Would Robot Caregivers Be Welcomed by Older Individuals?*

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July 30, 2026

Abstract

Recent advances in artificial intelligence have positioned caregiving robots and information and communication technology (ICT) as potential solutions to the long-term care (LTC) shortages facing many aging societies. In Japan, diverse care robots and ICT systems are already widely deployed across nursing home settings. Yet little is known about older adults' perceptions of these technologies—a critical determinant of whether they can serve as viable and acceptable responses to LTC shortfalls. This paper presents the first large-scale evidence on this question, drawing on a custom-designed internet survey of Japanese individuals aged 55 to 75. The survey elicits respondents' willingness to pay to enter a nursing home in which care is provided exclusively by human caregivers compared to one in which robots and ICT perform a substantial share of care tasks. The specific tasks assigned to robots—monitoring, communication, and mobility assistance—are randomly varied across respondents, enabling identification of the domains in which robotic care garners greater acceptance. We find that older adults in Japan exhibit a strong preference for facilities that incorporate robots and ICT. Two-thirds of respondents select such facilities. On average, the respondents are willing to pay approximately 20 percent above the typical nursing home fee for access to them. Acceptance varies markedly by function: Technologies that assist with mobility are most preferred, while communication-oriented technologies are least favored.

Keywords: Long-term Care, caregiving robots and ICT, survey.

*This work was supported by the Egashira Fund; the Kurata Grant; the Policy Research Center Grant from the National Graduate Institute for Policy Studies (GRIPS); the Alumni Association Academic and Educational Grant and Research Design Grant from Seikei University; and JSPS KAKENHI Grant Number 24K00259. The authors are grateful to Yuichi Kobaru from the Oita Prefecture Social Welfare Council for his helpful comments on our survey questionnaire. We appreciate seminar and conference participants at Puli Christian Hospital, National Chi Nan University, the 2026 Annual Meeting of the Society of Economics of Households, National Graduate Institute for Policy Studies (GRIPS), and Korea Development Institute Workshop on Technology Adoption in Elderly Care: Economic Perspective and Evidence. Declarations of interest: none.

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JEL Codes: I10, J14

1 Introduction

Individuals who struggle with basic activities of daily living, such as eating, bathing, and walking across a room, require long-term care (LTC). In countries with rapidly aging populations, demand for LTC is growing sharply, yet supply is not keeping pace. The result is a widening gap between need and provision, manifesting in long waiting times for nursing home placement.[1] A key structural constraint on the supply side is the shortage of caregivers, a problem projected to intensify across all aging economies (e.g., Scales, 2021).

Concurrently, rapid advances in artificial intelligence have made caregiving robots and information and communication technology (ICT) an increasingly credible response to this challenge (see World Health Organization, 2022 for recent developments in assistive technology). Japan offers the most instructive case: Decades ahead of most countries in confronting care shortages, owing to its early demographic aging and restrictive immigration policies, it has already integrated caregiving robots and ICT widely into nursing home settings (Lee et al., 2024). These technologies span a range of functions, including systems that monitor residents' movements and vital signs, mobility aids that assist residents in walking or transferring between a bed and a wheelchair, and communication robots designed to hold conversations with residents. Government subsidies for nursing home purchases of robots and ICT (Eggleston et al., 2021) have further accelerated their adoption and integration into daily care routines. Japan remains, to date, the only country where caregiving robots and ICT have achieved widespread deployment in nursing home settings.

While caregiving robots and ICT hold considerable promise for expanding LTC provision, their viability as a solution to the caregiving shortage ultimately hinges on whether older adults find such care acceptable. Given the relative novelty of caregiving robots and ICT, the academic literature on them remains sparse. Arronson (2020) documents positive

[1] For example, the median waiting time for a nursing home bed for someone currently living in a private home in the province of Ontario, Canada, topped 200 days, and some people wait two years or more, as of 2023 (Health Quality Ontario, 2023). In Japan, more than half wait for at least one year, while about 30 percent wait for at least three years (Nihon Sogo Kenkyujo, 2019).

reactions among nursing home residents in case study settings, while Wright (2023) raises countervailing concerns that over-reliance on robots may deprive individuals of meaningful human connection, while simultaneously deskilling and devaluing care work. What is notably absent, however, is large-scale empirical evidence on how older adults perceive the prospect of receiving care from robots and ICT rather than human caregivers. Pino et al. (2015) represent a rare attempt to address this gap through interviews and a survey, but their study enrolled only around 30 participants.

This paper provides novel evidence on older adults' preferences regarding caregiving robots and ICT, drawing on a custom-designed large-scale survey conducted in Japan. Despite nearly a decade of robotic deployment in Japanese nursing homes, no systematic effort has been made to elicit whether individuals prefer human or robotic caregivers, or how such preferences vary across care domains, including mobility assistance, communication, and monitoring. The existing literature relies predominantly on case studies and qualitative observation (e.g., Arronson, 2020; Wright, 2023; Otaka et al., 2024), or is narrowly focused on a specific type of robot (Obayashi et al., 2021).

We implement a custom-designed internet survey of approximately 3,000 Japanese individuals aged 55 to 75. Individuals already receiving LTC are excluded from the sample, which therefore consists of those not yet in need of LTC but likely to have considered their future care arrangements. Following a standard battery of socio-demographic questions, the survey contains two main modules. In the first module, respondents are asked to imagine that they are 85 years old and need to enter a nursing home. They are then presented with a choice between two otherwise identical nursing homes: one staffed exclusively by human caregivers, and one in which a substantial share of tasks in a randomly assigned care domain, covering monitoring, communication, or mobility assistance, is done using caregiving robots and ICT. To quantify the strength of respondents' preferences, a follow-up question repeats the same choice question but increases the cost of the previously preferred option, allowing us to estimate willingness to pay (WTP) for human versus robotic care and how it

varies across care domains. We will call this module the "nursing home choice questions." In the second module, respondents indicate their level of agreement with a set of statements capturing expectations and concerns about caregiving robots and ICT, drawn from the existing literature. These statements address both caregiving robots and ICT in general, as well as each specific type. Responses to this module illuminate the perceptions underlying acceptance or rejection of robotic care and help explain why preferences may vary across care domains. We will call this module the "robot/ICT attitude questions."

Somewhat to our surprise, older individuals in Japan show a strong preference for facilities that incorporate caregiving robots and ICT. About two-thirds of respondents choose such a facility over a nursing home where care is provided without using robots and ICT. In terms of WTP, respondents are willing to pay, on average, 20 percent above the typical nursing home fee for access to facilities with robots and ICT. Acceptance of robots and ICT in the nursing home choice questions is also consistent with attitudes expressed in the robot/ICT attitude questions, establishing internal consistency of survey responses. Respondents who agree more strongly with positive statements and disagree more strongly with negative ones are more likely to choose a nursing home with robots and ICT.

Acceptance of robots and ICT also varies markedly by function. Technologies that assist with mobility are most preferred; communication-oriented technologies are least favored. Responses to the robot/ICT attitude battery and open-ended questions at the end of the survey shed light on the reasons for these differences. Many respondents express concern that the current shortage of human caregivers imposes too much physical burden on them, leaving less time and attention for residents and lowering their quality of life. Some respondents explicitly note that mobility-aid robots would reduce this burden, freeing human caregivers to focus on communication with residents—an aspect of care that respondents are comparatively more reluctant to delegate to robots.

This paper contributes to an emerging literature on caregiving robots and ICT in Japanese nursing homes. Eggleston et al. (2021) and Lee et al. (2024) study the supply-side impacts

of robots in nursing homes: on employment, retention, and wages of human caregivers.[2] The present paper shifts focus to the demand side: How potential care consumers perceive and value robot caregivers. Earlier work offers sharply divergent views. Arronson (2020) takes an optimistic view of robots as the future of long-term care, while Wright (2023) is more pessimistic. Both studies rely primarily on small case studies and qualitative observation. We contribute large-scale survey evidence on how older adults perceive and value robotic and ICT-assisted care.

This paper also relates to the literature on LTC policy responses to rising care demand. Several papers study reforms to Medicaid provisions: Achou (2023), De Nardi et al. (2016), and Mommaerts (2018) examine making Medicaid more generous, while Ettner (1994) and Stabile et al. (2006) focus on expanding in-home care benefits. Hackmann (2019) studies incentivized entry of new nursing homes to increase market competitiveness, as well as higher Medicaid reimbursement rates to encourage nursing homes to accept Medicaid residents. Arapakis et al. (2022), Barczyk and Kredler (2018), and Koreshkova and Lee (2020) consider subsidies for in-home care. We contribute to this literature by examining a novel approach to expand LTC supply: the adoption of caregiving robots and ICT.

We elicit respondents' preferences using hypothetical choice questions set in a carefully constructed health scenario designed to identify relevant preferences—an approach known in the literature as strategic survey questions (SSQs). This method was pioneered by Barsky et al. (1997) and has since been applied to study preferences related to long-term care by Ameriks et al. (2011), Finkelstein et al. (2013), Ameriks et al. (2020), and Achou et al. (2026). We extend this approach to a specific and unexplored dimension of long-term care: preferences over care provided by robots and ICT.

A growing literature documents the shortage of care workers in aging societies. Speyer et al. (2026) characterizes the current state of the home-and-community-based workforce in the U.S. as a crisis. Grabowski et al. (2026) shows that immigration reduces mortality among

[2]Abaluck et al. (2026) investigates the effectiveness of large language model assistance in patient care in outpatient clinics in Nigeria.

older Americans by expanding the supply of care workers, and Kreider and Werner (2025) shows that recent immigration restrictions in the U.S. have worsened the health care worker shortage. Fu et al. (2023) documents the analogous shortage in Japan. We examine whether caregiving robots and ICT could offer a solution to this problem that is acceptable from the perspective of potential care consumers.

The rest of the paper is organized as follows. Section 2 introduces types of robots used in Japanese nursing homes. Section 3 describes the survey questions and the sample. Section 4 shows the survey results and Section 5, using the survey responses, measures the welfare impact of introducing robot caregivers to reduce the waiting time to enter a nursing home. Section 6 concludes.

2 Caregiving Robots and ICT at Nursing Homes

The Japanese government has subsidized nursing homes to purchase caregiving robots and ICT since 2015. As of 2022, more than 70% of nursing homes in Japan employ at least one caregiving robot (Lee et al., 2024).

This paper focuses on the three most common types of robots and ICT currently used in Japanese nursing homes. For each type, we describe its core functions, discuss reasons residents might welcome it, and note potential concerns. The descriptions of the core functions are based on Ministry of Health, Labour and Welfare (2023).

The first category is communication robots and ICT. These typically take the form of robotic pets, small robotic characters, or humanoids (see Figure 1, Panel (a)). Their primary function is to converse with residents to improve mood and reduce feelings of isolation. Their capabilities often extend further: reminding residents to take medication or perform stretching exercises, sharing information gathered from conversations with caregivers and family members, and suggesting appropriate care services based on that information. Because robots do not tire from repetitive interactions, they can provide a reliable source of

social engagement for residents while freeing human caregivers from mentally taxing conversational tasks. At the same time, communication robots raise a legitimate concern that residents may be deprived of opportunities for genuine human connection. For residents with cognitive decline who cannot distinguish a robot from a human interlocutor, this may amount to deception (Wright, 2023).

The second category is monitoring robots and ICT. These systems connect sensors in residents' rooms and beds to monitors at nursing stations and alert systems carried by staff (see Figure 1, Panel (b)). They track vitals—heart rate, body temperature, and blood pressure—continuously, relieving nursing staff of the repetitive tasks of manual measurement and recording. Because the system monitors residents remotely, staff no longer need to make routine nighttime room checks, which can disrupt sleep and reduce residents' quality of life. The system also tracks sleep quality, identifying residents in deep sleep versus those about to wake, and detects motion in beds: When a resident attempts to get up, the system activates a camera on that resident so staff can intervene if there is a fall risk. Monitoring robots thus increase the likelihood that each resident's condition is closely tracked and that staff can respond in a timely manner. At the same time, they raise a concern: If nursing staff visit rooms less frequently in reliance on the system, needs that sensors fail to detect may go unaddressed.

The third category is mobility-aid robots and ICT. Among the various types of mobility-aid robots and equipment, we focus on those that assist with lifting residents for transfers between beds, wheelchairs, and toilets (see Figure 1, Panel (c)). Lifting is physically demanding for caregivers—typically requiring three staff members to lift a single resident of similar body weight—and injury-prone for residents as well, due to pressure concentrated at points of contact such as armpits and the backs of knees. Mobility-aid robots substantially reduce this burden: A single staff member can execute a transfer by maneuvering the robot, with no manual lifting required. This ease of transfer may also expand residents' activity levels, as they may request transfers more frequently. It also affords greater privacy during

Figure 1: Illustration of Caregiving Robots and ICT



(a) Communication



(b) Monitoring

Notes: The images of Panels (a) and (b) are from the Ministry of Economy, Trade and Industry. The image in Panel (c) is generated by the authors using an AI. (continued on next page).

Figure 1: Illustration of Caregiving Robots and ICT (continued).



(c) Mobility aid

Notes: The images of Panels (a) and (b) are from the Ministry of Economy, Trade and Industry. The image in Panel (c) is generated by the authors using an AI.

personal activities such as bathing, since fewer staff members need to be present. At the same time, mobility-aid robots carry a risk of injury if the equipment malfunctions or is used improperly.

The use of caregiving robots remains limited outside Japan. Some countries—including the U.S., Canada, and Germany—have experimented with communication robots in selected nursing homes,[3] but widespread adoption has not occurred in any of them.

As this section makes clear, caregiving robots and ICT carry both considerable promise and legitimate concerns. Examining how potential care consumers weigh these upsides and downsides is therefore of first-order importance.

3 Survey and Sample

We fielded a custom-designed online survey on long-term care preferences in Japan, targeting individuals between 55 and 75 years old who are not yet in need of long-term care. This age range is well-suited for the study: Individuals in this group are likely to have thought about their own future care needs and to have indirect experience with nursing homes through parents and relatives. Those already receiving long-term care are excluded, as completing an online survey presents practical difficulties for this population.

Before fielding, the survey was reviewed by the Oita Prefecture Council of Social Welfare. Oita Prefecture is among the leading prefectures in Japan in robot and ICT adoption in nursing homes. We fielded the survey in two stages. In February 2026, we conducted a pilot survey with a target sample of approximately 250 respondents to verify that the survey instruments functioned as intended and that respondents had no difficulty understanding the questions. The main survey was fielded in July 2026 with a sample size of 3,000. All results reported in this paper draw on the main survey unless otherwise noted.

[3]See, for example, CBC (2022) for an experiment in Canada.

3.1 Survey Design

The survey questionnaire is composed of three sections.

The first section collects standard demographic and socioeconomic characteristics: age, gender, marital status, income, wealth, whether the respondent has children, and if so, how far away they live. The section also asks about respondents' use of smartphones, email, social media, and web applications, as familiarity with these technologies may shape attitudes toward caregiving robots and ICT. Respondents report their subjective probability of needing long-term care for at least one, two, and four years. They also assess the adequacy of current caregiving staff levels in Japanese nursing homes and provide expectations for staffing adequacy ten years hence. Finally, respondents indicate whether they are aware of robots or ICT currently used in Japanese nursing homes.

The second section contains the main battery of questions eliciting preferences for caregiving robots and ICT. The section opens by introducing the three types of robots currently used in Japanese nursing homes—communication robots, monitoring robots, and mobility-aid robots—accompanied by the illustrations in Figure 1 and a description of each type's core functions.

We then introduce a hypothetical scenario describing respondents' future situation. Respondents are asked to imagine that they are 85 years old with two years of life remaining, require significant assistance with activities of daily living, and are experiencing cognitive decline. The description of the health status corresponds to care-need level 4 in the Japanese long-term care system. At this care level, individuals are eligible for and commonly enter nursing homes. Respondents are also asked to imagine the financial and family situation they would most likely face at age 85.

Respondents are then presented with two nursing home options, A and B, identical in monthly fee (150,000 yen) and room type (a semi-private room shared with one other resident, the most common arrangement in Japanese nursing homes). We assume that there is no waiting time for both nursing homes. The only difference between the two nursing

homes is the use of caregiving robots and ICT. Nursing home A provides all care through human caregivers. Nursing home B provides a substantial share of care using robots and ICT in one randomly assigned domain: monitoring, communication, or mobility aid.

After respondents select their preferred option, the survey presents a follow-up question in which the chosen option carries a higher price. The follow-up fee is 300,000 yen per month. If the respondent continues to prefer the same option, a further question raises the fee to 400,000 yen per month. If the respondent switches at 300,000 yen, the follow-up instead lowers the fee to 200,000 yen per month. Responses to these questions identify willingness to pay (WTP) for access to caregiving robots and ICT within one of eight intervals (in yen per month): $(-\infty, -250\text{K})$, $(-250\text{K}, -150\text{K})$, $(-150\text{K}, -50\text{K})$, $(-50\text{K}, 0)$, $(0, 50\text{K})$, $(50\text{K}, 150\text{K})$, $(150\text{K}, 250\text{K})$, and $(250\text{K}, \infty)$.

The validity of responses to these hypothetical questions depends on respondents' correct understanding of both the hypothetical health scenario and the nursing home options presented to them. To assess comprehension, we ask four test questions: two on the hypothetical scenario and two on the nursing home options.

The final section presents statements reflecting expectations and concerns about each type of caregiving robot and ICT, drawn from the prior literature. For example, a positive statement regarding communication robots and ICT reads: "Being able to chat or play with communication robots will help me feel less lonely and stay connected." A negative statement for the same type of robots and ICT reads: "I am concerned that having communication robots will deprive me of opportunities to make connections with humans." For each statement, respondents indicate their level of agreement on a 9-point scale (1 to 9). For each type of robot and ICT, we include two positive and two negative statements, presented in randomized order. We then include two positive and two negative statements about caregiving robots overall, followed by five statements concerning human caregivers and the effects of robots and ICT on them, with particular attention to foreign caregivers. Responses to this battery shed light on the expectations and concerns underlying the preferences elicited

in the previous section.

A particular concern about communication robots and ICT is that they may just substitute for human interaction rather than expanding residents' total communication time. To measure this concern directly, we elicit respondents' expectations about the effect of communication robots and ICT on communication time, both in total and with human caregivers specifically. The question begins by informing respondents that, in a typical Japanese nursing home without communication robots, residents spend on average two hours per day communicating with human caregivers (Japan Public Health Association, 2023). Respondents are then asked whether introducing communication robots would increase or decrease total communication time (the sum of time spent with robots and with humans) and time with human caregivers specifically, relative to this two-hour baseline, and if so, by how much.

3.2 Sample Characteristics and LTC-related Expectations

Table 1 reports summary statistics for the survey sample. By construction, the average age is approximately 65. Roughly half of the respondents are female, and half have a college education; three-quarters are married. The average respondent has 36 million yen in net worth and 6 million yen in annual household income, corresponding to approximately 230,000 and 35,000 in U.S. dollars. The final column reports averages of the same variables from a representative Japanese sample subject to the same screening criteria as our survey—namely, individuals aged 55 to 74 who are not currently receiving long-term care.

The vast majority of respondents have children, with an average of 2.5 children. About 30 percent have a child living within walking distance. Technology use is widespread in the sample: 93 percent use email frequently, 80 percent use social media platforms such as Facebook and Zoom, and 78 percent use web applications such as food delivery and ride-hailing services. Half of the respondents have heard of robots and ICT used in nursing homes, though only 2 percent have a family member or relative in a nursing home that uses them.

Table 1: Sample Summary Statistics and LTC-related Expectations

	Percentiles			
Variable	25th	50th	75th	Mean
Age	60	65	70	64.8
Female				0.50
College education				0.49
Married				0.72
Net worth (million ¥)[1]	4.5	20.5	49.5	36.4
Household income (million ¥)[2]	2.4	4.5	6.5	5.6
Number of children	1	3	3	2.5
Child in walking dist.				0.31
Use email				0.93
Use SNS				0.80
Use web applications				0.78
Heard of caregiving robots				0.50
Relative in NH with robots				0.02
Chance of needing LTC (%)				
For 1 year	35	75	90	58.8
For 2 years	35	65	95	57.7
For 4 years	0	65	95	54.4
Perceived adequacy of caregiver workforce[3]				
Current	2	3	5	3.3
10 years later	1	3	5	2.9

Note: N = 254
[1] N = 157; [2] N = 216. The smaller numbers of observations for these variables are due to respondents who chose "Don't know/Refuse to answer."
[3] Out of the 11-point scale, where the lowest score is 0 (not adequate at all) and the highest score is 10 (fully adequate).

The survey also elicits respondents' subjective probability of needing long-term care for at least one, two, and four years over their remaining lifetime. Respondents generally view long-term care as likely: The average probability of needing it for at least one year is 59 percent. Most also expect that, once they need care, they will need it for an extended period—the average probability of needing care for at least four years is 54 percent, only five percentage points below the probability of needing it for at least one year.

The first section of the survey also asks respondents to assess the adequacy of the caregiver workforce in Japanese nursing homes, both currently and ten years from now, on an 11-point scale ranging from 0 ("not adequate at all") to 10 ("fully adequate"). Respondents hold a markedly negative view of current workforce adequacy, with an average score of only 3.3.

They expect little improvement over time. If anything, conditions are expected to worsen, with the average score falling to 2.9 over the next ten years.

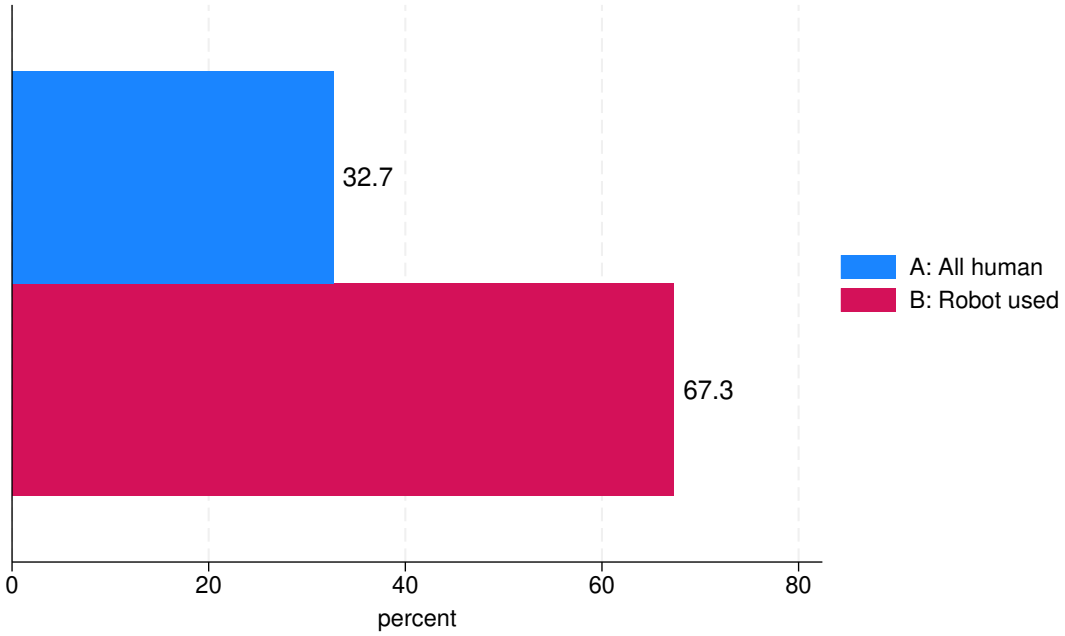
4 Survey Evidence on Preferences for Caregiving Robots and ICT

4.1 Choices between Robot and Human Caregivers

This subsection reports results from the hypothetical nursing home choice questions. Somewhat to our surprise, a substantial majority of older Japanese individuals prefer a nursing home where a significant share of care is provided using robots and ICT. Figure 2 shows that roughly two-thirds of respondents choose the nursing home with robots and ICT over one where all care is provided by human caregivers, when all other conditions, including cost, are held constant between the two nursing homes. This suggests that expanding the deployment of caregiving robots and ICT as a response to the LTC shortage can be welcomed by older Japanese individuals.

At the same time, acceptance rates vary markedly by type of robot and ICT. Figure 3 reports hypothetical nursing home choice results by care domain. Mobility-aid robots and ICT are the most welcomed: Nearly three-quarters of respondents in that treatment arm choose the nursing home with robots and ICT. Communication robots and ICT are the least welcomed, with fewer than 60 percent doing so. This pattern has direct policy implications: If the government seeks to accelerate robot and ICT deployment through subsidies, as the Japanese government has done over the past decade, mobility-aid robots represent the most promising priority from the perspective of demand-side preferences. As we discuss below, responses to other sections of the survey shed light on the reasons behind these differences.

Figure 2: Nursing Home Choice Result: All



Notes: The bar charts show the fraction of respondents choosing the nursing home where all care is provided by human caregivers (Nursing Home A, blue) versus the nursing home where a substantial share of care in a randomly assigned domain—monitoring, mobility/lifting, or communication—is provided with robots and ICT (Nursing Home B, red).

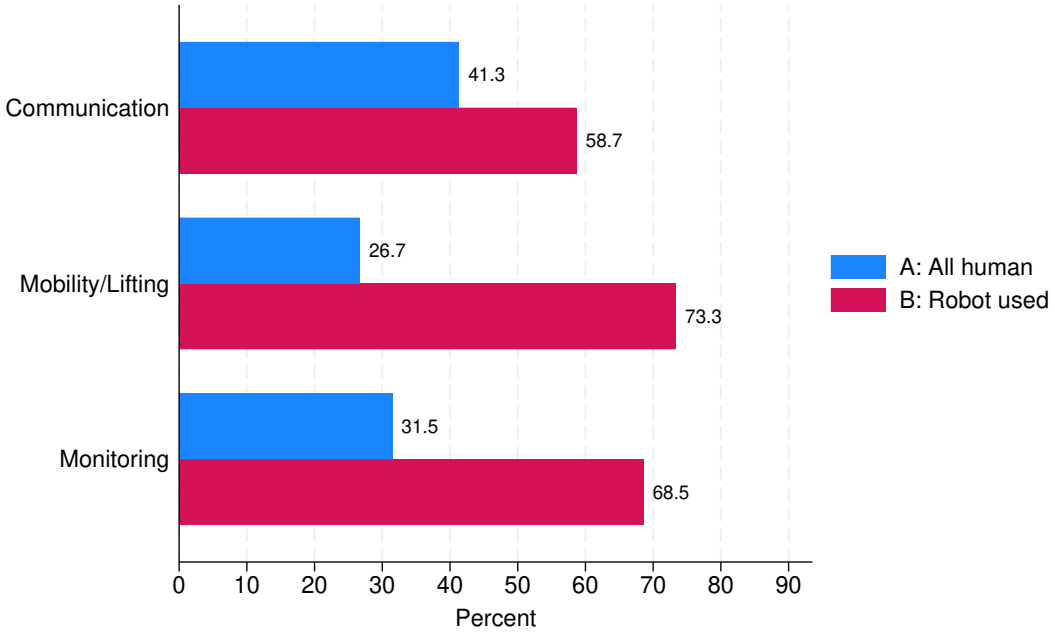
4.2 Willingness to Pay

[TO BE COMPLETED with the full survey. We show the distribution of WTP to enter an NH with robots and ICT. This becomes an input in the welfare analysis in Section 5.]

4.3 Expectations and concerns regarding robot caregivers

To shed light on the preferences expressed in the previous two subsections, we turn to responses from the final section of the survey, in which respondents rate their agreement with statements about potential benefits and concerns regarding caregiving robots and ICT on a 9-point scale (1 = "do not agree at all"; 9 = "very much agree"). Table 2 reports each statement along with the mean and standard deviation of agreement scores for each statement. In Panels A through D, the first two statements are positive (potential benefits) and the last

Figure 3: Nursing Home Choice Result: By Robot/ICT Type



Notes: The bar charts show the fraction of respondents choosing the nursing home where all care is provided by human caregivers (Nursing Home A, blue) versus the nursing home where a substantial share of care is provided with robots and ICT (Nursing Home B, red), separately by the randomly chosen care domain where robots and ICT are used.

two are negative (potential concerns). The final row of each of those panels reports the difference in average agreement scores between the positive and negative statements.

Panel A lists statements about caregiving robots and ICT in general. Consistent with the high overall acceptance rate, respondents score positive statements above the scale midpoint of 5 and negative statements below it. Respondents tend to agree that robots and ICT will improve care quality and make nursing homes more adaptable to future needs, though agreement is moderate, with an average score of around 6. They tend to disagree that robotic care is inferior to human care, though again, the disagreement is moderate, with an average score of 4.4. Respondents are neutral on whether unfamiliarity with technology would make them uncomfortable with robots and ICT. The gap between average scores on positive and negative statements is 1.6, establishing internal consistency with the high acceptance rate in

Table 2: Expectations and Concerns Regarding Robots/ICT

Statement	Mean	SD
A. Overall		
Robots will increase quality of care and address the worker shortage.	6.1	1.4
Robots will make nursing homes more adaptable to future needs.	6.2	1.4
Care provided using robots will be inferior to care by human caregivers.	4.4	1.4
Not comfortable with robots because I am not good with tech.	4.8	1.6
Mean score of positive statements - Mean score of negative statements	1.6	
B. Communication		
Will help me feel less lonely and stay connected.	5.5	1.4
It will feel better to rely on robots instead of humans for reminding me of things.	5.9	1.3
Conversations with robots will be nothing like those with humans.	4.7	1.5
Will deprive me of opportunities to make connections with humans.	4.7	1.5
Mean score of positive statements - Mean score of negative statements	1.0	
C. Mobility-aid/Lifting		
Will enable residents to engage in more physical activities.	6.0	1.3
Feel better if I can rely on robots instead of humans for mobility.	5.9	1.5
Concerned about injuries in case of a malfunction.	4.3	1.5
Concerned about injuries in case I do not use it correctly.	3.8	1.6
Mean score of positive statements - Mean score of negative statements	1.9	
D. Monitoring		
Allow for more prompt responses to residents' needs.	5.9	1.3
Will be more accurate and thorough than human caregivers in checking status.	5.6	1.3
Will not be able to detect the subtleties of needs.	4.8	1.6
May miss signals related to residents' needs.	4.9	1.5
Mean score of positive statements - Mean score of negative statements	0.9	

Note: N=254. 1: Do not agree at all; 9: very much agree

nursing home choice responses.

Panels B through D report results for statements specific to each type of robot and ICT. Two patterns stand out. First, for all three types, average agreement scores are higher for positive statements than for negative statements. This is consistent with acceptance rates exceeding 50 percent across all three types in the nursing home choice questions. Second, the gap between average scores on positive and negative statements is largest for mobility-aid robots and ICT, at 1.9 points, which is also the type with the highest acceptance rate. Respondents agree most strongly that mobility-aid robots enable residents to engage more in physical activities and appear relatively unconcerned about injury risks from misuse.

Communication robots and ICT, which had the lowest acceptance rate, rank near the bottom in score gap, essentially tied with monitoring robots and ICT. For communication robots, respondents' reactions to negative statements are nearly neutral. Monitoring robots and ICT, whose acceptance rate was only five percentage points below that of mobility-aid robots, show a similar score gap to communication robots. We do not expect a perfect correspondence between acceptance rates from the nursing home choice questions and agreement scores in this section, as the statements presented need not carry equal weight in respondents' nursing home choices.

4.4 Relationship between Elicited Preferences and Observable Characteristics

The credibility of this paper's findings hinges on the quality of responses to the main battery of survey questions: the hypothetical nursing home choice questions. A critical check is therefore whether respondents correctly understood the hypothetical scenario presented to them. After introducing the scenario and before eliciting choices, the survey administers four comprehension test questions: two on the hypothetical health situation (age and remaining life expectancy) and two on the nursing home options (the care domain in which robots and ICT are used in Nursing Home B and the cost comparison between the two nursing homes). Each question is asked at most twice. If a respondent answers any question incorrectly in the first round, the survey displays the correct answers and re-administers only the missed questions in the second round. Table 3 shows that respondents understood the hypothetical scenario well. In the first round, the average respondent answered approximately three of the four questions correctly. By the second round, the vast majority answered all questions correctly. This establishes that respondents completed the nursing home choice questions with a sound understanding of the hypothetical scenario, supporting the credibility of their responses.

Table 3: Number of correct answers to the comprehension test questions

	Percentiles					
Variable	10th	25th	50th	75th	90th	Mean
First trial	1	2	3	4	4	2.8
Second trial	2	4	4	4	4	3.6

Note: N = 254. The full score is 4.

5 Discussion: Welfare Impacts of Expanding Nursing Home Supply using Robot Caregivers

[TO BE COMPLETED. This section examines the welfare impact of subsidizing care robots as a way to expand the nursing home care supply. One key input is the preference for care provided by robots, which is estimated from the previous section. Other inputs to be calibrated based on the literature include the cost of caregiving robots, potential impacts of caregiving robots on waiting time for nursing homes, and the welfare cost of waiting for nursing home stays. With these parameters, one can judge whether the policy subsidizing care robots is welfare improving or not.]

6 Conclusion

[TO BE COMPLETED.]

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