



# Medication Sharing Among Older Adults in South Korea: A Qualitative Study

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**Purpose:** Medication sharing has been reported in many countries, with prevalence rates of 6–42% for lending and 5–54% for borrowing. This can cause serious harm, particularly in older adults. Therefore, this study aimed to investigate older adults' perceptions and experiences of medication sharing.

**Patients and Methods:** For this qualitative study, semi-structured interview study, data were collected in person from older adults aged 65–90 years, who were recruited using snowball sampling. The study was conducted between May and November 2020. Descriptive analysis was conducted to summarize participants' demographic characteristics. The interview responses were analyzed using content analysis with deductive and inductive methods.

**Results:** A total of 20 participants were included in the study. Among them, 18 participants (90%) reported medication-sharing experiences with prescription or over-the-counter medications, and 16 (80%) reported sharing medications with family or relatives. The shared medications ranged from oral tablets for chronic disease management to topical patches for acute pain. The participants primarily described the following reasons for medication sharing: lenders having unused (leftover) medications available, borrowers' financial difficulties, and lenders having drug coverage provided through their health insurance. Eleven participants (55%) identified leftover medications as one of the reasons for medication sharing, and five participants (25%) identified financial difficulties. The lenders reported that the medication-sharing behavior negatively affected their medication therapy adherence.

**Conclusion:** In this study's sample, most older adults (90%) reported engaging in medication sharing within close relationships, which was described as a socially situated practice with implications for medication management. Addressing this behavior may require privacy-assured, non-judgmental communication strategies that are culturally tailored. Future quantitative or mixed-methods studies are needed to better understand the behavior and inform the development of effective interventions.

**Keywords:** prescription medication, over-the-counter medication, older adults, medication sharing

## Introduction

Medication sharing refers to the lending or borrowing of medications from others, and the lending and borrowing prevalence rates are 6–67% and 5–56%, respectively.<sup>1,2</sup> Shared medications included pain, allergy, mood, acne, and other dermatologic medications, antibiotics, birth control pills, topical corticosteroids,<sup>1,3–7</sup> and medications for managing diabetes mellitus or cardiovascular diseases.<sup>1,8</sup> Some factors related to medication sharing—although reports are inconsistent across studies—include being female, being young, having non-Medicare insurance, having low income, having high household earnings, or living in a large household.<sup>1,7,9–12</sup> Predictive factors of medication sharing include accessing health information from the Internet,<sup>12</sup> storing leftover medications at home, having a history of substance use disorders, engaging in pain interference activities, and having asthma.<sup>13,14</sup>

Medication sharing connotes potential risks for both individuals and society. Individual borrowers may inaccurately self-diagnose their conditions and delay visits to healthcare professionals when they can obtain medications from others, thereby suffering the consequences of insufficient guidance regarding particular medications,<sup>9,13,15–17</sup> such as dosages, drug interactions, or adverse effects.<sup>6,9,13,15</sup>



Sharing certain medications can increase adverse outcomes among older adults. Moreover, unsupervised use of drugs targeting the central nervous system (CNS) can pose risks for older adults with polypharmacy, leading to cerebrovascular events, cognitive decline or impairment, delirium, and falls;<sup>18,19</sup> combining multiple CNS medications can result in catastrophic events, such as emergency room visits, hospitalization, and even death.<sup>20,21</sup> Sharing CNS medications could pose serious threats as these require closer supervision by healthcare professionals during diagnosis, pharmacotherapy initiation, dose titration, and discontinuation. From a societal perspective, while its impact on antimicrobial resistance has been well documented, other potential threats to public health and safety, such as healthcare costs or adverse health outcomes, require further research.<sup>13,15,22,23</sup>

South Korea operates a universal health coverage system that provides public health insurance to nearly all residents.<sup>24</sup> As of 2024, adults aged 65 years or older accounted for 18.9% of the population covered by National Health Insurance.<sup>25</sup> Beyond its health insurance system, South Korea is characterized by cultural traditions influenced by Confucian values, in which health-related decisions are often understood as shared responsibilities rather than individual matters.<sup>26–28</sup> Despite these institutional and cultural contexts, research examining medication sharing among South Koreans is sparse, with even fewer studies addressing this aspect among older adults. Thus, we conducted focused one-on-one interviews with South Korean individuals aged 65 years or older to examine perceptions of medication sharing and to identify the contextual factors and motivations associated with medication sharing.

## Materials and Methods

This qualitative study followed the coding process and theme generation introduced by Ravitch and Carl (2021)<sup>29</sup> and thematic analysis presented by Braun and Clarke (2006 and 2022).<sup>30,31</sup> Data was collected from one-on-one, face-to-face, semi-structured interviews with older adults in urban community settings in Seoul and Gwangju, South Korea between May and November 2020. The data analyzed in this study were collected independently and are entirely distinct from the dataset used in our prior survey on medication sharing.<sup>32</sup> All interviews were audio-recorded with participants' consents. The Consolidated criteria for reporting qualitative research (COREQ) were used as a guide for reporting this study's results. Researchers are trained and have qualitative research experience.

## Participants

Twenty older South Korean adults (8 men and 12 women) were recruited to participate in interviews. The first non-randomly selected participant was identified as a convenience sample; thereafter, subsequent participants were recruited through snowball sampling using their social networks. After snowball sampling was no longer possible due to lack of social connections, the interviewer employed a new convenience sample, either face-to-face or by telephone, and the process of snowball sampling was restarted. Initial contacts for convenience sampling were participants I4, I18, and I19. Recruitment was conducted in two waves. The first wave took place from May to July 2020; however, data saturation was not reached during this period. Following additional IRB approval to extend recruitment, a second wave was conducted from October to November 2020. Three participants (I4, I19, and I20) were the interviewer's acquaintances, and the rest had no established relationship prior to study commencement. The inclusion criteria comprised adults aged 65 years or older, non-healthcare professionals, individuals consuming one or more prescription medications, and those with no communication difficulties. All participants provided written informed consent before the interviews.

## Data Collection

A single researcher (SS) conducted all interviews. Using an interview guide based on the modified Andersen behavioral model of health<sup>33</sup> and existing literature on medication-sharing behavior,<sup>1,34–37</sup> development of the semi-structured interview questions was completed and refined through mock interviews with researchers and three registered pharmacists. To minimize potential bias and maintain objectivity, the same semi-structured interview guide was applied consistently across all interviews, using standardized open-ended questions. Audio recordings were revisited during analysis to ensure interpretations were grounded in participants' accounts. The interviewer is a researcher trained in qualitative methods with experience in adult interviewing and peer-reviewed publication.

Seventeen of the 20 interviews were conducted one-on-one in a private setting without the presence of other people. One interview took place in a shared office space where a previous participant remained in the corner, working independently until the session ended. Two interviews were conducted in public settings at the participants' request. To mitigate potential risks to privacy and confidentiality, interviews were conducted in quiet areas away from others as much as possible in accordance with COVID-19 social distancing measures, and conversations were paused when others passed nearby. The interview content focused on the participant's experiences and opinions regarding sharing prescription or non-prescription medications with various routes of administration.

The interviews were scheduled either on weekday evenings or on weekends at the interviewer's home, the participant's workplace, or a public place such as a cafe or an open space. On average, each interview lasted between 40 minutes and one hour. After the interviews, a survey sheet was used to collect the participant's demographic information, including gender, age, and educational attainment. During the interview, the interviewer made field notes. Repeat interviews were not conducted. One interview session was interrupted for a personal reason raised by the participant and then resumed afterward.

Figure 1 illustrates the structure and flow of the individual interviews. Prior to being interviewed, each participant completed a written consent form detailing the goals of the study and the interview process, including the approximate duration and audio-recording procedures. The Institutional Review Board of Seoul National University approved the study protocol (IRB No. 2004/003-024). This study was conducted in accordance with the World Medical Association's Declaration of Helsinki. Written informed consent included publication of anonymized responses and direct quotes.

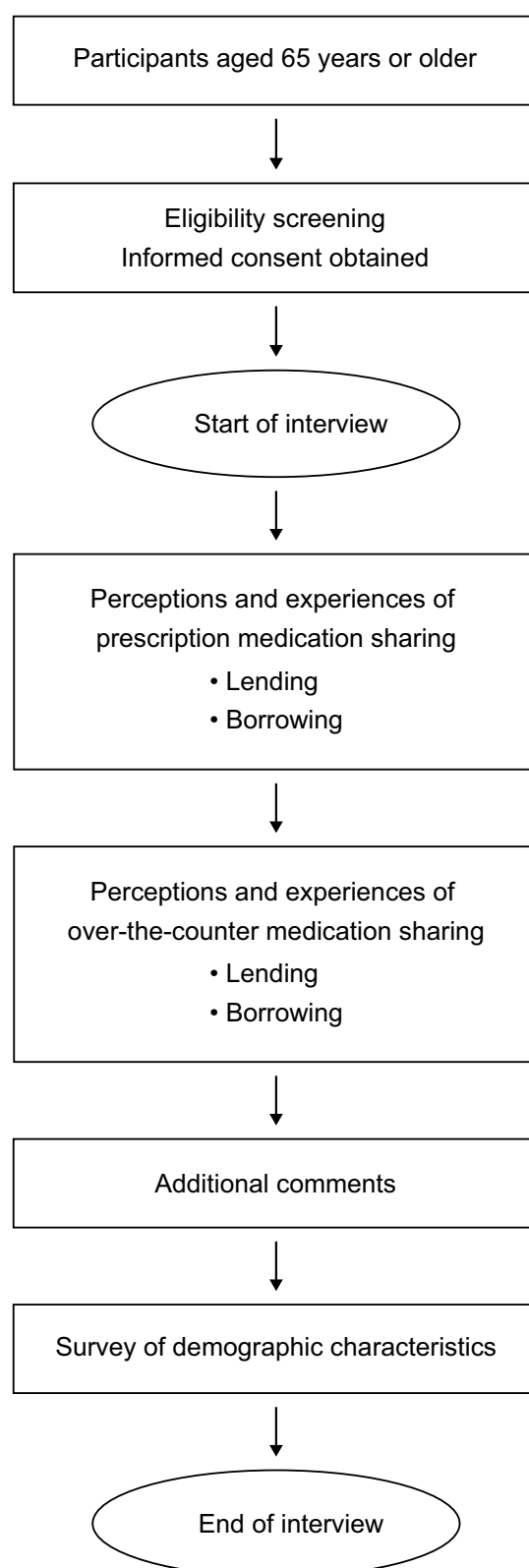
## Sample Size

According to some reports, a qualitative study requires 20–40 participants to achieve saturation.<sup>38</sup> Another study reported that 16–24 participants were required for saturation in qualitative studies examining factors with low frequency.<sup>39</sup> Data saturation guided the sample size. Saturation was assessed iteratively during data collection and analysis through periodic meetings with the research team. Recruitment continued until additional interviews yielded no new codes related to key themes, including types of medications shared and factors associated with medication-sharing behaviors. Data saturation was reached after 20 interviews.

## Data Analysis

Descriptive statistics were used to summarize the participants' demographics. Fisher's exact test was used to examine differences in medication sharing rates across sex and age groups. A professional stenographer prepared the interview transcripts verbatim, which were checked by one of the authors (SS) using the interview recordings. The transcripts were not returned to participants to solicit comments or corrections. Field notes were used as references when analyzing the interviews.

All transcripts were initially coded by one researcher (SS) and a combination of deductive and inductive coding from the data were used. Coding decisions and emerging themes were reviewed and finalized by two researchers (SS and EL) to enhance analytic rigor and credibility. Thematic analysis of the interview content was performed using deductive and inductive methods, and one author (SS) reviewed the field notes, interview transcripts, and interview recordings to extract codes. After relevant content associated with medication-sharing behaviors in the transcripts was retained, intensive coding was conducted to derive themes. Initially, the open coding method was employed, followed by axial coding. The overarching themes included the people with whom medications were shared, types of shared medications, factors influencing medication-sharing behavior, and reported consequences. Participants were not invited to provide feedback on the findings to preserve the original transcripts and to protect older adult participants by minimizing face-to-face contact, in accordance with COVID-19 social distancing measures and IRB guidance during the pandemic. Quotations from each participant were presented with their designated codes, age, and gender (eg, "I10, 90-year-old female") The software ATLAS.ti 23.0.1 for Mac (ATLAS.ti Scientific Software Development GmbH, Berlin, Germany) was used to facilitate the coding, grouping, and theme creation.



**Figure 1** Overview of the semi-structured interview process.

## Results

### Participant Demographics

During the study period, 22 individuals were approached. One individual refused to participate in the study because of difficulty in understanding the study procedure, and one individual withdrew from the interview because of privacy concerns. For the final analysis, we used saturated data from the individual interviews with 20 participants, including eight men and 12 women aged between 65 and 90 years (mean: 73.25, SD: 6.32; [Table 1](#)).

Four key themes emerged from these in-depth interviews: type of people with whom medications were shared; type of medications shared; factors associated with medication-sharing behavior, classified as predisposing factors, enabling resources, and need factors; and reported consequences of medication sharing. [Table 2](#) summarizes the four key themes and their corresponding illustrative quotations. Subsequently, the following sections include representative quotations embedded in the text.

**Table 1** Demographic Characteristics of Participants (n = 20)

| Characteristics               | N (%)    |
|-------------------------------|----------|
| Total                         | 20 (100) |
| Sex                           |          |
| Female                        | 12 (60)  |
| Age (years)                   |          |
| 65–69                         | 5 (25)   |
| 70–75                         | 11 (55)  |
| 76 and over                   | 4 (20)   |
| Living status                 |          |
| Alone                         | 4(20)    |
| With spouse                   | 6 (30)   |
| With family                   | 10 (50)  |
| Level of education            |          |
| Elementary school or below    | 10 (50)  |
| Middle school                 | 5 (25)   |
| High school                   | 5 (25)   |
| College or above              | 0 (0)    |
| Health insurance type         |          |
| National Health Insurance     | 14 (70)  |
| Medical Aid                   |          |
| - Basic Livelihood Protection | 2 (10)   |
| - Men of National Merit       | 4 (20)   |

## People with Whom Medications Were Shared

Among the 20 participants, 16 (80%) shared medication with family and relatives, 10 (50%) with friends, three (15%) with other acquaintances, and two (10%) with coworkers (Table 2, quotes 1–2). Two participants (10%) reported sharing non-prescription medications with strangers (Table 2, quote 3).

**Table 2** Key Themes Anchored from the Focus Interview and Illustrative Quotes on Medication Sharing

| Thematic Category                        | Quote no. | Illustrative Quotes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| People with whom medications were shared | 1.        | I once gave my blood pressure medication to a friend when my friends were gathered and asked for it... Whenever I go to the countryside, I get something like a rash and feel itchy... My mom would say, "... Try this [topical dermatological agents]," and give it to me. (106, 72-year-old female)                                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                          | 2.        | I have given it [steroid ointment] to friends and family [his wife and his son] ... I have given it [steroid ointment] to my comrades with whom I served in the ...war... I tried acupuncture and went to many places for treatment because of pain in my arm, and my wife gave me a few packets of medication that she takes for neuralgia. (114, 77-year-old male)                                                                                                                                                                                                                                                                                                                                                   |
|                                          | 3.        | I went to ... some mountain...When we were sitting there like this...they [the strangers] came to us... They said someone in their party... had a headache. He asked, "Do you happen to have any headache medication? Does anyone have it?" So, since I always carry it [analgesics] with me... I gave it once. (101, 71-year-old female)                                                                                                                                                                                                                                                                                                                                                                              |
| Types of shared medications              | 4.        | Once, I said my arms and shoulders hurt... My daughter gave me some leftovers to try, saying that her shoulders hurt and she had a lot of that medication. So, I tried it... (111, 84-year-old female)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                          | 5.        | I have received it several times. Eye drops. It's liquid inside, and if you open it like this, you put it one drop at a time. It's for one-time use... If my eyes get itchy, I put in one drop at a time. I got an eye ointment today. It's like a cream. (117, 74-year-old male)                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                          | 6.        | When they [119's family] caught a cold... or had a runny nose, I have checked the medication I got [from the hospital] and made them take it. Also, ointments are commonly used together. When someone gets hurt. ... It's like iodine tincture... I tell her [119's wife] to try something like antipyretic medication... Disinfectants, we use them together. We also use liquid topical analgesics together... I had terrible tooth pain... because I have periodontitis... I got it from the dentist. Painkillers... I gave them to her [119's wife] when she had pain [toothache]. (119, 68-year-old male)                                                                                                        |
|                                          | 7.        | A young woman had really severe menstrual pain. Then I told her, "I have some medication [over-the-counter analgesics], so try it" ... I went somewhere and said my legs hurt so much, and this woman gave me this [analgesics]. It's an American medication... It's like a painkiller... When someone next to me was coughing a lot, I gave them this [over-the-counter cold medication] ... I share pain patches [analgesic patches] a lot, with people around me... At a ... hospital, there's this whitening cream you squeeze out of a tube. When I saw people, I knew who had a lot of pigmentation, like moles and things like that, I gave it to them and told them to try using it. (104, 71-year-old female) |
| Factors influencing medication-sharing   |           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| - Predisposing factors                   | 8.        | How could you just give out medication like that? What would you do if they took it and had a problem... side effects... (103, 72-year-old female)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                          | 9.        | My husband once told me to take some cold medication at home when I had a runny nose. But I did not take it, saying, "... Why would I take your medication? Medications are different for men and women." (111, 84-year-old female)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                          | 10.       | I share the ones I feel confident in after trying them myself... If someone says their skin is itchy, I give it to them if I have some left. I have also given someone medication for athlete's foot. I sometimes do share with others... I do not give out medications that are taken orally... I cannot give people the medications I take orally so carelessly, so I do not give them out. But in the case of topical medication, I go, "There are no side effects when I use it..." (114, 77-year-old male)                                                                                                                                                                                                        |
|                                          | 11.       | One's cold medication is made for that person, isn't it? I think medications are prescribed according to a person's body constitution, and someone else should not take what is prescribed to me... I have not given them to others because I was afraid they would take them and say they had allergic reactions or that something went wrong. I once gave my blood pressure medication to a friend when my friends were gathered and asked for it... I gave the blood pressure medication knowing that it could be shared. (106, 72-year-old female)                                                                                                                                                                 |
|                                          | 12.       | I gave a lot. I, honestly, not to pat myself on the back; I am a person who considers empathy and loyalty to be everything in life. ... In short, it is all about loyalty. I like giving; that's me. (102, 71-year-old female)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

(Continued)

Table 2 (Continued).

| Thematic Category                           | Quote no. | Illustrative Quotes                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| - Enabling resources                        | 13.       | She [I05's co-worker] knew that I was in a difficult situation, so she gave me a lot of her arthritis medication... Someone told her that I was facing financial difficulties paying my ex-husband's hospital bills. ... She gave me some leftover medications that she felt were effective after she took them herself. (I05, 65-year-old female)                                                                                 |
|                                             | 14.       | He [I05's husband] got medications from the public health center... Basic thingy... Blood pressure medication is prescribed for those aged over 65 years [for free] ... So, I told him to go ahead and get it, but he would not go again because it was embarrassing... That is why she [I05's friend] gave me a lot of medications her husband was taking. (I05, 65-year-old female)                                              |
|                                             | 15.       | One of my friends said his blood pressure was high. [I said] "Take my medication." I gave mine to him... I am a man of national merit, and the medication is free, and the health service, altogether, is free. (I16, 73-year-old male)                                                                                                                                                                                            |
|                                             | 16.       | I have been taking this medication for about 20 years. One of my friends told me that his urination problem did not get better. So, I told him to try mine. Well, I refilled the medications some months ahead. Yes, usually for three months. So, I always have spare medications... I have given him 5–6 packets of medications, a five-day supply. (I15, 74-year-old male)                                                      |
| - Need factors                              | 17.       | My co-worker told me that she had severe leg pain. So, I said, hey, shall I give you one of my medications? And she took it from me. .... I have given my medications like that a few more times. (I09, 70-year-old female)                                                                                                                                                                                                        |
|                                             | 18.       | My husband was doing weightlifting, and one guy asked my husband, "Hey Mr., you have blood sugar, high blood sugar, right?" Then my husband said, "What do you mean?" The guy replied, "Why can't you stand being hungry? Why do you drink so much water?"... So, apparently, the guys who were working out together gave my husband medications for high blood pressure and diabetes. And he took them. (I05, 65-year-old female) |
| Reported consequences of medication sharing | 19.       | It did not work. No, I had to go to the hospital because it did not work. (I01, 71-year-old female)                                                                                                                                                                                                                                                                                                                                |
|                                             | 20.       | I gave it [topical preparation] to her, and she applied too much. I saw her smearing it. (I09, 70-year-old female)                                                                                                                                                                                                                                                                                                                 |
|                                             | 21.       | I took a smaller amount so as to give some to him. ... I guess I did not take it for 20 days a month. I gave him a month's supply of the medication. (I16, a 73-year-old male)                                                                                                                                                                                                                                                     |
|                                             | 22.       | Once you take a medication, you must keep taking it. Especially blood pressure medication... I did not know these things, and I told him [I05's husband] to just take the medication because she gave it... I did not know he could get into trouble if he stopped taking the medication. (I05, 65-year-old)                                                                                                                       |

## Types of Shared Medications

In this sample, eighteen participants (90%) reported sharing either prescription or over-the-counter medications. The prescription medication sharing rate was 70% (14 of 20 participants) overall; 60% (12 of 20) reported medication lending and 50% (10 of 20 participants) borrowing. The rate of sharing over-the-counter medications was 60% (12 of 20 participants); 45% (9 of 20 participants) reported lending and 14% (7 of 20 participants) borrowing. The types of prescription medications shared included topical dermatological agents, prescription-strength cold medications, arthritis/joint inflammation medications, antacid gels, ophthalmic medications, allergy medications, antihypertensives, anti-inflammatory and pain medications for dental care, antibiotics, diabetes medications, gastrointestinal medications, nasal sprays, topical pain medications, and topical whitening cream (Table 2, quotes 4–7). Non-prescription medications included over-the-counter cold medications, topical analgesic patches or ointments, topical ointments for minor skin cuts, analgesics, disinfectant liquid preparations, and medications for indigestion (Table 2, quotes 6–7). In this study, shared products included not only medications, which should be used for the relief, treatment, or prevention of disease and are approved by the domestic regulatory agency, but also herbal and nutritional supplements.

## Factors Influencing Medication-Sharing

### Predisposing Factors

Within the sample, the medication sharing rate was higher among women than men; however, the difference was not statistically significant (75% vs. 63%;  $p = 0.642$ ). Prescription and over-the-counter medication sharing rates did not



differ between participants in their 60s and those aged 70 and older (prescription: 60% vs. 60% for lending, 40% vs. 53% for borrowing; over-the-counter: 40% vs. 47% for lending, 40% vs. 35% for borrowing; all  $p = 1.000$ ).

Overall, 70% of the participants believed that medications should not be shared because of concerns regarding their side effects (Table 2, quote 8). Several participants (I04, I17, and I19) opposed medication sharing, particularly prescription medications. Additionally, two participants (I11 and I19) believed they could not take their spouses' medications because medications for women and men differed (Table 2, quote 9). Some participants (I03, I07, I09, I11, and I18) did not take or trust other people's medications because they felt uncomfortable, and one participant (I12) did not wish to share her medications.

The participants had their own standards for determining which medications to share. Some believed that topical medications could be shared because they have fewer side effects; however, sharing oral medications would require careful consideration (Table 2, quote 10).

Clinical conditions also influenced medication-sharing behavior. Some participants believed that medications for managing chronic diseases, such as high blood pressure or diabetes, could be shared (Table 2, quote 11). Others believed that medications used for acute symptoms, such as pain or gastrointestinal discomfort, could be shared.

Beyond clinical considerations, some participants (I01, I02, I05, I06, I14, and I16) believed medication sharing was good and altruistic (Table 2, quote 12).

I gave a lot. I, honestly, not to pat myself on the back; I am a person who considers empathy and loyalty to be everything in life. ... In short, it is all about loyalty. I like giving; that's me. (I02, 71-year-old female)

### Enabling Resources

Some participants (25%) reported that the borrower's difficult financial situation influenced their medication-sharing behaviors (Table 2, quote 13). Beyond financial considerations, embarrassment also played a key role in borrowing decisions, particularly in choosing from whom to seek medications. One participant reported that her husband felt embarrassed about visiting public health centers to obtain free medications, so she obtained them from acquaintances instead (Table 2, quote 14).

She [I05's co-worker] knew that I was in a difficult situation, so she gave me a lot of her arthritis medication... He [I05's husband] got medications from the public health center... Basic thingy... Blood pressure medication is prescribed for those aged over 65 years [for free] ... So, I told him to go ahead and get it, but he would not go again because it was embarrassing... That is why she [I05's friend] gave me a lot of medications her husband was taking. (I05, 65-year-old female)

The medication lender's health insurance coverage status also influenced medication-sharing behavior. Typically, beneficiaries of Medical Aid, such as war veterans or individuals who are physically challenged, receive their prescription medications without incurring out-of-pocket costs. Three participants with Medical Aid health insurance mentioned sharing medications with others, including family members, relatives, and friends (Table 2, quote 15). Some participants reported receiving medications from their spouses, who were beneficiaries of Medical Aid. One participant mentioned taking her husband's medications, as he received them for free from the Veteran's hospital. Additionally, she revealed that she used to ask her acquaintance, also a war veteran and Medical Aid beneficiary, to obtain various types of medications multiple times and that she had often shared them with other acquaintances. Another participant stated that one of his acquaintances with Medical Aid expressed his willingness to share his medications with him.

One of my friends said his blood pressure was high. [I said] "Take my medication." I gave mine to him... I am a man of national merit, and the medication is free, and the health service, altogether, is free. (I16, 73-year-old male)

Eleven participants reported that the availability of leftover medications facilitated sharing. When the participants were prescribed medications for several months, they could stock up on some of them and share the remainder (Table 2, quote 16).

I have been taking this medication for about 20 years. One of my friends told me that his urination problem did not get better. So, I told him to try mine. Well, I refilled the medications some months ahead. Yes, usually for three months. So, I always have spare medications... I have given him 5–6 packets of medications, a five-day supply. (I15, 74-year-old male)

One participant mentioned borrowing and stockpiling medications for future use. Healthcare access barriers also influenced medication-sharing behavior. Medications were shared as a temporary measure, especially late at night or



when the participant could not visit the hospital. Additionally, a participant lent her blood pressure medication to a friend who forgot hers during a stay.

### Need Factors

Health conditions, such as pain or physical discomfort, expressed by the borrower can cause medication sharing (Table 2, quote 17). In some cases, participants received medication and passed it on to others.

My co-worker told me that she had severe leg pain. So, I said, hey, shall I give you one of my medications? And she took it from me. .... I have given my medications like that a few more times. (I09, 70-year-old female)

The self-evaluation of similar symptoms was associated with medication sharing. Lenders often offered medication to people whose symptoms resembled their own (Table 2, quote 18).

My husband was doing weightlifting, and one guy asked my husband, “Hey Mr., you have blood sugar, high blood sugar, right?” Then my husband said, “What do you mean?” The guy replied, “Why can’t you stand being hungry? Why do you drink so much water?” ... So, apparently, the guys who were working out together gave my husband medications for high blood pressure and diabetes. And he took them. (I05, 65-year-old female)

### Reported Consequences of Medication Sharing

Some participants reported feeling good whenever they shared their medications.

After using the borrowed medication, several participants mentioned improvements in primary complaints, such as pain or itching. One participant reported that he gave medication to a friend, who found it to be effective and later sought medical care. However, some participants experienced repetitive medication-sharing behavior after administering or receiving the medication. Other participants did not use shared medications and hoarded them at home.

In some cases, appropriate treatment by healthcare professionals was delayed owing to medication-sharing behavior (Table 2, quote 19). No instructions on medication use were provided and the borrower used it as she deemed appropriate (Table 2, quote 20).

It did not work. No, I had to go to the hospital because it did not work. (I01, 71-year-old female)

I gave it [topical preparation] to her, and she applied too much. I saw her smearing it. (I09, 70-year-old female)

As medications were shared, both the lender and borrower could, perhaps, develop inadequate medication adherence. Consequently, the borrower would only take medications when offered, causing a shortage of medications for the lender (Table 2, quote 21).

I took a smaller amount so as to give some to him. ... I guess I did not take it for 20 days a month. I gave him a month’s supply of the medication. (I16, a 73-year-old male)

Such sharing behavior among both lenders and borrowers could result in adverse health outcomes several years later. According to one participant, her husband used to take medication borrowed from his acquaintances, and he did not visit clinics. He later had a fall one day and spent years in the hospital (Table 2, quote 22).

Once you take a medication, you must keep taking it. Especially blood pressure medication... I did not know these things, and I told him [I05’s husband] to just take the medication because she gave it... I did not know he could get into trouble if he stopped taking the medication. (I05, 65-year-old)

### Participants Who Have Never Lent or Borrowed Prescription Medications

Among the participants, 40% (8 of 20 participants) had never lent prescription medication, and 50% (10 of 20 participants) had never borrowed prescription medication. They believed that prescription medication should be used only by the prescribed individual and perceived prescription medication sharing as risky. Participants (I08 and I13) who strongly opposed medication-sharing practices disposed of unused or leftover medications by throwing them away or returning them to the pharmacy. However, they were open to sharing non-prescription medications, especially those frequently appearing in TV commercials. Furthermore, although they had never shared prescription medications, they reported sharing herbal or nutritional supplements.

## Discussion

This multifaceted study investigated the complex behavioral aspects of medication-sharing using a qualitative approach. The global population is aging;<sup>40,41</sup> therefore, exploring the medication-sharing behavior of older adults is imperative, as well as examining their health burdens associated with multimorbidity and polypharmacy.<sup>42–45</sup> This study's findings on medication-sharing behavior among older adults indicate the types of shared medications and circumstances or factors underlying their medication-sharing decision to formulate systematic strategies from the perspectives of consumers, healthcare providers, and policy-makers, to prevent the potential harm and subsequent healthcare costs associated with the sharing behavior.

In this qualitative study sample, over 60% of participants reported prescription medication and over-the-counter medication sharing (70% for prescription medication and 60% for over-the-counter medication). Two systematic reviews reported a 13–78% global prevalence of prescription medication sharing.<sup>1,2</sup> South Korean literature reported prevalences of 9.7–52.4% and 32.2–69.1% for prescription and over-the-counter medications, respectively.<sup>23,46–52</sup> Consistent with other studies,<sup>1,32</sup> analgesics were frequently cited as shared medications. Antibiotics, the second most shared medication, were uncommon among the participants of this study. The proportions observed among participants of this study were illustrative of medication-sharing experiences. Further quantitative studies with larger population are needed for representative estimates.

In addition, this study shows that financial difficulties were among the reasons for medication sharing, aligning with findings from previous literature,<sup>53,54</sup> which reported relatively high out-of-pocket expenditures for prescription medication and limited income sources as affordability challenges among older adults. Barriers to accessing healthcare systems in South Korea may be considered lower than those in other countries, as 97.1% of the population were beneficiaries of the National Health Insurance Service (NHIS) in 2022, covering medical and prescription medications, while the remaining 2.9% were covered through the Medical Aid Program.<sup>55</sup> However, out-of-pocket expenditures could still deter acquiring adequate care and appropriate medications. Nationwide, public health centers are approximately 3,581,<sup>56</sup> with few charitable clinics<sup>57,58</sup> that may not be equipped to provide appropriate healthcare for indigent or low-income individuals.<sup>59</sup> Thus, older South Korean adults may become dependent on other people's medications when they cannot afford their own.

Additional findings showed that Medical Aid beneficiaries were entitled to almost 100% coverage of their medication costs and reported frequent sharing of their medications with others, sharing medications indiscriminately with not only family members but also distant associates. Although attributable to altruistic intentions, this sharing behavior presents a moral hazard<sup>59,60</sup> and could result in excessive treatment, medication overuse, and low medication adherence. Indiscriminate medication sharing can harm not only personal health, by depriving healthcare professionals of opportunities for making accurate diagnoses and providing timely treatment decisions, but also society, by increasing healthcare expenditures and causing system inefficiency. Therefore, healthcare professionals should scrutinize, carefully supervise, and systematically approach patients' proper utilization of medications. Investigating medication use behavior during the medication review process or questioning medication-sharing behavior among patients who show lower medication adherence can be adopted in follow-up guidelines.

Leftover medications were also a recurring theme in medication sharing. According to a 2018 South Korean government report, the estimated cost of unused prescription medications in the country was 164,130,695 USD.<sup>61</sup> Thus, the implementation of efficient and feasible drug-disposal policies, including the collection and disposal of leftover medications is recommended in collaboration with private clinics, pharmacies, local governments, and professional organizations to prevent the potentially harmful consequences of medication sharing in the future. Furthermore, people also shared herbal and nutritional supplements. Public campaigns associated with multipronged efforts may be necessary to educate the public about the risks of sharing behavior, including adverse outcomes and drug-drug interactions or herbal medicine–drug/supplement interactions.

Medication sharing, although initially driven by altruistic reasons, can cause clinical complications and treatment fallout. The lender's medication adherence tends to lessen when medication is shared. To stock up on medications for sharing, individuals may consume less of the prescribed medical therapy, resulting in treatment failure at the individual patient level and influencing the healthcare system at the global level. Drug-resistant pathogens develop mainly after misuse and overuse of antimicrobials.<sup>62</sup> Inappropriate diabetes and hypertension management associated with missed

opportunities for timely diagnosis or poor medication adherence contributes to microvascular and macrovascular implications, cardiovascular disease-related morbidity and mortality, hospitalization, and healthcare costs.<sup>63–66</sup>

The borrower may face adverse consequences, ranging from an adverse drug event<sup>2,67</sup> to severe health consequences requiring emergency room (ER) visits or even death.<sup>1,17</sup> Excessive or inappropriate use of topical steroids, especially super-potent products, can cause systemic effects such as adrenal suppression and adverse skin consequences such as skin atrophy, striae, and telangiectasia.<sup>68</sup> Additionally, concurrent use of opioids, benzodiazepines, and muscle relaxants can lead to hospitalization.<sup>69</sup> Inappropriate use of diabetes medication, especially among older adults with difficulties in cognitive function, renal function, and limited daily activities, can induce hypoglycemia or even hypoglycemic coma.<sup>70</sup> Clinical ramifications stem from the lack of closer supervision by appropriate healthcare professionals and real-time alerts generated by the South Korean Drug Utilization Review (DUR) system.<sup>71</sup> It is crucial to check and guide patients inquiring about prescription drugs use or requesting early refills. Emphasizing the importance of timely diagnosis for potential borrowers is imperative. Strict safety measures and a systematic approach are critical to protecting the health and safety of those engaged in indiscriminate medication sharing, as many medications require careful and close supervision by healthcare professionals. Further, healthcare professionals should examine medication-sharing behavior as a reason for low medication adherence or treatment progress.

This study has certain limitations. First, the participants were not representative of the older South Korean adult population, limiting the generalizability of the study findings. However, this research holds value, as no qualitative study exploring medication sharing has a similar sample size of older adult participants as this study. Second, returning of the transcripts was not planned in this study, partly due to COVID-19 social distancing measures and IRB guidance emphasizing the need to protect the health of older adult participants by minimizing face-to-face contact, as they were considered a vulnerable population. This limited opportunities for participant confirmation and clarification of interpretations. To enhance the credibility of the findings, accuracy was supported through repeated review of field notes, transcripts, and audio recordings, clarification of meanings during interviews, and analytic discussions among the research team. Third, although confidentiality was ensured and the absence of right or wrong answers was emphasized, participants may have selectively disclosed experiences to present themselves in a more favorable light. To minimize such potential social-desirability and interviewer bias, particularly for participants known to the interviewer, a semi-structured interview guide with standardized open-ended questions was used consistently. During the interview, participants' comfort levels were repeatedly monitored, and confidentiality was reaffirmed. In this study, 70% of participants (14 out of 20) reported sharing prescription medications, a rate consistent with previous literature, suggesting that undisclosed experiences were minimal. Furthermore, the mean interview duration was 56.6 minutes (SD: 9.57), and the duration for interviews with the researcher's acquaintances was comparable to that of other participants, indicating that the interview protocol was applied consistently across all participants. Finally, participants were asked about the types of medications they shared during the interview, without being provided with a list and relying solely on their memory and knowledge of medications. While this approach captured any medications recalled by the participants, other medications, including those with risks of dependence, may have been omitted.<sup>72,73</sup> This study may underestimate the sharing of medications with a risk of dependence. However, the medications cited in this study were consistent with the existing literature, including a previous survey of prescription medication sharing among South Korean adults that reported analgesics, antipyretics, antimigraine, and gastrointestinal medications as the most shared.<sup>32</sup>

Although direct comparisons with a previous quantitative survey are limited,<sup>32</sup> the present qualitative study identified a higher proportion of medication-sharing experiences, likely reflecting methodological features that promoted trust and open disclosure. These findings highlight the importance of clinicians and pharmacists actively fostering a safe, confidential, and non-judgmental environment to elicit honest communication about medication sharing. South Korea is a Confucian, family-centered society characterized by strong interdependence and caregiving responsibilities among family members and close social networks.<sup>26,27,74,75</sup> Concerns about saving face and avoiding shame may discourage disclosure of non-standard health behaviors, such as medication sharing.<sup>26</sup> Based on these cultural characteristics, counseling approaches may be more effective when clinicians and pharmacists maintain a non-judgmental tone and use open-ended questions within a privacy-assured setting. Outreach through community-based settings, such as senior or community centers, may be an effective approach to building collective trust.

## Conclusion

In this sample, 90% of older South Korean adults reported sharing medications, either prescription or over-the-counter, during their lifetime, often embedded within close relationships. Medication sharing emerged as a socially situated practice with implications for medication use and management among those involved. Addressing medication sharing may require privacy-assured, trust-based, and non-judgmental communication strategies that are responsive to diverse social and cultural contexts. Future research using larger quantitative samples or mixed-methods designs is needed to better understand medication sharing among older adults and elucidate effective interventions.

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## Disclosure

The authors report no conflicts of interest in this work.

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