agency nurses, demonstrating the relevance of this framework for understanding how care needs are shaped.

Existing studies have shown that personal characteristics are associated with unmet needs through modifying older adults' care networks. Typically, women and individuals with low socioeconomic status have limited caregiving resources, heightening their likelihood of experiencing unmet needs. For example, because women tend to outlive their husbands, they are less likely to receive care from spouses, which elevates their risk of admission to care homes (Aaltonen, Deeg, and Broese Van Groenou 2024; Mccann et al. 2012). Similarly, older adults in the lowest income quantiles are less inclined to afford formal care, resulting in more unmet needs compared to wealthier counterparts (Albertini and Pavolini 2017; Albuquerque 2022).

However, few studies investigated how specific LTCI policies related to unmet needs from the perspectives of older adults and their families. Existing research has largely employed quantitative methods and focused on the adequacy of LTCI benefits. For example, Sohn and colleagues (2020) found that copayment requirements for formal care under the LTCI system in South Korea increased financial burdens for low-income recipients, resulting in higher mortality rates compared to higher-income recipients. Sano and colleagues (2022) indicated that the increased coinsurance rates for higher-income recipients in Japan's LTCI reduced the use formal care, though recipients' well-being were not evaluated in their analysis. Recently, some studies have examined the care preferences of older recipients and their families under LTCI systems, emphasizing the value of flexibility in hiring family caregivers to maximize autonomy and independence (Eggers and Xu 2024; Zhang et al. 2026). These insights highlight the importance of understanding the views of recipient and family members, whose lived experiences can uncover nuanced, suboptimal policy features that policymakers might overlook.

Methods

Participants

We conducted semi-structured interviews with 24 individuals in Guangzhou, including six older adults receiving HCBS and 18 family members of older recipients. The term "respondents" is used to collectively refer to both groups, and the analysis emphasizes shared experiences over divergent views. This approach aligns with our study objectives, which focus on unraveling the mechanisms through which LTCI relates to unmet needs rather than comprehensively comparing the perspectives of older recipients and their family members. While LTCI targets disabled older adults, we recruited more family members than older recipients because Guangzhou prioritized recipients with the greatest needs, who were typically of advanced age and had severe functional limitations, making participation in interviews less likely (China News 2017; Shi et al. 2024; Zhang et al. 2024). The inclusion of family members in our study is critical because they play a major role in navigating the complex care system on behalf of older recipients, including gathering information, coordinating services, and managing administrative responsibilities associated with using LTCI, enabling them to provide valuable insights into how care was accessed and arranged under the LTCI program.

Data collection

The respondents were recruited through two care agencies that acted as street-level bureaucrats between April and August 2021. Agency nurses, trusted by older recipients and their families, approached potential respondents and invited them to express interest in participating in the interviews. To capture a diverse range of experiences of using HCBS, we used a purposive maximum variation sampling strategy. This involved selecting respondents with varying background characteristics, including: (1) older recipients aged 60 or above, or their family members, (2) urban employees or urban/rural residents who received different benefit amounts despite equal needs, and (3) respondents engaging with different types of caregivers, including agency-designated caregivers, family members, and domestic helpers. Caregivers were defined as those registered in LTCI as providing care for older recipients, although other family members may also assist, for example by helping navigate health and long-term care systems or providing support when registered caregivers were unavailable. All respondents were cognitively competent and capable of communicating fluently in Cantonese

or Mandarin, regardless of functional ability. Interviews were conducted in participants' homes by JZ, with support from a research assistant. Semi-structured interviews, based on a team-developed interview guide (Online Appendix B), were conducted to explore respondents' lived experiences with LTCI. Example questions included "How has LTCI changed the older recipient's life?" and "What do you think how LTCI should be improved to make you/older recipients better?" Semi-structured interviews lasted on average 36 min.

Table 1 presents the characteristics of respondents. Among the 24 respondents in this study, there was an equal representation of male and female respondents. Half of the recipients were 85 years or older, while most family members were under 60. Among the recipients, two-thirds (n = 15) received benefits designated for urban employees, while the remaining one-third (n = 9) received benefits for urban and rural residents.

Table 1 Respondent characteristics (n =24)

Characteristics	Older recipient (n = 6)	Family member (n = 18)
Gender		
Female	3	10
Male	3	8
Age in years		
< 60	–	11
60–84	3	5
≥ 85	3	2
Education attainment		
Illiterate	2	–
Below high school	3	11
High school or above	1	7
Living arrangement of recipient		
Only living with spouse	1	5
Living with others	5	13
Recipient with dementia		
No	6	11
Yes	–	7
Recipient benefit type		
Urban employee	4	11
Urban/rural resident	2	7
Caregiver		
Agency-designated caregiver	2	5
Self-directed domestic helper	1	2
Family members	3	11
Relation with recipient		
Spouse	–	6
Adult child	–	11
Sister	–	1

Analysis

The data were analyzed using reflexive thematic analysis (TA), a method for identifying and interpreting patterns of meaning across the dataset. TA includes a family of methods that allow for flexible application across various theoretical perspectives and analytic orientations (Braun et al. 2022). Reflexive TA, in particular, embraces the researcher's subjectivity as a resource in theme development, supporting a variety of approaches (Campbell et al. 2021). Our analysis used a deductive approach guided by the convoy of care framework, which enabled us to identify policy components shaping the structure, support, and quality of care networks. Themes were generated at the semantic level, focusing on explicit, surface-level meanings of data items. Details are provided in Online Appendix B.

Results

Our analysis generated three themes (Fig. 1). The first theme involves how policies were associated with unmet needs through changing the structure of care networks. The second theme identified two policies and their relationships with the level of support available to older recipients. The third theme revealed policies related to the quality of care.

Theme 1: Policies and the structure of care networks

Respondents expressed that LTCI facilitated access to formal care, empowered them to choose preferred caregivers, and agency nurses emerged as a crucial part of their care networks.

Sub-theme 1.1 The activation of formal care through LTCI

Respondents reported gaining access to formal care through LTCI benefits. For example, one respondent described how LTCI facilitated formal support:

> *"At first my wife cared for me, but she hurt her back and had surgery. My son had to work, and no one could help. Later we applied for LTCI, and the agency sent a care worker. She cut my hair, shaved me, and helped me wash. (Case 5, male, age 67, recipient, agency-designated caregiver)"*

This illustrates how LTCI enabled access to formal care when family members were no longer able to provide support.

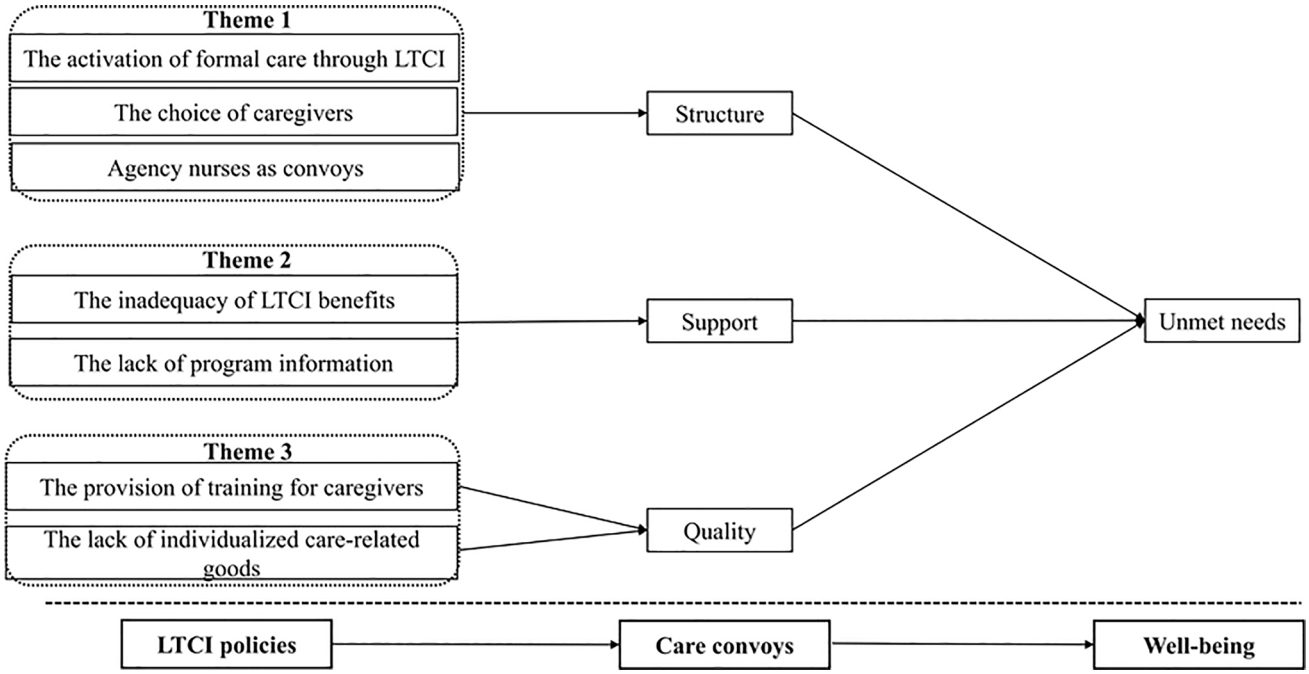

Fig. 1 Themes and identified policy features shaping unmet needs

Sub-theme 1.2 The choice of caregivers

Respondents emphasized active involvement in selecting caregivers. Rather than accepting caregivers assigned by care agencies, respondents were allowed to choose caregivers who provided more responsive services, thereby enhancing overall satisfaction with care. One family member appreciated this flexibility, sharing:

> *"The agency let us choose caregivers. That's great because we could compare who would provide the best care. We stayed with our domestic helper—not because others were worse, but because she matches my mom's preferences: gets along with her, speaks Cantonese, and cooks local dishes. (Case 15, female, age 67, daughter, domestic helper)"*

While this flexibility was valued, some respondents expressed dissatisfaction with certain restrictions, especially the age limit of 65 for caregivers. Care agencies enforced this guideline, prohibiting workers over 65, regardless of their actual capabilities. One respondent shared his frustration with this restriction and desired greater flexibility:

> *"The caregiver is perfectly capable of caring for my wife—patient and strong enough to lift and turn her in bed. Whenever she takes leave, everything falls apart. My son has to work, and it's a real headache. I wish the government would let her work longer; otherwise, I don't know what I'll do. (Case 19, male, age 91, husband, agency-designated caregiver)"*

This reflects a mismatch between caregiver preferences and policy constraints, highlighting the need for flexible policy implementation to maintain the continuity of care and prevent unmet needs.

Sub-theme 1.3 Agency nurses as convoys

Respondents emphasized that agency nurses served as care convoys, complementing the roles of family and professional caregivers. During home visits, nurses collaborated with caregivers and families by applying their expertise to tasks such as monitoring health conditions (e.g., blood pressure), and offering tailored guidance to caregivers, and supervising caregivers' services. As one family member noted:

> *"My dad has digestion issues. We used to give him only porridge and cabbage, but the nurse noticed his needs and taught us helpful tips—using Arirang (Dongbei) rice instead of foxtail millet, adding sweet potato and some vegetables, and mashing everything for easier eating. Now he feels better and poos more regularly. (Case 14, male, age 53, son, paid family caregiver)"*

Acting as important care convoys, nurses also offered emotional support to older recipients. One recipient described the role of nurses in supporting her, "I can't go out to chat with other people. When the nurse comes, I

feel really happy and just want to talk a bit more." (Case 2, female, age 69, paid family caregiver).

Theme 2: Policies and the level of support

Respondents indicated two policy aspects related to the adequacy of support: inadequate budgets that hindered access to formal care and a lack of program information that delayed or prevented LTCI utilization.

Sub-theme 2.1 The inadequacy of LTCI benefits

While LTCI facilitated access to formal care, urban and rural residents reported that its benefits were inadequate to fully meet care needs. They received lower reimbursement rates and faced more constrained financial resources than urban employees. In contrast, urban employees often found the costs of hiring professional caregivers manageable, as their pensions helped offset out-of-pocket expenses. One family member described how his father's pension allowed them to hire professional caregivers and increase service hours to address unmet needs:

> *"Last year, LTCI gave my dad four hours of care daily, however, the caregiver could only do the basics, and his feet got twisted. We doubled care to eight hours, costing USD 488 (RMB 3,500) a month. My parents' total pension of USD 1,116 (RMB 8,000) covers all expenses. (Case 20, male, age 62, agency-designated caregiver)"*

In contrast, urban and rural residents often felt greater financial strain due to their lower benefits compared to urban employees. One family member stressed this inequality and the burden on her family:

> *"My parents are urban residents with no pensions and lower healthcare reimbursement rates…The government treats them as "the children of a mistress." They only get USD 98 (RMB 700) monthly, while urban employees get USD 279 (RMB 2,000) plus pensions around USD 558 (RMB 4,000)! LTCI just makes the welfare gap wider. For us, these benefits hardly help with what my parents need. (Case 9, female, age 60, daughter, domestic helper)"*

To cope with inadequate benefit levels, older recipients primarily relied on financial contribution from adult children to hire professional caregivers. Another commonly used strategy involved hiring family members. One recipient explained his decision to hire his son as the caregiver, "My pension is USD 720 (RMB 5,000) and must cover my medical expenses. The LTCI benefit is too low for me to hire domestic helpers." (Case 4, male, age 87, paid family caregiver).

Sub-theme 2.2 The lack of program information

Most respondents reported difficulties in obtaining information about LTCI, which delayed or prevented their utilization of benefits. While they relied on different information channels, such as television, friends, and residents' committees (*Juweihui,* the lowest administrative unit in China responsible for coordinating social services and government communications with residents), many described the process as "by chance." This phrase reflects the lack of formal or government-led systems for disseminating program information, compelling individuals to rely on informal channels or chance encountered. One older recipient shared how he unexpectedly learned about LTCI, "During Covid-19, agency nurses were handing out masks on the street, and by chance, we started talking to them. That's how we learned about LTCI." (Case 5, male, age 67, agency-designated caregiver).

Even when nurses proactively promoted LTCI, many respondents found it challenging to trust them due to their unfamiliarity. Some respondents mistakenly perceived the nurses as "financial scammers" or "insurance salespeople," fearing they cared more about selling premiums than providing benefits. This distrust led many to hesitate to apply for LTCI, delaying access to timely services and leaving care needs unmet.

Respondents expressed the need for more comprehensive information from trusted sources, such as residents' committees and social media (television and radio). Some respondents sought information about alternative agencies to make informed decisions. One family member shared how her friend switched to a different agency after discovering a lower-cost option, "My friend found another agency charging USD 2 (RMB 15) less per month, so she switched." (Case 16, female, age 57, wife, paid family caregiver).

Additionally, some respondents expressed the need for more information about care-related goods (e.g., wheelchairs and anti-decubitus mattress). When the researchers asked if they had rented care-related goods using LTCI, some respondents appeared disappointed, "No one told us, so we bought this adjustable bed and made home adaptations ourselves." (Case 6, female, age 71, agency-designated caregiver). Overall, respondents desired more comprehensive information to help them access LTCI services, eventually addressing older recipients' care needs.

Theme 3: Policies and the quality of care

Sub-theme 3.1 The provision of training for caregivers

Respondents indicated that training for caregivers provided by LTCI improved the quality of care and alleviated unmet needs. Training equipped workers with practical skills and

an improved understanding of older recipients' needs. A paid family caregiver reflected: "Before the training, I'd just give my mom meals without noting her needs. Afterward, I learned massage for pain relief and started focusing more on her mental well-being. (Case 7, male, age 55, son, paid family caregiver)." This shows that LTCI-supported training enabled caregivers to gain skills, which in turn helped address older recipients' care needs.

Sub-theme 3.2 The lack of individualized care-related goods

Several respondents expressed that the current provision of assistive devices and equipment was ineffective in addressing individualized needs. Some described certain goods, such as crutches and wheelchairs, as "redundant" because they already possessed similar items, yet care agencies still provided them. Others perceived goods like GPS-tracking watches—intended to prevent older adults from getting lost—as irrelevant, particularly for older recipients who were bedridden. One older recipient explained, "I'm too old to use rehabilitation devices. Even if given, my hands are too weak to use them. It's unnecessary." (Case 5, male, age 67, agency-designated caregiver).

In addition to the mismatch between available goods and the recipients' needs, the scope of care-related goods provided under the LTCI program was perceived as limited. The government offered only a limited catalog of items, and older recipients were required to choose from this predetermined list. Many respondents desired greater flexibility in selecting goods to align with the individualized needs of older recipients. They expressed the need for an expanded list of items covered by LTCI, including balm, incontinence briefs, and support for social health insurance premiums. One recipient described his specific needs, "I can't really move around. Even when I go out for a meal with my family, it hurts when I move. I wish the government could help with things like pain relief balm or patches." (Case 3, male, age 86, paid family caregiver). These perspectives emphasize the importance of expanding the range of care-related goods to better address individualized needs of older recipients.

Discussion

To our knowledge, this is the first study to explore how LTCI-funded HCBS relate to unmet needs from the perspectives of older recipients and their families in China. Drawing on the convoy of care framework, our study disentangles crucial policy features and how they relate to the structure, quantity, and quality of support for older adults and their unmet needs. We identify four policy mechanisms that mitigate unmet needs: (1) enrolling individuals to receive formal care, (2) flexibility in selecting caregivers, (3) integrating agency nurses into care networks, and (4) providing training for caregivers. Conversely, unmet needs persist due to suboptimal policy designs, including inadequate budgets, insufficient program information, and limited access to individualized care-related goods. These findings underscore crucial implications for governments to refine LTCI implementation and enhance older adults' well-being. The discussion section is organized as follows. The next three paragraphs focus on policies that mitigate unmet needs. Enrolling individuals to receive formal care is not addressed because this finding is straightforward. The following three paragraphs discuss policies that contribute to unmet needs. Finally, we present the implications and limitations of this study.

Older adults and their families highly value the flexibility in selecting caregivers, as it enables them to tailor their care networks to individualized preferences and needs. This finding aligns with previous studies on care preferences, suggesting that compensating family caregivers through LTCI could mitigate unmet needs and better integrate family caregivers into the care system (Eggers and Xu 2024; Zhang et al. 2026). However, our findings demonstrate that the age requirement for caregivers restricts the flexibility in selecting caregivers. Practitioners could adopt a more nuanced approach to assess the competency of caregivers, prioritizing skills and experience over "one-size-fits-all" criteria.

Agency nurses play a vital role in the care networks of older adults, shaping their care experiences and outcomes. Unlike family and professional caregivers who focus on instrumental support, nurses collaborate with these caregivers by offering specialized services (e.g., health condition monitoring). These services complement instrumental care, enhancing older adults' well-being. While prior literature reveals caregivers' support as the primary mechanism through which LTCI addresses unmet needs (Lei and Zhang 2025; Sano et al. 2022; Sohn et al. 2020; Sugisawa et al. 2024), we identify nurses' contributions as an additional crucial mechanism.

Training for caregivers is an additional mechanism through which LTCI addresses older adults' care needs. Beyond direct benefits for care recipients, training programs enhance caregivers' skills, reduce their distress and care burden, and ultimately delay older adults' institutionalization and improve their well-being (Cheng et al. 2022). Recognizing these advantages, countries like Germany and South Korea have adopted caregiver-training policies to ensure service quality (Chon 2012; Nadash et al. 2018). To better meet older adults' complex needs, policymakers might refine training programs by tailoring content to caregivers' individual contexts and enabling module selection based on individualized needs (Cheng et al. 2022).

While LTCI facilitated access to formal care, inadequate budgets contribute to unmet needs, particularly among

urban and rural residents. The reimbursement policy disproportionately affects urban employees and urban or rural residents due to China's occupation-based welfare system. This system favors urban employees through higher public spending, including pensions and social health insurance reimbursement rates (Yuan et al. 2022; Zhang et al. 2026). Consequently, urban employees can use their pensions to cover co-payments and formal care costs, whereas urban and rural residents often lack financial resources to meet these expenses. This disparity in LTCI benefits reinforces the occupation-based welfare inequalities, leaving the care needs of urban and rural residents unmet. Additionally, the reimbursement rules interact with policies on freely selecting caregivers, compelling urban and rural residents to rely on their families—even when family caregivers are unavailable due to burnout. Therefore, the government could acknowledge these financial disadvantages facing urban and rural residents and address their unmet needs.

Inadequate service information hinders timely access to LTCI, causing unmet needs. This finding is consistent with existing research, highlighting that the lack of program information delays and restricts access to public services (Benoit and Marier 2024; Zhang et al. 2026). To better inform older recipients and their families, the government could disseminate information through trusted channels, such as residents' committee, official social media platforms, and care agencies that have established relationships with individuals.

Not all older adults demand care-related goods. Our findings indicate that targeted allocation of these goods could prevent waste and ensure they benefit individuals with genuine needs. Additionally, the current prescribed catalog of goods constrains individual choices, leaving many older adults underserved. Therefore, policymakers could consider expanding the catalog and empowering individuals to choose items that align with their specific needs.

Theoretical and practical implications

This study has several theoretical implications. First, it uncovers nuanced mechanisms through which LTCI-funded HCBS addresses care needs. Whereas previous studies have demonstrated the effectiveness of LTCI and emphasized instrumental support as the primary mechanisms (Lei and Zhang 2025; Sohn et al. 2020; Sugisawa et al. 2024), this study reveals three additional mechanisms: the flexibility in selecting care workers, the integration of agency nurses into care networks, and the provision of training programs for caregivers. These findings highlight that the effectiveness of LTCI lies in its various policy features, not solely in instrumental help. Additionally, this study does not negate the role of objective measures in identifying absolute care gaps, where receiving assistance does not necessarily indicate that the support is adequate or satisfactory. Instead, our findings, based on lived experiences, focus on uncovering suboptimal service provision due to policy features, which complements objective measures by capturing more nuanced aspects of care needs.

Second, we extend the convoy of care framework by identifying how specific LTCI policies relate to the structure, support, and quality of care networks, contributing to older adults' well-being. These multi-dimensional policies do not operate in a vacuum. Specifically, reimbursement rules interact with policies allowing the selection of caregivers, making formal care less affordable for urban and rural residents than for urban employees. These findings provide scaffolding for examining how policies relate to care networks, for example, whether benefit levels are associated with family members' intention to become paid caregivers.

Our study also provides practical implications for the development of LTCI policies. First, many countries face challenges in determining the appropriate level of public support—deciding which needs should be addressed and which unmet needs are unavoidable or even acceptable. Identifying unmet needs does not necessarily mean that all of them should or can be addressed by public programs (Mahoney et al. 2019). While answering the philosophical question of what proportion of unmet needs public programs should cover goes beyond the scope of this study, policymakers could refine specific LTCI policies identified in our study by adapting policy features to local contexts. For example, in contexts of limited public funding and professional caregiver shortages, policymakers could prioritize low-cost policies, such as granting more flexibility in hiring family caregivers to reduce older adults' unmet needs. When increasing LTCI benefits, the government could prioritize urban and rural residents who receive less state support and are more likely to experience unmet needs compared to urban employees.

Second, the results from this study offer valuable insights for other cities in China and countries that are currently establishing LTCI policies. While previous studies on LTCI in China have focused on advocating for the expansion LTCI, our study advances this discourse by uncovering key policy features essential for its implementation. These findings do not imply that all LTCI programs must adopt these components; rather, they offer important directions for policymakers in designing and implementing LTCI programs. Lastly, governments could refine local policies by investigating lived experiences of older recipients and their families, ensuring that service provision is tailored to individualized needs and preferences.

Limitations

This study has some limitations. First, the findings may not be transferable to older adults receiving LTCI-funded institutional care, as they may differ in individual characteristics

(e.g., the availability of family support) from those living in the community. While institutional care is available in Guangzhou, it is less attractive due to older adults' preferences for aging-in-place and LTCI designs (Li et al. 2023). LTCI reimburses 90% of HSBC expenses compared with 75% for institutional care, and in 2021, 76% of beneficiaries chose HSBC (Zhang et al. 2024). Consequently, the experiences in this study largely represent a context dominated by HSBC, with only a small share receiving institutional care. Second, given the severe functional impairments among older recipients in Guangzhou and our limited resources, we were only able to recruit a small sample of older recipients for interviews. As a result, the perspectives we gathered were predominantly from family members, which may limit the transferability of our findings, especially in situations where older recipients have different views from their family members. Third, due to the limited number of dyads interviewed, we were unable to discern potential discrepancies in the views of older recipients and their family members. Future research could explore how and why these two groups differ in perceived unmet needs, as well as the heterogeneous effects of LTCI on them. Fourth, resource constraints prevented member-checking with the respondents, a technique that could have further validated our interpretations. To mitigate this, a second researcher, independent of the interview process, coded the transcripts and reviewed the themes. Additionally, we maintained an audit trail to document key decisions, such as sampling, coding, and analysis, throughout the research process. The research team held regular meetings to facilitate ongoing reflexivity, ensuring reliability in interpretation and enhancing the dependability of our findings. Lastly, we did not include care professionals, such as nurses, in the interviews because our study focused on older recipients' experiences of unmet needs, and professionals may be less well positioned to reflect recipients' experiences. Given the importance of care professionals in service delivery, future studies could incorporate their perspectives to understand operational or organizational issues of LTCI. Despite these limitations, this is the first study to investigate how LTCI relates to care needs from the perspectives of older recipients and their family members.

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Author contribution JZ and JG were involved in writing, conceptualization, formal analysis, and data curation. WC and BH contributed to writing, conceptualization, and data curation.

Data availability The datasets generated during and/or analyzed during the current study are available from the corresponding author on reasonable request.

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References

Aaltonen M, Deeg D, Van Groenou MB (2024) Trends in long-term care use among Dutch older men and women between 1995 and 2016: is the gender gap changing? Ageing Soc 44(5):1180–1203. https://doi.org/10.1017/S0144686X22000678

Albertini M, Pavolini E (2017) Unequal inequalities: the stratification of the use of formal care among older Europeans. J Gerontol Series B Psychol Sci Soc Sci 72(3):510–521. https://doi.org/10.1093/geronb/gbv038

Albuquerque PC (2022) Met or unmet need for long-term care: formal and informal care in Southern Europe. J Econ Ageing 23:100409. https://doi.org/10.1016/j.jeoa.2022.100409

Benoit M, Marier P (2024) When hidden politics become visible: administrative burden experiences of older adults and professionals in home care. Int J Soc Welfare 33(4):832–845. https://doi.org/10.1111/ijsw.12664

Braun V, Clarke V, Hayfield N, Davey L, Jenkinson E (2022) Doing reflexive thematic analysis. In: Bager-Charleson S, McBeath A (eds) Supporting research in counselling and psychotherapy: qualitative, quantitative, and mixed methods research. Springer International Publishing, Cham, pp 19–38

Brimblecombe N (2022) Inequalities in receipt of long-term care services by disabled or older people and co-resident carer dyads in England. J Poverty Soc Justice 30(3):268–286. https://doi.org/10.1332/175982721X16605972092524

Campbell K, Orr E, Durepos P, Nguyen L, Li L, Whitmore C, Gehrke P, Graham L, Jack S (2021) Reflexive thematic analysis for applied qualitative health research. Qual Rep. https://doi.org/10.46743/2160-3715/2021.5010

Chen L, Xiaocang X (2020) Effect Evaluation of the Long-Term Care Insurance (LTCI) System on the Health Care of the Elderly: A Review. J Multidiscip Healthc 13(2020):863–875. https://doi.org/10.2147/JMDH.S270454

Cheng ST, Li KK, Peggy PL, Losada A (2022) Do caregiver interventions improve outcomes in relatives with dementia and mild cognitive impairment? A Comprehensive systematic review and meta-analysis. Psychol Aging 37(8):929–953. https://doi.org/10.1037/pag0000696

China news (2017) Guangzhou pilots long-term care insurance system to address population aging. https://www.chinanews.com/gn/2017/08-01/8293159.shtml.

Chon Y (2012) Long-term care reform in Korea: lessons from the introduction of Asia's second long-term care insurance system. Asia Pac J Soc Work Dev 22(4):219–227. https://doi.org/10.1080/02185385.2012.726422

Eggers T, Xu J (2024) Integrating familial care and extra-familial care into a new long-term care policy for China: examples from Germany's long-term care insurance. Int J Soc Welfare 33(1):42–60. https://doi.org/10.1111/ijsw.12581

Fuller HR, Ajrouch KJ, Antonucci TC (2020) The convoy model and later-life family relationships. J Fam Theory Rev 12(2):126–146. https://doi.org/10.1111/jftr.12376

Graham L, Brundle C, Harrison N, Andre D, Clegg A, Forster A, Spilsbury K (2024) What are the priorities for research of older people living in their own home, including those living with frailty? A systematic review and content analysis of studies reporting older people's priorities and unmet needs. Age Ageing 53(1):afad232. https://doi.org/10.1093/ageing/afad232

Huang J, Qian X, Choi EPH, Chau PH (2024) The consequences of unmet needs for assistance with daily life activities among older adults: a systematic review. Med Care Res Rev 81(4):295–310. https://doi.org/10.1177/10775587241233798

Kalánková D, Stolt M, Scott PA, Papastavrou E, Suhonen R (2021) Unmet care needs of older people: a scoping review. Nurs Ethics 28(2):149–178. https://doi.org/10.1177/0969733020948112

Kotschy R, Bloom DE (2022) A comparative perspective on long-term care systems. Int Soc Secur Rev 75(3–4):47–69. https://doi.org/10.1111/issr.12307

Lei X, Zhang C (2025) Cash-out puzzle and long-term care insurance: welfare of the elderly. Health Econ 34(4):714–726. https://doi.org/10.1002/hec.4935

Li Y, Zhang J, Luo H, Pei X, Wu T, Jing J (2023) The role of contextual factors in shaping urban older adults' intention of institutional care in China: a mixed-methods study. Int J Environ Res Public Health 20(6):4731. https://doi.org/10.3390/ijerph20064731

Long C, Yang W, Glaser K (2025) Can long-term care insurance reduce catastrophic health and long-term care expenditures among older adults? A quasi-experimental study in China. Eur J Ageing 22(1):25. https://doi.org/10.1007/s10433-025-00861-1

Mahoney KJ, Mahoney EK, Morano C, DeVellis A (2019) Unmet needs in self-directed HCBS programs. J Gerontol Soc Work 62(2):195–215. https://doi.org/10.1080/01634372.2018.1451421

Mccann M, Donnelly M, O'Reilly D (2012) Gender Differences in Care Home Admission Risk: Partner's Age Explains the Higher Risk for Women. Age Ageing 41(3):416–419. https://doi.org/10.1093/ageing/afs022

Nadash P, Doty P, von Schwanenflügel M (2018) The German long-term care insurance program: evolution and recent developments. Gerontologist 58(3):588–597. https://doi.org/10.1093/geront/gnx018

Nanfang Daily (2016) Guangzhou's health insurance enrollment rate has reached 98%, and children of migrant workers are expected to be included in the health insurance program. https://guangdong.eol.cn/guangdongnews/201612/t20161216_1476367.shtml.

Sano K, Miyawaki A, Abe K, Jin X, Watanabe T, Tamiya N, Kobayashi Y (2022) Effects of cost sharing on long-term care service utilization among home-dwelling older adults in Japan. Health Policy 126(12):1310–1316. https://doi.org/10.1016/j.healthpol.2022.10.002

Shi C, Chan W-K, Yang J (2024) Choice of formal and informal care among community-dwelling older people with or without dementia under a long-term care insurance pilot program in China. Australas J Ageing 43(2):248–255. https://doi.org/10.1111/ajag.13277

Sohn M, O'Campo P, Muntaner C, Chung H, Choi M (2020) has the long-term care insurance resolved disparities in mortality for older Koreans? Examination of service type and income level. Soc Sci Med 247:112812. https://doi.org/10.1016/j.socscimed.2020.112812

Sugisawa H, Sugihara Y, Kobayashi E, Fukaya T, Liang J (2024) Trends in informal and formal home help use among older adults with disabilities in Japan: from 1999 to 2017. Int J Soc Welf 33(1):220–236. https://doi.org/10.1111/ijsw.12596

Vogel S, Oliva y Hausmann A, Zank S (2024) Does the positive association between social relationships and cognition continue until very old age? Eur J Ageing 21(1):39. https://doi.org/10.1007/s10433-024-00835-9

Ye B, Xu Y, Chan WK, Zhang Z, Lobanov-Rostovsky S, Curry N, Brunner EJ, Liao J (2024) Why are people with dementia overlooked in long-term care insurance policy in Guangzhou, China? BMC Health Serv Res 24(1):1646. https://doi.org/10.1186/s12913-024-12126-1

Yuan B, Fang J, Li J, Peng F (2022) Chronic patients as retirement-aged workers: the impact of employment-based health insurance and chronic conditions on health-related working capacity and late-life career participation. Eur J Ageing 19(4):1351–1362. https://doi.org/10.1007/s10433-022-00721-2

Zhang J, Wang J-H, Chan WK (2024) Utilizing consumer-directed care among older adults: identifying barriers from behavioral economics perspectives. Res Aging 46(5–6):275–286. https://doi.org/10.1177/01640275231226228

Zhang J, Wang JSH, Chan WK, Chen Y, Lan D (2026) Conundrums in implementing consumer direction in home-based care: perspectives of older adults and family members in China. J Aging Soc Policy 38(3):413–434. https://doi.org/10.1080/08959420.2024.2422665

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