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Japanese older people are not willing to live long: Culturally distinctive meaning attached to longevity

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Abstract

Using the stereotype embodiment theory as a framework, we investigated older Japanese people's willingness/unwillingness to live to 100 and the reasons they gave for their responses. We performed a multiple logistic regression and a thematic content analysis using data from 451 community-dwelling older people (ages 77 to 81). 28.2% of respondents wished to live to 100, whereas 71.8% expressed unwillingness to do so. Being male predicts a greater willingness to live to 100. Respondents who perceive longevity negatively tend to believe that their longevity will place a burden on family members. Nursing care is needed to some extent as we age. Research outside Japan often reports that the maximal extension of health and independence encourages people to see aging positively. In contrast, creating a system and culture in which nursing care does not burden family members helps Japanese people to consider aging positively.

Keywords: attitude toward aging, Japan, longevity, perceived burdensomeness, stereotype embodiment theory

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Introduction

The global population continues to age due to advances in medicine, technology, nutrition, and social policies. The population of centenarians, often identified as a symbol of longevity, has also increased. In 1990, when the United Nations began counting centenarians, there were 96,000 people worldwide aged 100 or older. Ten years later, in 2000, 1.7 times more people, 160,000, were centenarians. Since then, the population of people aged 100 or older has continued to increase, and 573,000 people worldwide were aged 100 or older in 2021 (Heshimati 2021). The expansion of centenarians has made it the fastest-growing segment of the population in many countries (Borras et al. 2020; Evans et al. 2014; He et al. 2018; Jopp et al. 2016).

Although a 100-year lifespan is no longer a wild dream, researchers who assessed people's desire to live long in various countries discovered that more than half of respondents (about 60% to 70%) across different age groups (from 20s to 100s) in their studies were unwilling to live to 100 (Donner et al. 2016; Karppinen et al. 2016; Lang et al. 2007). Such a finding disappoints researchers and practitioners endeavoring to broaden their knowledge of human biology, healthy diets, and lifestyles to extend longevity. Additionally, people's unwillingness to live long reflects negative attitudes toward aging, which harms their physical and psychological health, especially as they age (Levy 2022; Levy 2009; Wurm et al. 2007). As a result, people with a negative attitude toward aging and older people have shorter lifespans (Callahan 1996; Levy & Langer 1994; Nakagawa & Yasumoto 2019). Why do people not desire to live long? What factors discourage people from looking forward to living long? What kind of social environment encourages people to see aging positively? This study aims to uncover answers to such questions by using the case of Japan, which, as of 2024, has the world's highest number of centenarians per 10,000 population (Schaeffer 2024).

Literature Review

Research on the Desire to Live Long

In many countries, longevity is celebrated as an outstanding life achievement. At the same time, people share a culture of negative ageism and an

image of aging that makes people dislike getting older. Although aging is associated with conflicting images and meanings, life expectancy has steadily increased over time. More people are living longer than ever before. Responding to such a situation, research on people's desire to live long, targeting a wide age range (20s to 100s) of people, has been conducted over the last decade to understand how such conflicting images of aging affect people's perception of life (Ambrosi-Randić et al. 2018; Araujo et al. 2021; Bowen, & Skirbekk 2017; Brandão et al. 2017; Cicirelli 2011; Donner et al. 2016; Ekerdt et al. 2017; Huohvanainen et al. 2012; Karppinen et al. 2016; Lang et al. 2007; Ribeiro et al. 2017).

Contrary to many people's intuition, researchers have unfortunately found that many people worldwide do not necessarily wish to live long (Ambrosi-Randić et al. 2018; Donner et al. 2016; Huohvanainen et al. 2012; Karppinen et al. 2016; Lang et al. 2007). For example, research conducted in Finland with 1,405 participants aged 75–92 found that about 68% were unwilling to live to 100 (Karppinen et al. 2016). In Germany, about 80% of 364 participants aged 20–90 did not wish to live beyond 90 years (Lang et al. 2007). In the United States, researchers asked "How long would you like to live?" to 1,000 people aged 20–70; 65% answered that 85 years old was an ideal age to end their lives. However, when researchers added a phrase and asked, "How long would you like to live if you could sustain your physical and mental conditions as you are in your 20s?" more than 80% of respondents hoped to live to 120 (Donner et al. 2016). These studies found that celebrating one's 100th birthday is not necessarily seen as an exciting event, and age-related health decline is repeatedly a primary reason for people to feel this way (Ambrosi-Randić et al. 201; Donner et al. 2016; Huohvanainen et al. 2012; Lang et al. 2007).

How do centenarians perceive longevity? Do they hope to extend their lives? Do they feel living enough already? To find answers to such questions, research on the will to live long was conducted based on 121 centenarians (101 years old on average) in Portugal. They found that 31.4% were willing to live longer, 30.6% were not willing to live longer, and 38.0% had no clear position on the matter (Araujo et al. 2021). Although the interpretation of their answer, "no clear position," should be carefully considered, the proportion of participants who expressed a willingness to live long is not very different from the responses of other age groups described earlier. Given that centenarians tend to experience age-related illness and

functional decline (Serra et al. 2011), physical conditions do not lead centenarians to view a longer life negatively.

Researchers also investigated the longevity wishes of family members who provide nursing care for centenarians. Many care providers were in their late 60s and 70s, when the aging process is just beginning. Providing nursing care for their centenarian family members indeed interrupts their plans of aging; as a result, some would develop feelings of anxiety and depression (Brandão et al. 2017). Additionally, care provision experiences lead care providers to believe that longevity imposes burdens on family members (Jopp et al. 2016). The positive impact of the care experience on longevity desire is also reported. Older people who take care of centenarians tend to focus less on age-related functional decline when thinking about their will to live long (Brandão et al. 2019); instead, they clearly and actively plan their aging, considering the health challenges they will face (Yasumoto 2017).

Research on people's desire to live long attracts attention because attitudes toward aging, as reflected in people's willingness to live long, partly explain why some older people are physically and psychologically healthy and live longer than others. For example, having a pessimistic attitude toward aging harms physical and psychological well-being as we age (Levy 2022) because these people tend to engage in unhealthy behaviors such as disengaging from daily exercise, smoking cigarettes, and drinking alcohol (Levy et al. 2000). Daily habits such as these increase the risk of developing cardiovascular disease and other age-related illnesses, which affect our life expectancy (Levy et al. 2000, 2009). Such findings would explain the research results that people with positive attitudes toward aging would live 4 to 7.5 years longer than those with pessimistic attitudes (Callahan 1996; Levy & Langer 1994; Nakagawa & Yasumoto 2019). Thus, the meanings people attach to aging and older people significantly affect their longevity by mediating their daily habits.

Of course, perceptions of aging are not the only factor affecting longevity. Medical research points out that some people live longer because they possess longevity genes (Murabito et al. 2012). Poor lifestyles, such as a lack of exercise and a fatty diet, from a young age, can also affect illness and longevity in later life (Rajpathak et al. 2024). Furthermore, researchers investigating the impact of climate change report that global warming influences healthy aging and longevity by mediating various

pathways (Prina et al. 2024). There are also reports that older workers who return to work after retirement to overcome financial difficulties may suffer fall-related injuries due to the physical and psychological stress of work, hindering healthy aging (Suga et al. 2020). In 2023, in Japan, men's life expectancy was 81.09 years, compared with 87.14 years for women (Ministry of Health, Labour and Welfare 2024). Such a gender gap can be attributed to all of the aforementioned factors. While the possession of longevity genes and financial difficulties are often difficult to change at the individual level, changing perceptions of aging allows people to have some control over their aging experiences and longevity. Therefore, factors that affect people's perceptions of aging are worth learning about.

Research on people's desire to live long has often been conducted in Western countries. On the social level, aging can be discussed positively in the West. For example, a famous food company in the United States accepts applications from people who want to celebrate their 100th birthday on television. This company sponsors a well-known television show on which a brief message and a picture of the centenarian are shown to advertise their product. However, researchers who studied the desire to live long repeatedly reported that more than half of their participants were pessimistic about living to 100 years or more. Participants in these studies frequently state that age-related illness and health decline affect their views on longevity because illness limits their ability to move freely (Donner et al. 2016; Ekerdt et al. 2017; Karppinen 2016; Lang et al. 2007). Most likely, participants in Western countries think that declines in health represent a loss of control and independence over their lives (Nisbett 2003). Regardless of medical advances, aging eventually leads to some decline in health. We are unable to maintain total health as we age. If unavoidable health decline prevents people from seeing aging positively, we cannot end our lives with the last hurrah.

Similar to the United States, Japanese society celebrates longevity. The Japanese government sends celebratory gifts to its citizens on their 100th birthdays, suggesting they have achieved something important. Also, Japanese people tend to practice a collectivistic culture in which interdependence is the basis of human relationships (Nisbett 2003). People's dependence on others is good, especially in a reciprocal relationship. Using this cultural explanation, relying on others

because of age-related functional decline is acceptable. Older people used to care for younger people economically and socially, so receiving care in old age can be seen as a form of return. Japanese people should, therefore, have a positive attitude toward aging. However, even in Japan, old age is often associated with a negative image, and people often attach words like "frail," "anxious," "slow," and "unproductive" to aging and older people (Cabinet Office 2004; Jönson 2012). Supposing that longevity has both positive, celebrated meanings and negative, unhappy meanings, the effect of this gap on people is worth examining across cultures.

Research Using Stereotype Embodiment Theory as a Framework

Stereotype embodiment theory explains that the image of aging that we hold affects physical and psychological well-being as well as healthy life expectancy and longevity. It suggests that the types and kinds of information about aging and older people we have access to determine our chances of aging well. Stated differently, not overly diminishing the reality of aging is essential for societies aiming for a healthy, long life. We need to understand both the positive and negative aspects of aging equally. Stereotype embodiment theory has four traits. First, we learn images of older people (age stereotypes) from early childhood. Second, we internalize age stereotypes through socialization in the media, family settings, and public places; as a result, we begin to believe them. Third, internalized age stereotypes influence our physical and psychological well-being when we age because we start to think and act as age stereotypes suggest. Fourth, age stereotypes influence various aspects of our lives, including emotions, physical functioning, behavior, and longevity (Levy 2009).

Research applying stereotype embodiment theory investigates the effects of embodied stereotypes on people. This study frames beliefs about old age and older people as influencing psychological well-being (such as the desire to live longer and depression) and behavior (such as eating healthily and engaging in daily exercise). Then, such healthy behavior affects their physiological functions (i.e., memory and hearing). For example, Levy et al. (2000) surveyed people aged between 18 and 85 in the United States. They asked if they want to live under the condition

of serious illness, which could cause a financial or care burden on family members. The authors found an association between participants' will to live longer and the types of age stereotypes they hold. Participants who hold positive age stereotypes strongly desire to live longer. Their beliefs in the positive image of aging also led to higher self-efficacy, especially among older adults (Levy et al. 2000). Thus, it is clear that a positive attitude toward aging encourages people to try new things, promotes a healthy diet, and leads them to take their medicine as prescribed when they get sick (Levy & Myers 2004).

In addition, longitudinal research spanning 38 years and involving 440 people aged 18 to 49 has examined the association between age stereotypes and illness. The researchers found that participants who viewed aging positively at baseline were less likely to develop cardiovascular disease than those who viewed aging negatively. The result was consistent even after controlling for genetic influences. They also found that participants aged 18 to 39 who believed negative age stereotypes were twice as likely to develop cardiovascular disease at the baseline as participants who believed positive stereotypes (Levy 2009).

Researchers have also found that attitudes toward aging influence older adults' physiological functions, such as memory (Levy 1996) and hearing (Levy et al. 2000). Based on a 6-year longitudinal study in Germany, researchers found that older adults with positive age stereotypes tend to be healthier than those with negative ones (Wurm et al. 2007). Additionally, in a 20-year longitudinal study of the U.S. population, researchers found that having a positive image of aging and older adults was associated with a 7.5-year increase in longevity compared with those who did not (Levy et al. 2002). A similar pattern is reported: Japanese people with positive age stereotypes tend to live 4 years longer than those without, based on longitudinal research involving 1,672 people aged 60+ at baseline in 1987 (Nakagawa & Yasumoto 2019). Thus, research using the stereotype embodiment theory has clarified that our image of aging affects our mental and physical health and lifespan.

The next question is whether our attitude toward aging parallels the reality of the aging process. Stated differently, is there any chance we are constructing our attitude toward aging based on information that does not correspond to reality? If our perceptions of aging differ from reality, that is a significant problem.

Population Ageing in Japan

Japan's population aging is well known. In 1970, Japan became an aging society, with 7% of its population aged 65 or older. This proportion had doubled by 1994, when over 14% of the population was aged 65 or older, and Japan became an aged society. The expansion of the aging population continued, with people aged 65 or older representing 21% of the total population in 2007 (Ministry of Health, Labour and Welfare 2016) and 28.4% in 2019 (Ministry of Health, Labour and Welfare 2019). In 2024, 29.3%, almost one in three people, were over 65 (Ministry of Internal Affairs and Communications 2024).

The increasing number of people aged 100 and over is also a feature of Japan's aging population. For example, the Japanese government reported that 95,119 people – 0.07% of Japan's entire population – were over 100 years old as of September 2024 (Ministry of Health, Labour and Welfare 2024). Given the rapid population aging, researchers suggested that people born in 2017 in Japan have a 50% chance of living to 107 (Gratton & Scott 2020).

As a result of the extended life expectancy, healthy life expectancy has also increased in Japan. The Japanese government reported that healthy life expectancy rose by 9.5 months for men and 6.0 months for women from 2013 to 2016 (Cabinet Office 2018). Such a change reflects that the duration of each person's reliance on nursing care has declined; however, Japan's national budget for medical expenses for older people remains in crisis, as many older people still receive care even though each person's reliance is shorter. Therefore, Japan should further extend its healthy longevity. In such a situation, knowledge of how to promote a positive image of aging, which encourages people to live longer with a healthy body, is increasingly important, just as advances in medical knowledge are.

Methods

Participants

Data are derived from the Septuagenarians, Octogenarians, and Nonagenarians Investigation with Centenarians (SONIC). The SONIC study is an ongoing longitudinal study that started in 2010. Three age cohorts are incorporated: septuagenarians aged 69–71, octogenarians aged 79–81,

and nonagenarians aged 89–91. We excluded individuals who have been certified as requiring care level 2 or higher in the public long-term care insurance system and received care. An earlier study found that higher levels of care were associated with physical and cognitive impairments (Arai et al. 2003). Participants were followed up at 3–4-year intervals in four regions of Japan: Asago City, Hyogo (western rural); Itami City, Hyogo (western urban); Nishitama District, Tokyo (eastern rural); and Itabashi Ward, Tokyo (eastern urban). In addition, participants were asked to complete self-administered questionnaires by mail in advance and bring the completed questionnaires to a survey venue (e.g., a local community center or research center) near their homes. The trained interviewers checked the questionnaires and asked participants to clarify any unclear responses. Informed consent was obtained from all participants. The details of the SONIC study are described elsewhere (Gondo et al. 2017).

In the present study, we used cross-sectional data from a 2019 follow-up survey. Initially, 1,229 septuagenarians entered the SONIC study in 2010 or 2013. In 2019, 550 (age range 77–81; 50.5% female) participated in the follow-up survey. The follow-up rate was 44.8%. Respondents in the follow-up survey had higher levels of education than those who dropped out during the follow-up (12.30 vs. 11.80 years; t (1,171.14) = 3.60, $p < 0.001$). Age and gender did not differ between the two groups.

This study has been approved by the ethics committee of the Graduate School of Human Sciences, The University of Osaka [30-121].

Procedure

Participants were asked whether and why they wished to live to 100. Specifically, they first responded to a yes/no question ("Do you wish to live to 100 years old?") and then answered an open-ended question ("Why do you wish so?"). We follow the same approach to asking questions as in the studies by Karppinen et al. (2016) and Araujo et al. (2021).

Potential factors associated with the wish to live to 100, as well as demographic, social, and health-related variables, were considered in the present study. We collected information on demographic variables from the baseline surveys conducted in 2010 or 2013 and on social- and health-related variables from the follow-up survey conducted in 2019. Age at the follow-up survey (years), gender (0 = *female*, 1 = *male*), and education

(years) were included as demographic variables. We calculated age at the 2019 follow-up survey by subtracting the date of birth from the survey date.

Perceived financial status, marital status (0 = *no*, 1 = *yes*), co-residence with children (0 = *no*, 1 = *yes*), and caregiving status (0 = *no*, 1 = *yes*) were measured as social variables. Perceived financial status was assessed using a single item ranging from 1 (very bad) to 5 (very good).

Perceived health status, instrumental activities of daily living (IADL), and depression (0 = *no*, 1 = *yes*) were measured as health-related variables. Perceived health status was assessed using a single item ranging from 1 = *poor* to 4 = *excellent*. IADL was measured using the Tokyo Metropolitan Institute of Gerontology Index of Competence (TMIG-IC) (Koyano et al. 1991). TMIG-IC comprises 13 items, including transportation, shopping, and meal preparation, with higher scores indicating higher levels of IADL. The Cronbach's alpha coefficient was acceptable ($\alpha = 0.63$). Depression was assessed using the Japanese version of the WHO-5 Well-Being Index (WHO-5-J) (Awata, Bech, Koizumi et al. 2007; Awata, Bech, Yoshida, et al. 2007). The WHO-5-J consists of 5 items ranging from 0 (at no time) to 5 (all of the time), with higher scores indicating better mental health. The Cronbach's alpha coefficient was good ($\alpha = 0.83$). The WHO-5-J is used to screen for depression, with a cutoff score of <13.

Quantitative Analysis

We presented descriptive statistics and compared relevant study variables between participants who wished to live to 100 and those who did not. Next, we performed a multivariate logistic regression analysis to examine associations between demographic, social, and health-related variables and the wish to live to 100.

Qualitative Analysis

We conducted a thematic content analysis (Pope & Mays 1995; Silverman 2010) using the data, which are open-ended responses to "Do you wish to live to 100 years old? What are your reasons for this opinion?" Three people were involved in the data analysis. The first

author reviewed the answers and found none were incomplete. The first and second authors then systematically examined the data to create the coding sheet and the analytic guide, which includes categories (concepts that allow the classification of narratives) and themes that group similar categories. The coding sheet was modified several times to improve inter-coder reliability. Finally, three authors individually examined the data using the final version of the coding sheet. The results were compared and discussed when inconsistencies appeared to confirm reliability. We also paid attention to gender and geographic differences, as well as the uniqueness of participants' responses, to ensure we did not miss any critical points.

Results

Participants' Characteristics and Factors Associated with the Wish to Live to 100 Years Old

Table 1 summarizes the quantitative analysis results. Ninety-nine out of 550 respondents in the follow-up survey had missing values on the study variables and were excluded from the quantitative analysis. Of the 451 respondents included in the quantitative analysis, 28.2% (n = 127) wished to live to 100 years old. The multiple logistic regression analysis further demonstrated that men were more likely than women to wish to live to 100 (OR = 0.42, 95% CI 0.26–0.66). To assess the robustness of the results, we performed subgroup analyses stratified by region (rural: n = 201; urban: n = 250). The results were robust across regions, and gender was the only statistically significant factor associated with the wish to live to 100, indicating that men tended to wish to live to 100 regardless of region (results not shown).

Qualitative Analysis of the Wish to Live to 100 Years Old

In total, 542 respondents shared reasons regarding their will to live to 100. We have summarized their answers in Tables 2 and 3. Of the 902 answers, 234 were related to the willingness to live 100 years, whereas 668 were descriptions of unwillingness. "I have things I want to do" was the most frequently used phrase to describe their desire for longevity.

Table 1. Descriptive characteristics of participants who wished to live to 100 and those who did not, and a multivariate logistic model for the wish to live to 100

Variable	Do you wish to live to 100? (ref. no)			Multivariate logistic model	
	Yes (n = 127)	No (n = 324)	p[a]	OR (95% CI)	p
Age (range 77–81 years)	78.87 (0.79)	78.90 (0.84)	0.808	0.99 (0.76–1.29)	0.941
Gender (ref. male)	56.8	56.8	>0.001	0.42 (0.26–0.66)	>0.001
Education (range 9–23 years)	12.68 (2.62)	12.14 (2.21)	0.020	1.05 (0.96–1.15)	0.295
Perceived financial status[b] (range 1–5)	3.10 (0.68)	3.02 (0.76)	0.130	1.12 (0.83–1.51)	0.472
Married (ref. no)	79.5	69.8	0.037	1.24 (0.73–2.09)	0.433
Living with children (ref. no)	32.3	29.0	0.495	1.24 (0.78–1.98)	0.366
Caregiving status (ref. no)	8.7	8.3	0.910	1.02 (0.48–2.17)	0.968
Perceived health status[b] (range 1–4)	3.02 (0.64)	2.99 (0.56)	0.644	1.06 (0.73–1.56)	0.749
IADL[b] (range 4–13)	11.83 (1.38)	11.62 (1.70)	0.166	1.13 (0.98–1.31)	0.094
Depression (ref. no)	18.1	19.4	0.746	1.05 (0.59–1.85)	0.867

Note: n = 451, OR = odds ratio, CI = confidence interval. Mean (*S.D.*) or % are shown.
[a]Categorical variables were compared with χ^2 test and continuous variables with t-test.
[b]Higher scores indicate better financial or health statuses.

In contrast, respondents who are pessimistic about living longer perceive that their longevity would annoy people around them, especially family members. Stated differently, respondents who resist relying on others are less likely to wish to live longer. Respondents who answered so were weighted more than people who did not in our samples. Also, we found some gender-based patterns in their answers, which we will introduce in the following sections.

Reasons for Answering "YES, I Want to Live to be 100."

Four themes and nine categories emerged from the data (Table 2). Out of four themes (*conditionally if*, *positive attitudes*, *let it be*, and *referencing others*), *positive attitudes* were the most often described theme

Table 2. Why participant older people hope to live to 100 and the number of narratives in each category

Theme	Category (*n*)	Examples of narrative
Conditionally, if …	Being healthy (42)	"If I stay healthy."
		"If I can sustain physical and cognitive functions."
	Not being taken care of (18)	"If I do not have to ask others for support."
		"If I can do my own thing."
Positive attitudes	Current health status (2)	"I am healthy."
	Curiosity (38)	"I want to see my grandchildren grow."
		"I want to see more about how society changes."
	Mission (17)	"I want to achieve longevity by utilizing the benefits of medical advancement."
		"I want to live as long as possible because I was given a life."
	Having things I want to do (76)	"I want to stay healthy to do my hobbies."
		"I enjoy living with my daughter."
	For other people (14)	"For my loved ones (children, grandchildren, pets, and friends)."
Let it be	Let it be (7)	"Let it be."
		"Let nature take its course."
Referencing others	Referencing others (20)	"Many people live longer than 100 years old."
		"Longevity family."

(147 out of 234 accounts). This theme comprises five categories (*current health status*, *curiosity*, *mission*, *having things I want to do*, and *for other people*). Among the five categories, *having things I want to do* was the most frequently mentioned, including hobbies and spending time with family members (76 out of 147 accounts). Additionally, participants' longevity wishes are driven by *curiosity* about a specific target, such as their grandchildren's growth or a future society (38 out of 147 accounts). Others explained that longevity is their *mission*, saying, for example, "I want to live as long as possible because I was given a life" (17 out of 147 accounts). Willingness to live long was also expressed to show affection *for others* (children, grandchildren, pets, and friends) (14 out of 147 accounts), as people hope to live long enough to accompany their loved ones. Finally, two out of 147 accounts were purely positive toward their *current health status*, saying, "I have been healthy. I will sustain it even at the age of 100."

Although these respondents regarded longevity positively, their perceptions rely on certain conditions. For example, some desired to reach 100 *conditionally if* they were healthy (42 out of 234 accounts). Others hoped for longevity, *conditionally if* they were not being cared for (87 out of 234 accounts). Men are more likely than women to express their wish to live to 100 only if they were not in the condition of being taken care of by others (women: 20.7%, men: 26.3%; $\chi^2(1) = 5.10$, $p = 0.024$). Respondents also referred to others, such as long-lived family members or famous centenarians introduced via media, as their longevity models (20 out of 234 accounts). Finally, a few respondents wished to follow their fate by releasing control over their own lives, as represented by the phrase "let it be" (7 out of 234 accounts).

Reasons for Answering "NO, I do not Want to Live to be 100"

Five themes and 13 categories emerged from the data (Table 3). Among the five themes (*predicting the future*, *anticipating anxiety over the future*, *negative attitudes*, *let it be*, and *referencing others*), *negative attitudes* were the most commonly mentioned theme (265 out of 668 accounts). This theme comprises four categories (*do not want to be taken care of, do not want to annoy others*, *nothing I want to do*, and *free oneself*). *"Do not want to annoy others"* was the most frequently commented category (132 out of 265 accounts), with respondents giving answers such as "I do not want to be a burden to

Table 3. Why participant older people do not hope to live to 100 and the numbers of narratives in each category

Theme	Category (*n*)	Examples of narrative
Predicting the future	Loss of health (42)	"I do not have confidence in my health."
	Loss of money (9)	"I cannot afford to live to 100."
Anticipating anxiety over the future	Losing health (182)	"I want to die while I can still move around."
		"Living with poor health is painful."
	Becoming unattractive (8)	"Older people do not look good."
	Becoming isolated (23)	"I feel lonely because people around me died already."
	Anxiety for the future (8)	"The world is deteriorating."
	Losing the meaning of life (30)	"There is no point in living without being productive."
		"Living while being taken care of does not mean to be alive."
Negative attitudes	Do not want to be taken care of (87)	"It is not good to be taken care of by others."
		"I do not want to receive nursing care."
	Do not want to annoy others (132)	"I do not want to be a burden to my family."
		"If I cause trouble to others, there is no meaning to being alive."
	Nothing I want to do (34)	"I would not have anything to do at the age of 100."
		"I fully enjoyed my life already."
	Free oneself (12)	"Living is bothersome."
Let it be	Let it be (49)	"I entrust my life and death to nature."
		"The present is more important than future."
Referencing others	Referencing others (52)	"I have seen relatives who struggled to live with illness."
		"I learned about life's difficulties with pain in old age in novels."

my family." The second most common category was *not wanting to be cared for* by others because of health decline (87 out of 265 accounts). These two categories are similar but different. Respondents who "do not want to be a burden to the family" perceive that nursing care is indeed a burden on others, whereas people who do "not want to be cared for by others" value independence and dignity. Additionally, some respondents said there would be "nothing I want to do" at the age of 100 (34 out of 265 accounts). Others expressed a desire to *free themselves* by bringing their lives to an end (12 out of 265 accounts) because they felt that living was burdensome.

Anticipating anxiety over the future was the next most popular analytic theme (251 out of 668 accounts), which includes five categories (*losing health*, *becoming unattractive*, *becoming isolated*, *anxiety about the future*, and *losing the meaning of Life*). *Losing health* was the most discussed category (182 out of 251 accounts). Respondents were also concerned about *losing the meaning of life* due to unproductivity in old age (30 out of 251 accounts). *Losing the meaning of life* was mentioned more often by men than women (women: 4.2%; men: 11.8%; $\chi^2(1) = 8.00$, $p = 0.005$). Additionally, they were worried about *becoming isolated* (23 out of 251 accounts) because of people around them passing away. Gender differences were apparent in this response, with women more likely than men to cite becoming isolated as the reason for not wishing to live to 100 (women: 8.3%; men: 3.0%; $\chi^2(1) = 4.88$, $p = 0.027$). Respondents also expressed *becoming unattractive* by losing hair and gaining wrinkles (8 out of 251 accounts) as their reason for not wanting to live to 100.

Referencing others (52 out of 668 accounts), such as seeing relatives struggling with illness or learning about pain in old age in novels, was also discussed. The theme of *predicting the future* comprises two categories: anticipating a loss of health (42 of 51 accounts) and a loss of financial ability (9 of 51 accounts). Finally, represented by the theme *let it be*, some said that they pay attention to the present rather than the future; as a result, they were indifferent to longevity (49 accounts). Men were more likely to adopt the attitude of 'let it be' than women (women: 7.4%; men: 19.5%; $\chi^2(1) = 12.54$, $p < 0.001$).

Discussion

Our findings have similarities and differences with studies conducted in other countries. For example, 28% of Japanese respondents (age 77–81)

answered "yes" to wanting to live to 100 years old, whereas 37% of participants in the Helsinki Businessmen Study (Finland) (age 72–88) (Huohvanainen et al. 2012) and about 33% of people in another study in Helsinki (age 75–96) (Karppinen et al. 2016) expressed their wish to live longer. Although Japan and Finland are countries of longevity, far less than half of the participants wished for longevity in all three studies. Additionally, the extant research shows that Japan's tendency for older men to wish to live longer than women was similarly reported in the studies conducted in the United States, Israel (Carmel 2001), and Finland (Karppinen et al. 2016). In all studies, men are more likely than women to wish to live longer.

However, we also obtained several results that differed from previous studies. One difference is that people who highly evaluate subjective health wish to live longer in Finland (Karppinen et al. 2016) and the United States (Huohvanainen et al. 2012). In contrast, such a pattern was not found in Japan. Japanese respondents did not determine whether they wished to live longer based on their current health condition. One interpretation of this finding is that Japanese respondents perceive their health as vulnerable to change, so they do not rely on it when considering longevity wishes. The second version is that older Japanese people readily accept the decline in health in old age. For example, previous research has shown that conceptions and experiences of well-being differ across cultural contexts (Diener & Suh 2000; Kitayama & Markus 2000; Taylor et al. 2004). A group of people who tend to practice independent cultures, which are thought to be more prevalent in the West, autonomy (Oishi 2000), personal achievement (Uchida & Kitayama 2009), self-confidence, and self-motivation (Kitayama & Markus 2000), influence people's well-being. Given the difficulty of maintaining these at a high level amid functional decline associated with aging, people in countries where previous studies have been conducted in Western countries may have had difficulty accepting aging.

On the other hand, Japan tends to have a high level of interdependent contexts, and people's well-being is often associated with social harmony (Oishi & Diener 2001) and perceived emotional support from close others (Uchida et al. 2008). Because these factors can be acquired as one ages, we can infer that older Japanese people might adapt well to age-related health decline. However, it is unclear whether this pattern continues even now. For example, studies conducted in countries known as the Global

South discuss that the increasing trend of nuclear families (Bloom et al. 2010; Caldwell et al. 1984) and the decline in the practice of filial piety (Jamuna 2003; Lamb 2013; Shah 1996) are making it more difficult for older people to obtain support from family and close friends. This phenomenon is similarly happening in Japan.

Looking closely at the reasons for wanting to live to 100, *having things I want to do* was the most frequently mentioned among Japanese respondents. This is similar to the Finland study's theme of love of life (Karppinen 2016). *I have things I want to do*, and my love of life is similar in that I see life as precious; however, there is a slight difference in perception. Finnish respondents' focus of attention tends to be on their lives themselves. They perceive that "life" has value and meaning; therefore, longevity is desirable.

In contrast, Japanese respondents tend to discover value and meaning in life when they identify that they are part of society or a relationship (i.e., family and friends). The tendency can be explained by the differences in people's perceptions of low-context and high-context cultures (Hall 1976). For example, Western countries are typically classed as low-context cultures, in which personal identity and the acquisition of social roles are less likely to be influenced by others and the social environment. As a result, older people in low-context cultures tend to focus on the social and physical condition of the aging self. However, people living in high-context cultures, such as Japan, tend to define themselves through their relationships with others and their social surroundings (Nisbett 2003). As a result, older Japanese respondents may perceive their lives as meaningful mainly when their existence can be confirmed through relationships with others (children or partners).

Research on the so-called "Blue Zones" investigated the secret of longevity based on five regions worldwide (Ikari, Greece; Okinawa, Japan; Sardinia, Italy; Loma Linda, California, United States; and the Nicoya Peninsula, Costa Rica) in which high numbers of centenarians live and discovered the secret to living very long (Poulain & Herm 2021). Their study presented the Japanese concept of "ikigai" (reason to wake up in the morning, purpose in Life). One of the centenarians in Okinawa said her "ikigai" is to hold her grand-grand-children. Another centenarian answered that his "ikigai" is to catch fish for his family (Poulain & Herm 2021). Thus, people find meaning or purpose in life when they assume a

social role, even a small one. Our respondents were much younger than centenarians, yet they also emphasized the importance of "ikigai." For many, devotion to their hobbies and having meaningful time with friends and family is "ikigai." Finding one's place in a relationship with others, or even in hobbies, helps one confirm his or her social roles and the reason for living. Ultimately, life becomes precious.

Health decline is inevitable during aging; however, some people wish to let their lives go if they cannot sustain independence. For example, when asking people over 62 in the United States, Germany, and China whether they want more time, many replied "Yes" only if they were healthy (Ekerdt et al. 2017). Researchers who conducted a qualitative study in Finland also found that the most popular reason for wanting to live to 100 years old was being healthy (Karppinen et al. 2016). A group of Japanese respondents also expressed their wish to live to 100 if they remained healthy. Being healthy is a valuable aspect of life; however, we discovered that such an interpretation might be too simplistic. As stated, we need to know why older people emphasize the importance of maintaining health in old age. For example, Japanese respondents replied that health decline is terrible, not because they would lose control over their lives or they must live with pain, but rather that their illness would burden other people with nursing care. Their genuine concern is other people's difficulties resulting from their dependency. Given that Japan is a high-context culture, older Japanese respondents tend to perceive their aging in the context of the family setting. Such an approach makes it difficult to ignore the effects of their age-related health decline on others. If that is the case, Japanese respondents might be able to adapt to and accept age-related health decline more readily if society developed a culture that views nursing care as not a burden. Unfortunately, our study findings show that Japanese nursing care systems remain insufficient for people to feel comfortable relying on.

Japan is often described as an older-people-friendly society (Levy 2022); however, our results suggest that this interpretation may be incorrect. People living in collectivistic, high-context cultures have difficulty separating their aging from its effects on those around them. Older people in Japan may be able to accept health decline as part of life, but they are uneasy about the fact that people around them will have to adjust their lives to provide care for them. This may be more likely if they have had experience

of caregiving themselves (Brandão et al. 2017, 2019; Jopps et al. 2016). If Japan is indeed an older-people-friendly society, older people are welcome to receive support from family members, neighbors, or even strangers in public spaces; however, our respondents did not feel this was the case. It provides important implications. For example, if physical conditions directly influence people's perception of aging positively in the United States, interventions to extend healthy longevity will be key. Learning medical knowledge and information about healthy lifestyles and providing people with access to resources would encourage them to see aging positively. Suppose the influence of health decline on people's wish to live longer is mediated by the burden it places on others. In that case, creating a society in which the social meaning of nursing care is positive or neutral is necessary, on top of medical knowledge and information on healthy lifestyles. Indeed, a longitudinal study of people aged 75 and older in Japan found that those who believe that children should be responsible for caring for older parents tend to maintain psychological well-being even when they need nursing care (Takagi & Saito 2012).

Our study has some limitations. First, the participants were relatively healthy people in their 80s. A new analytical theme may have emerged if we had recruited older people with declining health conditions. Additionally, we gathered data through open-ended questions rather than in-depth interviews; as a result, we were unable to fully capture participants' thoughts.

Conclusion

Focusing on Japan, we examined whether older people aged 77–81 want to live to 100 and the reasons they gave for their responses. We discovered that more than half of the older Japanese participants in our study are unwilling to live to 100. The result is similar to research conducted in Finland and the United States, in which more than half of the respondents were also unwilling to live to 100. People worldwide seem to think that aging is not something to look forward to. Although the reason behind this lies in cultural differences, societal ageism, which views aging negatively, similarly exists across countries.

Nevertheless, our longevity keeps extending. To make our aging experiences more positive, the factors that drive ageism in society must be understood; otherwise, a practical solution to promote positive views of

aging cannot be proposed. The fact that older Japanese people living in a super-aged society hold conflicting views about their wish to live long makes us reconsider our approach to old age, which currently focuses on health. The efforts of scientists and scholars to extend longevity and develop health-assistance devices offer hope about the aging process; however, health decline and the need for nursing care may be unavoidable toward the end of life. If there is a negative perception of age-related health decline, the number of people who wish to live longer will not increase. The positive effect of the desire for longevity on actual longevity cannot be utilized unless people look forward to aging. The aging approach should focus on health and something else that must be reconsidered.

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