Patient Preference and Adherence

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ORIGINAL RESEARCH

Medication Discrepancy in the Hospital-to-Home Transition Period of Elderly Chinese Patients with Coronary Heart Disease: A Qualitative Study

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Purpose: This study aimed to explore the factors influencing medication discrepancies in elderly patients with coronary heart disease during the hospital-to-home transition through qualitative interviews.

Methods: This study used a descriptive qualitative research design. Purposive sampling was employed. Between March and September 2025, we conducted face-to-face, semi-structured interviews with sixteen elderly patients with coronary heart disease who had experienced medication discrepancies within one week after hospital discharge. All interviews were audio-recorded, transcribed, and subjected to content analysis guided by the Health Ecology Model.

Results: Five themes and twelve subthemes were identified: 1) Personal Characteristics, 2) Behavioral Characteristics, 3) Interpersonal Networks, 4) Living and Working Conditions, and 5) Policy Conditions.

Conclusion: Elderly patients with coronary heart disease face challenges with medication discrepancies during the hospital-to-home transition period, influenced by factors at the individual, interpersonal, community, and policy levels. Future research should focus on this critical and vulnerable phase to develop personalized interventions for this population. Strategies such as the teach-back method and encouraging patient involvement in medication decision-making may help improve medication safety.

Keywords: elderly, coronary heart disease, medication discrepancy, qualitative research

Introduction

With the acceleration of global population aging, the elderly population has become increasingly significant in the field of public health. Coronary heart disease (CHD) is one of the primary health concerns among the elderly and ranks among the most severe cardiovascular diseases worldwide, characterized by high incidence and mortality rates.[1,2] This trend is also evident in China.[3] According to the China Cardiovascular Health and Disease Report 2024, the prevalence of CHD shows a rapid upward trend with increasing age. Currently, pharmacotherapy serves as a cornerstone for both the treatment and secondary prevention of CHD. Guidelines recommend patients take multiple medications, including antiplatelet agents, anticoagulants, and lipid-lowering drugs.[4,5] This necessitates that patients continue standardized medication therapy after discharge. Patients often need to learn new medications, adjust to treatment plan changes during hospitalization, and establish new daily routines. The sheer number of medications and the complexity of treatment regimens pose significant challenges for elderly CHD patients.

The transition period from hospital to home is a critical stage for shifting patient management behaviors, typically defined as the first eight weeks post-discharge.[6] While hospitalized, patients rely heavily on healthcare provider guidance and supervision. After discharge, they must transition to self-directed medication management. However, due to factors such as limited self-management capacity, medication discrepancies are common during this period.[7] These medication

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discrepancies not only risk medication errors but also increase the likelihood of adverse drug events and patient readmission.[8] Therefore, early detection and in-depth exploration of underlying causes are crucial for correcting medication discrepancy and improving patient outcomes.

Medication discrepancy refers to discrepancies between patients' actual medication practices and prescribed treatment regimens.[9] Numerous quantitative studies have explored factors influencing medication discrepancies among elderly patients post-discharge. A survey of 184 elderly patients discharged from post-acute care facilities within one week revealed that 97.8% exhibited at least one instance of medication discrepancy.[10] Additionally, a telephone follow-up study of 107 coronary heart disease patients during their second week post-discharge revealed that 25 patients experienced at least one medication discrepancy episode within two weeks after discharge. These deviations were primarily patient-related, such as forgetting to take medication or feeling unwell.[11]

While numerous quantitative studies have documented the prevalence of medication discrepancies and identified some influencing factors, their ability to explore patients' subjective experiences and real-life contexts is limited. Consequently, these studies cannot fully elucidate the specific challenges patients face during the hospital-to-home transition. Notably, qualitative research focusing on medication discrepancies in this critical period among elderly patients with coronary heart disease is nearly absent. To date, only one qualitative study has examined this issue, employing surveys and interviews to investigate the incidence and psychological experiences of medication deviations in patients aged 18–59 with type 2 diabetes.[12] While it highlighted exogenous factors like social support, it did not address broader external influences such as healthcare policies. Moreover, its focus on a younger population with a different disease profile limits its applicability to elderly CHD patients. This population often manages more complex regimens (eg, antiplatelet agents, anticoagulants) and is particularly vulnerable due to cognitive decline, reduced physical function, and multiple comorbidities.

Therefore, this study will employ qualitative interviews to explore the factors influencing medication discrepancies among elderly CHD patients during the hospital-to-home transition. This approach aims to address the theoretical gap concerning patient experiences and contextual factors, thereby providing a practical foundation for developing targeted future interventions.

Methods

Study Design

A descriptive qualitative design was used to explore the factors influencing medication discrepancies through semi-structured interviews.

Patient Participants

Recruitment was conducted at a large tertiary hospital in Guangzhou, China, and purposive sampling was employed. To gather as much information as possible, we employed a maximum variation sampling strategy based on patients' demographic information (eg, age, gender, education level) and disease-related factors (eg, disease duration, comorbidity index).

Inclusion criteria for this study comprised the following: patients diagnosed with coronary heart disease aged ≥60 years; receiving medication therapy; exhibiting at least one medication discrepancy event within one week post-discharge; and providing informed consent for voluntary participation in the study. Exclusion criteria included: inability to communicate effectively with the patient or caregiver; transfer to another healthcare facility (including nursing homes) after discharge; presence of other critical conditions such as respiratory failure; participation in other drug clinical trials.

Given that patients who are willing to actively discuss medication-related issues are not only limited in number but may also fail to fully reflect different types of medication deviations, this study also included patients' past experiences of medication deviations that occurred within one week after discharge. This approach aims to expand the sources of information and enhance both the representativeness of the sample and the richness of the research findings. Recruitment continued until thematic saturation was achieved. After 14 interviews, thematic saturation was achieved. Two additional participants were interviewed to confirm no new themes emerged. Data from these two patients were ultimately included

in the analysis. The study ultimately recruited 16 elderly patients with coronary heart disease. The study protocol was approved by the Ethics Committee.

Interview Guide Development

Based on research objectives and a literature review, researchers prepared a preliminary interview outline and conducted pre-interviews with two elderly coronary heart disease patients to refine the interview guide. Since patients were unlikely to grasp the concept of medication discrepancies, we incorporated examples of medication discrepancies into the guide to aid understanding. After multiple iterations, the final interview outline was established. The interview began with an open-ended question: "What challenges have you encountered while taking your medications?" The final version of the interview guide is presented in Supplementary Material Figure 1. Data collected during the preliminary interviews were used solely to guide revisions to the interview questionnaire and were not included in the analysis phase of the formal trial.

Data Collection

Data were collected through semi-structured interviews. The research team first identified potential participants and established positive rapport with them during their hospital stay, while also obtaining informed consent and collecting basic information. Subsequently, based on the patients' discharge records, follow-ups were conducted via telephone or WeChat on the 7th day after discharge to assess whether any medication discrepancies had occurred. Patients who were confirmed to have experienced medication discrepancies were included as study subjects and contacted for face-to-face interviews. Prior to each interview, the research purpose, procedures, recording requirements, and confidentiality issues were explained in detail to the patients, and informed consent was obtained again. The participants' informed consent included permission for the publication of anonymized responses and direct quotes. All participants were informed of the interview time and location.

Interviews were conducted between March and September 2025 in quiet consultation rooms within the hospital. Interviews were conducted by two female nursing masters (HH and P-PS) with cardiovascular medicine backgrounds who received systematic training. To minimize bias, the interviewers had no prior clinical or personal relationship with the participants. Only two interviewers and one interviewee were present. Each interview lasted 20 to 54 minutes and was audio-recorded. At the same time, the interviewer also recorded non-verbal expressions, such as facial expressions and body language. Participants filled out the informed consent form and the characteristic questionnaire before the interview.

Within 24 hours after each interview, two team members (HH and WJX) transcribed the interviews. After verifying the quality of transcripts, the data were de-identified for analysis.

Data Analysis

Using Nvivo 12.0 software, interview data were processed according to the framework method proposed by Ritchie and Spencer and guided by McLeroy's health ecology theory.[13] This theory was initially proposed by McLeroy et al in 1988, building upon the foundation of Social Ecological Theory.[14,15] With ongoing development, the Health Ecological Model (HEM) has progressively delineated influencing factors into five interconnected layers: at the core lie innate individual traits, followed outward by behavioral characteristics, interpersonal networks, living and working conditions, and finally, the policy environment. Scholars both domestically and internationally have conducted extensive research on the factors associated with medication discrepancies. These findings indicate that the influencing factors of medication discrepancies are complex, encompassing not only physiological aspects but also psychological, social, and other dimensions. As a comprehensive analytical framework, the HEM is capable of systematically integrating multi-level influencing factors, including those at the individual, behavioral, interpersonal, environmental, and policy levels. Current research not only focuses on endogenous drivers but also emphasizes exogenous drivers such as patients' social support and informational support, yet it fails to consider the influence of the living environment and policy context. Compared to a single-perspective approach, the Health Ecological Model emphasizes multidimensionality and holism, facilitating a comprehensive and in-depth identification and understanding of the internal and external drivers behind the occurrence

of medication discrepancies. Therefore, this study adopts this model as its theoretical framework, aiming to provide a scientific basis for developing more targeted and systematic intervention measures.

Prior to analysis, a preliminary coding scheme was developed based on health ecology theory. Two researchers (HH and WJX) independently read and re-read the transcripts to familiarize themselves with the data. Through this process, they inductively developed codes and constructed a thematic framework. The initial framework was then applied to index and categorize the data. A framework matrix was used to summarize and present the data. Data were mapped and interpreted using theoretical concepts that matched the data. An example is shown in Table 1.

A total of 16 patients were enrolled in this study. To ensure privacy protection, all participants were anonymized and are referred to as P1 through P16. Table 2 presents the baseline characteristics of the patients. The cohort comprised 13 males and 3 females. The mean age of the participants was 70 ± 6.54 years, with a range of 60 to 79 years. Nine patients (56.3%) had an educational level of high school or below. In terms of marital status, 87.5% were married and 12.5% were widowed. Three patients (18.8%) were newly diagnosed with coronary heart disease. The mean disease duration for all patients was 4.47 ± 3.90 years. The majority of patients (87.5%) had a comorbidity index of 3 or 4. The average number of medications prescribed was 9.25 ± 3.42, and 9 patients (56.3%) were required to take between 7 and 10 medications upon discharge.

Rigour

To ensure trustworthiness, we employed multiple methods, including credibility, dependability, and transferability.[16] Credibility was ensured through verbatim transcription of recordings during interviews, maintaining consistency with

Table 1 Examples of The Data Analysis

Data Extract	Code	Sub-Theme
1. Generally, I do not bother to learn about drug side effects. As a patient and an ordinary person, I do not think it's necessary to study them too deeply. 2. After taking them for two or three days, I get annoyed and just take everything once a day, but not necessarily at a fixed time. I do not think about whether it's on schedule —I just take them when I have time.	Not knowing the side effects of the drug Take medicine at irregular times	Lack of Knowledge About Diseases and Medications Insufficient Medication Self-Efficacy
3. I told the doctor to just prescribe these two medications.	Not telling the doctor	Lack of Communication and Trust with Doctors

Table 2 Demographic and Sociological Data of the Respondents (N=16)

NO.	Age (Years)	Gender	Educational Level	Marital Status	CCHD (Years)	CCI	ND
P1	64	Male	Technical Secondary School	Married	0	3	4
P2	77	Male	Junior High School	Married	0	5	12
P3	70	Male	Senior Middle School	Married	11	6	17
P4	73	Male	Junior College	Married	10	4	8
P5	75	Male	Junior College	Married	10	4	7
P6	75	Female	Technical Secondary School	Widowed	1.5	4	7
P7	66	Male	Senior Middle School	Married	0	4	10
P8	71	Female	Junior College	Widowed	8	4	8
P9	60	Male	Junior College	Married	5	3	8
P10	75	Male	Technical Secondary School	Married	2	4	13
P11	79	Female	Junior High School	Married	3	3	13
P12	63	Male	Senior Middle School	Married	6	3	7
P13	70	Male	Primary School	Married	1	3	6
P14	61	Male	Primary School	Married	1	3	7
P15	79	Male	Junior High School	Married	7	4	13
P16	62	Male	Primary School	Married	6	3	8

Abbreviations: CCHD, course of coronary heart disease; CCI, charlson comorbidity index; ND, number of medications.

original data during directed content analysis, and regular team discussions until consensus was reached (P-PS, XW, and XF). Transferability was achieved through purposeful sampling. We conduct maximum difference sampling to ensure the diversity of elderly patients with coronary heart disease. We employed several reflexivity strategies to enhance the trustworthiness of our findings. In the interview phase, we mitigated preconceptions by adhering to a stance of non-judgmental listening. During the analytical phase, we maintained objectivity through ongoing critical reflection on how our social identities, experiences, and emotions might shape the interpretation of the data. Additionally, we adhered to the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist to ensure methodological rigor.[17]

Results

Participant Characteristics

In total, Sixteen patients were interviewed and their identities have been anonymized for privacy reasons, and are referred to as P1 to P16. Table 3 displays the general information of the interviewed patients.

Factors Influencing Medication Discrepancy Among Elderly Coronary Heart Disease Patients

Five main themes emerged from the interviews. Themes and sub-themes are shown in Table 3.

Theme 1: Personal Characteristics

Lack of Knowledge About Diseases and Medications

During the transition period after hospital discharge, self-management is crucial for elderly patients with coronary heart disease to establish proper medication adherence. However, most participants in this study lacked sufficient knowledge regarding disease and medication management. A common issue was that many adjusted their medication dosage or frequency, or even discontinued use, based on personal experience or subjective judgment rather than professional advice. Only four respondents reported proactively consulting medication instructions, yet even these patients demonstrated limited understanding of the names and effects of the drugs they were taking and failed to consistently follow medical guidance in practice. This issue was particularly pronounced among patients experiencing CHD for the first time, as they often underestimated the necessity for long-term, regular medication. For example, one participant who underwent stent implantation for the first time believed that medication was no longer required once blood flow was restored, highlighting significant gaps in disease-related knowledge. Furthermore, patients with lower educational backgrounds sometimes relied on medicine packaging marked with visual cues to identify their medications, which increased the risk of medication discrepancies.

> I don’t really know much about it; I don’t even know the names of the medications I’m taking. (P2)

Table 3 Themes and Subtopics

Themes	Subtopics
1. Theme One: Personal Characteristics	1.1 Lack of Knowledge About Diseases and Medications
	1.2 Age and Memory
2. Theme Two: Behavioral Characteristics	2.1 Insufficient Medication Self-Efficacy
	2.2 Lack of Firm Medication Belief
	2.3 Trust in Information from Other Channels
3. Theme Three: Interpersonal Networks	3.1 Lack of Family Support
	3.2 Support from Friends
	3.3 Lack of Communication and Trust with Doctors
4. Theme Four: Living and Working Conditions	4.1 Financial Circumstances
5. Theme Five: Policy Conditions	5.1 Challenges in Implementing Tiered Healthcare System
	5.2 Insufficient Professional Education Support
	5.3 National Volume-Based Procurement

I generally don't make an effort to find out about the potential side effects of my medications. As a patient, just an ordinary person, I don't think it's necessary to study them in depth. (P10)

Because I have been ill for a long time, I have developed my own opinions and approaches. When I have no symptoms, I take my medication as usual. When I experience symptoms, I reduce the dosage as a way of 'adjusting' my medication intake. (P8)

After returning home, I read the medication leaflet (pointing to Bisoprolol). This drug can treat both coronary heart disease and hypertension, so I think it serves two purposes. Because of that, I only take this medication. (P4)

In the past, I rarely took medication. When I caught a cold, I usually only took medicine for a short period; I hadn't seen a doctor for decades. I thought that after having the stent placed and blood flow restored, everything was fine and there was no need for further medication. (P5)

At home, I can only tell how to take the medicine by looking at the packaging. This one says once a day, so I take it with lunch. (Referring to pantoprazole sodium, which should be taken before breakfast) (P13)

Age and Memory

With advancing age and increasingly complex medication regimens, elderly patients are prone to forgetting to take their medication. In this study, six patients reported having missed doses. Additionally, a few participants mentioned that, due to old age and a perceived limited life expectancy, they had grown indifferent to treatment, leading to reduced medication adherence.

I'm over seventy now—perhaps I have ten years or so left (laughs). When I was younger, I was diligent with my medication, but now, at 77, I'm not as motivated. Taking medicine feels troublesome, and sometimes I simply forget. (P2)

At our age, it really doesn't matter that much anymore. (P5)

Sometimes I forget to take my pills. The doctor told me to take them three times a day, but I might only manage once or twice. (P6)

My memory isn't what it used to be, and when life gets a bit hectic, I tend to forget my medication. (P10)

I usually remember the once-daily pills, but those that need to be taken three times a day are sometimes missed. (P15)

Theme 2: Behavioral Characteristics

Insufficient Medication Self-Efficacy

Medication self-efficacy refers to a patient's confidence in adhering to a regular medication regimen under challenging circumstances (eg, busy schedules or complex multi-drug regimens) and uncertain conditions.[18] The treatment of coronary heart disease often requires a variety of medications, some of which must be taken at specific times, further complicating medication management. For retired elderly patients, maintaining their own routines after hospital discharge means that established daily activities or unexpected events can frequently disrupt their medication plans. Many patients prefer to adjust their medication schedule according to their personal circumstances. Half of the interviewees reported that they do not follow a fixed medication timetable Additionally, six participants indicated that when faced with urgent matters, outings, or personal commitments, they often neglect to take their medication on time, or altogether. Some expressed frustration with complex medication regimens and would simplify their treatment on their own, altering dosages or frequency without medical consultation.

After a couple of days, I felt annoyed and just started taking all my medications once a day instead, not at any fixed time. I don't really consider timing—just take them when I have time. (P3)

In the morning, I go out for exercise, and in the afternoon, I play piano or paint. In the evening, I go for walks, so there's hardly time to remember the pills. (P6)

Sometimes when I go out to eat with friends and don't bring my diabetes medication, I just skip it. (P15)

As someone with chronic illness, when the number of pills increases, I really dislike it. For example, I'm supposed to take Xinkeshu three times a day, but I just skip one dose. (P10)

I want to follow the doctor's advice, but I don't want to take so many pills, so I just take a little less. (P12)

Lack of Firm Medication Belief

Medication belief refers to patients' attitudes toward drug side effects, the necessity of long-term medication, and the motivations behind doctors' prescriptions.[19] Coronary heart disease requires lifelong pharmacological management, yet only four participants reported a clear understanding of this necessity. Given that the therapeutic effects of most coronary heart disease medications are not immediately perceptible, many patients demonstrated ambivalence: on one hand, they acknowledged the importance of adhering to medical advice and relying on medication to manage their condition, yet on the other hand, the absence of serious consequences after occasional missed doses led to selective adherence. Notably, for medications that produce tangible adverse effects, such as insomnia, patients are more likely to remember and consistently take them.

There's no choice—having this condition, you can't go without medication. (Sighs) Sometimes I adjust the frequency myself; if I feel fine, I let it be. (P3)

After taking the medication for a week, I felt fine, and it didn't seem to make much difference, so I stopped. (P5)

I never really thought about what would happen if I stopped the medicine. As long as I don't feel uncomfortable the next day, I just don't take it, regardless of what the doctor prescribed. (P6)

Sometimes I've already gotten into bed and remember I haven't taken my pills, so I get up to take them—otherwise I can't sleep. The same goes for my prostate medication: if I forget, I'll need to get up to use the toilet and lose sleep. (P2)

Concerns about side effects also affect adherence. Eight participants cited worries about adverse reactions, three of whom had experienced undesirable effects themselves. Many patients adhered to the belief that "Every medicine has its side effect" and supported minimizing medication use or even stopping certain drugs altogether. For a few, traditional health concepts influenced medication decisions more than medical advice, particularly regarding the use of traditional Chinese medicine.

Every medicine has its side effect. For example, I keep getting itchy, painful spots, so I reduced my intake of Plavix. It was supposed to be daily, but now I only take it once or twice a week. (P8)

It's not that medicine is useless, but it's not something good—so I avoid it if I can. (P11)

Western medicines have more side effects, while traditional Chinese medicines don't. For centuries, people in China have relied on Chinese medicine. It can cleanse the digestive system and help with the damp climate in Guangdong. I enjoy trying new things and am interested in using only Chinese medicine. (P12)

Additionally, some patients expressed doubts about the hospital's motives for prescribing medications or concerns about drug quality, which further contributed to selective adherence.

The hospital prescribed a dozen medications, but only four are actually effective—the rest are Chinese patent medicines, perhaps included for the hospital's profit. (P5)

It's hard to know the actual ingredients in today's pharmaceuticals, and there are differences in effects between Chinese and Western medicines. The government encourages use of domestic drugs by subsidizing hospitals, so some hospitals promote them for the financial incentives. (P10)

Trust in Information from Other Channels

During the post-discharge transition period, some patients were dissatisfied with the efficacy of their current medications and reported seeking treatment information or purchasing supplements and medications through alternative channels.

I use Doubao to get information and also search online myself. There's a health program on Beijing TV that I watch every day—they sell products, and I trust the experts who promote these medicines. (P8)

I pay attention to advertisements, for example, I currently take Tianma tablets from Beijing Tong Ren Tang. I also follow online recommendations for traditional Chinese medicines that improve sleep. (P11)

I saw on WeChat that Chinese medicine is good for people in Guangdong, so I decided to give it a try. (P12)

Theme 3: Interpersonal Networks

Lack of Family Support

Family support is a crucial motivator and safeguard for maintaining proper medication adherence after hospital discharge, and the involvement of family members can significantly influence patients' adherence to medical advice. In this interview, three participants stated that their family members actively reminded them to take their medication. In contrast, most respondents indicated that their family members generally lacked pharmaceutical knowledge or were not involved in supervising medication use. When asked whether they wished to receive more help, some patients felt they could manage their medication regimen independently (although their actual behavior did not always meet proper adherence standards) and considered taking medication their own responsibility, with no need for reminders from family. Only a minority expressed a desire for supervision and reminders from family members.

Look, my granddaughter wrote this for me (pointing to a note on a cup), indicating which medication to take and when. They also remind me to take health supplements—imported from Australia—supposedly good for my knees. (P6)

How would anyone at home know which medications I take? They don't understand it, and I haven't told them about my medication routine. They just know I go out to collect prescriptions. (P11)

The children are busy with work and don't pay much attention to us—they can't really manage us anymore (laughs). As long as we seem well, they don't ask questions. (P14)

I don't need supervision from family—if I need to take my medication, I will do it myself. I haven't told my children about my regimen, and they don't ask; they just know I have prescriptions after discharge. My children are all working. The last thing I want is to trouble them with these things because it would require a lot of effort and resources. (P16)

My family says I should take Western medicine for this condition, but I want to try only Chinese medicine. At home, I only take my pills when I remember; that's my mindset. I actually hope my family will supervise me, just as healthcare staff do by reminding me to take my medication after meals. (P12)

Support from Friends

Some interviewees reported discussing their medication experiences with friends after discharge. However, because most friends lacked professional medical knowledge, the advice given was often based on personal experience. Patients tended to selectively accept these suggestions, perceiving their own situation as unique and potentially not requiring strict adherence to prescribed regimens.

None of them really understand; friends might just think you aren't that sick, so it's okay not to take the medication. (P5)

Some friends say you shouldn't stop taking antihypertensive drugs. But I told them my blood pressure isn't high at the moment, so I don't need them—just need to watch my diet and get enough rest. (P12)

In contrast, another patient received relatively professional medication reminders from a friend working in healthcare.

One friend told me to take Betaloc in the morning, and Metformin at mealtimes. (P9)

Additionally, some participants chose not to disclose their condition to friends either because they felt "it's not something to be proud of", or believed "everyone's situation is different, so you can't generalize".

Lack of Communication and Trust with Doctors

According to current policy, patients are typically provided with only a one-week supply of medication upon discharge. This means that within a week after discharge, patients usually need to purchase additional medication. During follow-up visits, when physicians inquire about patients' medication use at home, it is a key step for medication review and identification of potential drug-related problems. Effective doctor–patient communication not only enables physicians to comprehensively understand the patient's condition and actual medication behaviors—allowing for appropriate adjustment of treatment plans—but also helps to improve patients' adherence to proper medication practices. A minority of patients who have consistently visited the same physician over time have established good relationships with their doctors. However, six interviewed patients reported that they typically do not proactively communicate their medication use to their physicians, and doctors often do not further investigate whether patients are taking their medication correctly. In addition, some patients exhibited a passive reliance on doctors, demonstrating poor adherence in daily life and only seeking medical help when symptoms arise. Notably, one participant stated a preference for following the advice of highly authoritative physicians.

> For many years, I have consistently seen a few particular doctors. When I meet with them, they also share their medication experiences with me. (P10)

> I told the doctor to prescribe only these two medications. Some doctors recommended drugs for improving blood circulation, but I refused, so they didn't prescribe them. (P4)

> The doctor is my friend; if I feel unwell, I contact my doctor. The doctor never says much about my medication regimen—doctors are too busy to monitor how you take your medication. They just prescribe it, and if you have symptoms or want something, they give you a prescription for that. (P6)

> I only take medication prescribed by doctors who are highly authoritative. If the doctor isn't authoritative, I won't take it. (P16)

Theme 4: Living and Working Conditions

Financial Circumstances

Financial status is one of the key factors influencing patients' medication adherence. A minority of patients expressed economic pressures due to medication costs. In contrast, most patients were satisfied with the current health insurance reimbursement policies, believing that these have effectively reduced the financial burden of medication.

> I'm an ordinary citizen; my pension isn't as high as that of former civil servants. My daughter has to work, and the pressure is considerable. (P1)

> I currently spend over a thousand yuan each month on my own medications. That monoclonal antibody costs over 300 CNY per vial, and metoprolol is over 400 CNY per box. (P16)

> Things are much better now; the national health insurance reimbursement rate is very high. (P12)

> It's quite inexpensive now. (P13)

Theme 5: Policy Conditions

Challenges in Implementing Tiered Healthcare System

China has implemented a hierarchical medical system, but insurance reimbursement is typically tied to designated institutions. Medication accessibility has become a critical factor affecting continuity of treatment for patients. When hospitals are far away and their medication supply is running low, most interviewees reported that they would opt to purchase medications from community health centers for convenience.

> If the township health center has the medicine, I would prefer to go there because it's nearby. Simply taking the subway here takes half an hour. (P2)

> It's inconvenient to get prescriptions at the hospital because I can enjoy insurance benefits and use my card back home. (P9)

One local respondent stated that they did not have such concerns:

> It's easy for me to get medication; I live close by and can walk or take the bus. (P10)

However, inadequate medication supplies and limited diagnostic capabilities in community health centers may result in medication interruptions for patients. In such situations, patients may adjust their medication regimen independently. Three interviewees mentioned that the standard of care in community clinics was inferior to that in hospitals.

> I no longer go to outpatient clinics at community hospitals. The doctor just prescribes a batch of medicine, but my condition doesn't improve, so I don't think it's necessary to go. Community clinics are mainly for prescriptions, not for diagnosing illnesses. (P8)

> I've mentioned to the doctor at the township health center that I have coronary heart disease, but it doesn't help. They can only prescribe medication, but they lack the proper expertise and sometimes don't even have the right drugs. After discharge, I haven't had any of these lipid-lowering drugs prescribed. (P5)

Insufficient Professional Education Support

Medication guidance and health education at discharge can help patients prepare for home-based treatment after leaving the hospital. However, interviews revealed that, both in the past and presently, patients have not received adequate medication guidance either in hospitals or community settings. As a result, some patients lack a proper understanding of the seriousness of coronary heart disease and do not recognize the necessity of long-term medication adherence.

> Nowadays, there is much greater awareness of this disease at the community level. We are organized for annual check-ups and participate in health lectures every year, but such services were not available in the past. (P5)

> Doctors do not explain what the medications are for or their potential side effects. They just prescribe the drugs and instruct you to take them at home. (P16)

National Volume-Based Procurement

China is trending toward the use of National Volume-Based Procurement (NVBP). Under this policy, either the original brand-name drug or generic drugs that have passed the quality and efficacy consistency evaluation are eligible to bid to become NVBP drugs.[20] However, this policy has raised concerns among patients. Many expressed worries about having to use domestic medications, which may affect their adherence to prescribed therapies.

> Previously, I was prescribed irbesartan at Zhongshan Hospital, but when it was out of stock, the community health center dispensed a domestic drug with the same name. After taking it for about a week, I did not feel well. (P4)

> Some doctors also believe that a specific imported drug was quite effective for the patient, but it is hard to say after switching to the domestic version. Initially, I trusted the medication, but that trust diminished when it was replaced with a generic drug. (P10)

> If imported drugs are available, I would definitely choose them. (P16)

Discussion

Individual-Level Influencing Factors

Pharmacological therapy for coronary heart disease plays an irreplaceable role in preventing major adverse cardiovascular events, improving long-term outcomes, and enhancing patient quality of life. However, patients face significant challenges in maintaining consistent medication adherence when transitioning from a supervised hospital environment to independent home care. Consistent with previous studies,[21,22] our interviews revealed that most elderly CHD patients still lack sufficient knowledge of disease and medication management. Some have not yet established the belief in the necessity of long-term, regular medication use, and are prone to medication discrepancies once outside the supervision and guidance of healthcare professionals.

Additionally, our interviews identified that a minority of elderly CHD patients exhibit low motivation for pharmacotherapy due to self-perception of aging. Self-perception of aging refers to older adults' subjective feelings and emotional responses when facing the challenges of aging, which can be categorized into positive and negative aging.[23] A more positive self-perception is associated with greater motivation to acquire health knowledge.

Thus, it is particularly important to provide adequate and continuous support during this critical and vulnerable phase of hospital-to-home transition.[24] To improve transitional care, healthcare providers can guide patients to address the aging process positively and foster a sense of responsibility for self-management during hospitalization. In addition to strengthening health education for elderly CHD patients, techniques such as teach-back can be employed during patients' initial exposure to medications to ensure comprehensive and accurate understanding of drug information.[25]

Behavioral-Level Influencing Factors

Medication beliefs serve as intrinsic regulatory mechanisms for patients undergoing long-term pharmacotherapy. This study found that some patients experience ambivalent attitudes toward medication: they recognize its benefits but are also excessively concerned about potential adverse effects. One possible reason is that patients tend to focus more on short-term benefits, while another is that they may view medication as an unavoidable obligation rather than as an effective means of disease control and symptom relief. Therefore, in addition to providing professional support, it is important to guide patients cognitively in adapting to their new role, encourage their participation in medication decision-making, and emphasize the long-term advantages of sustained medication adherence.

Cultural beliefs, such as the traditional Chinese saying "every medicine has its toxicity", deeply influence patients' attitudes toward medication in China. This study showed that, while most patients subscribe to this notion, their understanding of specific drug side effects remains limited. Regardless of whether they have experienced adverse drug reactions, some patients may independently adjust their medications as a result. Notably, to avoid side effects, certain interviewees reported a preference for using traditional Chinese medicine (TCM) for long-term treatment. This phenomenon is especially prominent in regions with strong TCM traditions, such as Guangdong province, where TCM resources are abundant and the industry is well established. Guangzhou, as a major hub for TCM in Guangdong, further reinforces local recognition and acceptance of such therapies. While these culturally rooted preferences are understandable,[26] they should be approached with caution, as they may indirectly undermine medication adherence. Some participants noted that they had adjusted their medications without consulting a pharmacist or physician, which is a risky practice. It is undeniable that TCM plays a significant therapeutic role in chronic disease rehabilitation; however, efforts to foster scientific medication knowledge among patients should also account for their cultural beliefs and preferences, in order to provide personalized treatment options.

Complex medication regimens pose additional barriers to adherence. Our research found that patients often feel overwhelmed by polypharmacy, prompting them to self-adjust dosages. Multiple medications generally require greater time and effort devoted to medication management, which significantly increases treatment burden. If taking medication interferes with activities that patients perceive as more important (such as social engagements or personal hobbies), it can further compromise adherence.[27] Therefore, where possible and within guideline recommendations, healthcare professionals should consider simplifying medication regimens to reduce patient burden and promote long-term adherence.

In the digital era, the internet has become an indispensable source of health information for patients. However, while elderly patients benefit from increased access to information, they are also vulnerable to misinformation and may add supplements or medications found online to their existing prescriptions without medical consultation. This behavior likely reflects difficulty in discerning the reliability of online information. Thus, to help elderly patients utilize online health resources safely and effectively, community organizations and healthcare institutions should provide guidance in information evaluation. Meanwhile, government and regulatory agencies should strengthen oversight and regulation of online pharmaceutical information, implement stricter controls on false advertising, and work to create a safer online health information environment.

Interpersonal Influencing Factors

Our study indicates that social support plays a crucial role in medication management among patients, consistent with previous research findings.[11] For elderly patients with coronary heart disease, the transition period from hospital to home is especially critical; communication breakdowns and lack of professional medication guidance during this stage may jeopardize patient safety. Caregivers are particularly vital during this period, especially for older, frail patients who require multiple medications. When caregivers are equipped with sufficient information and support, they can effectively assist patients in safe medication management. Therefore, it is important to include caregivers in discharge education prior to the patient's release, and to provide clear and detailed printed materials to both patients and their caregivers, enabling them to address potential medication challenges.

It is noteworthy that only a small proportion of participants in this study actively expressed a need for assistance from family or healthcare providers, reflecting a relatively low awareness of seeking support among patients. This phenomenon may be associated with intergenerational relationships in the Chinese cultural context, where patients are reluctant to burden their families and feel that they themselves are the most reliable source of support. Thus, when building support systems, it is important to encourage family and friends to provide more companionship and emotional support, organize peer support activities such as patient discussions, and foster patients' initiative in communicating and seeking help from others.

Medication reconciliation has been shown to effectively identify discrepancies and potential risks in drug therapy.[28,29] However, due to their low cost and ease of implementation, self-reporting remains the most widely used method of assessment in clinical practice. Our study found that, in interactions with doctors, patients generally passively receive professional information and seldom actively report their own medication issues, while physicians may also overestimate patients' adherence to prescribed regimens. These findings are consistent with other studies.[30,31] Thus, the "hidden" nature of actual medication behaviors may undermine the effectiveness of interventions designed to improve adherence. In the future, alongside strengthening professional support, efforts should be made to establish a bidirectional, trustworthy communication culture between patients and healthcare providers, encouraging patients to communicate openly and accurately about their medication practices. This approach can promote more effective collaboration and enhance medication safety.

Community and Policy-Level Influencing Factors

Community health service institutions currently serve as the cornerstone of China's primary healthcare system and have helped alleviate pressure on larger hospitals. However, some participants in this study reported a gap in the quality of care between community clinics and hospitals, which may result in patients not receiving timely or appropriate adjustments to their medication regimen, and even in some cases concealing their actual medication use. Moreover, the convenience of community services may lead some patients to overlook the importance of regular hospital follow-up, contributing to nonstandard medication practices. This finding is consistent with previous studies.[32,33] Since 2008, China has been committed to developing an integrated healthcare system centered on primary care institutions.[34] The Healthy China 2030 Action Plan also promotes improvements in family physician contracting services. Therefore, to enhance the management of patient healthcare and medication behaviors and ensure continuity of treatment, existing personnel at township health centers and village clinics should be engaged. Incentive mechanisms for primary care providers can be used to attract and retain talent, allowing primary healthcare to play a greater role in chronic disease management.

In recent years, China's healthcare reform and expanded health insurance coverage have significantly eased the financial burden on patients. Participants in our study expressed strong support for national health insurance policies. In response to insurance-related cost pressures, since 2018 China has implemented the National Volume-Based Procurement (NVBP) policy, which has reduced the prices of certain medicines and encouraged the clinical substitution of originator drugs with generics.[35,36] However, some participants raised concerns about the quality and efficacy of domestic pharmaceuticals, a view also reported in similar studies.[37,38] To address these concerns, it is recommended that pharmaceutical companies further shift from generic production to innovation, enhancing research and development

and raising quality standards for domestic medicines. This will help strengthen public trust in local healthcare institutions and domestically manufactured drugs.

Limitations

We conducted semi-structured interviews with 16 elderly patients who experienced medication deviations to explore the contributing factors. Nevertheless, several limitations of our study should be acknowledged. First, all participants were recruited from a single hospital within one province, and the sample size was small, which may limit the diversity of the sample and the generalizability of the findings. Future studies could include patients from more regions to enhance representativeness. Second, the information provided by participants was based on retrospective recall, which may be subject to recall bias and affect the accuracy of the data. Furthermore, the interview data were primarily derived from patient self-reports and did not include perspectives from family caregivers or healthcare professionals. Consequently, the analysis of certain themes may lack sufficient depth. Future research could involve multiple stakeholders to further enrich and refine the study content.

Conclusion

This study, grounded in the framework of health ecology, systematically investigates the factors influencing medication discrepancies during the hospital-to-home transition in elderly patients with coronary heart disease. At the individual level, strategies such as the teach-back method can be employed to ensure patients comprehend medication information, and patients should be encouraged to participate actively in medication-related decision-making. At the interpersonal level, establishing a trusting physician-patient relationship is essential, and family involvement in medication management should be promoted. At the community and policy levels, it is recommended to promote a shift from generic drug production to pharmaceutical innovation and to enhance the service capacities of primary healthcare institutions.

Ethical Review

Approval was obtained from the Ethics Review Committee of the First Affiliated Hospital of Guangzhou Medical University (Ethics No. ES-2025-K034-02) prior to the investigation. All participants provided written informed consent, including permission to publish anonymous responses and direct quotes.

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Author Contributions

Hui Hu and Wenjuan Xu should be considered co-first authors. All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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