Perceptions of older adults and generativity among older citizens in Japan: a descriptive cross-sectional study

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ABSTRACT

Objectives: As the population ages worldwide, including in Japan, there is a growing expectation for older adults to remain active participants in society. The act of sharing one’s experiences and knowledge with younger generations through social engagement not only enriches the lives of older individuals, but also holds significant value for our society. In this study, we examined both positive and negative perceptions of older adults and investigated the correlation between these perceptions and generativity among older citizens. Additionally, we evaluated the impact of life satisfaction on these factors.

Methods: We conducted a survey of 100 older adults in Japan (mean age, 71.68 years) and utilized multiple regression analyses, using positive and negative perceptions of older adults, life satisfaction, and demographic factors as independent variables. The sub-categories of generativity—namely, generative action, concern, and accomplishment—were used as dependent variables.

Results: Participants who held a more positive perception of older adults demonstrated a higher level of generative actions and concerns. Additionally, participants who reported higher levels of life satisfaction also exhibited more generative actions, concerns, and accomplishments. Conversely, those who held a more negative perception of older adults were found to have higher levels of generative actions.

Conclusion: Enhancing positive perceptions of older adults among them can boost the sub-categories of generativity. This study, which was conducted from an exploratory perspective, has several limitations, including a potential sampling bias. A more comprehensive examination of the relationship between perceptions of older adults and generativity is anticipated in future research.

Keywords: Generation; Health status; Psychological well-being
Introduction

Population aging is progressing worldwide, including in Japan, where individuals aged 65 and above comprise 29.1% of the total population [1]. The falling birthrate and aging population are anticipated to pose significant societal challenges. In light of these circumstances, it is crucial for older adults to actively participate in society to invigorate local communities and bolster the labor force [2]. The act of sharing one's experiences and knowledge with the younger generation through social participation not only enriches the lives of older citizens, but is also meaningful for our society.

In this study, we explored the concept of generativity, which pertains to the transmission of experiences and knowledge from older to younger generations. Erikson [3] defined generativity as the interest in nurturing and guiding the next generation, primarily through the act of parenting [4]. However, recent trends such as increased life expectancy and delayed marriages have led to a broader interpretation of generativity as a psychological and social issue encompassing adulthood and old age [5]. Indeed, research involving older adults has demonstrated that those with higher levels of generativity tend to experience greater life satisfaction [6,7] and are more likely to participate in local parenting support initiatives [4]. Generativity comprises the following elements: (1) generative action, which includes specific actions like sharing personal experiences; (2) generative concern, which signifies an interest in engaging with younger generations and in creative activities; and (3) generative accomplishment, which conveys a sense of societal contribution and involvement in passing experiences to younger generations [4]. By differentiating these components and identifying the psychological variables linked to them, we can effectively develop psychological interventions to enhance generativity among older individuals.

We also examined positive and negative perceptions of older adults. As the elderly population expands, the range of individual perceptions about older people is likely to broaden. In terms of the relationship between these perceptions and generativity, older adults who hold more positive views of themselves are often proud of their peer group (i.e., older adults), and are inclined to share their experiences and knowledge with younger generations. This is likely because older adults who maintain positive old-age stereotypes tend to have better mental health [8–10] and are more likely to engage actively in generative actions. On the other hand, those who hold negative views of older adults may be more reluctant to share their experiences with younger generations.

The literature presents common stereotypes about old age as both negative, including descriptors like “slow” and “feeble,” and positive, with terms such as “warm” and “gentle” [11,12]. These ambivalent stereotypes suggest that the positive and negative perceptions of the elderly are not mutually exclusive. In other words, a certain segment of the older population may view their social group in both a positive and negative light. With this in mind, we separately assessed the positive and negative perceptions of the elderly and explored the relationship between these perceptions and generativity.

A variable that must be accounted for when investigating this relationship is life satisfaction. Individuals with greater life satisfaction tend to have higher self-esteem [13,14] and fewer depressive tendencies [15,16], making them more likely to perceive the ingroup (i.e., older adults) in a positive light. Furthermore, there is a positive correlation between generativity and life satisfaction among older adults [6,7,17]. Consequently, we aimed to explore the relationship between positive and negative perceptions of older adults and generativity, after controlling for life satisfaction.

Materials and Methods

Participants

We performed a power analysis assuming a medium to large effect size ($f^2 = 0.20$, $N_{\text{parameter}} = 7$, $\alpha = 0.05$, $\beta_{\text{power}} = 0.80$), and the required sample size was $N = 80$. A total of 100 older Japanese, comprising 10 men and 90 women in urban areas, participated in this study (mean, 71.68 years; range, 65–86 years). They were enrolled in a health program implemented by a Japanese municipality in 2021 to train volunteers to read picture books to children. The ethics committee of the authors’ institution approved this study.

HIGHLIGHTS

• Passing on older adults’ experiences to the younger generation is meaningful for our society.
• We conducted a survey of 100 older adults in Japan.
• Participants with more positive perceptions of older adults had more generativity.
• Participants with higher levels of life satisfaction had more generativity.
• A more detailed survey of the link between perceptions of older adults and generativity is expected.

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Measurements
We utilized the 16-item measure developed by Toyoshima et al. [18] to evaluate both positive and negative perceptions of the elderly, with 8 items dedicated to each. Positive perceptions were gauged using descriptors such as “cheerful” and “active,” while negative perceptions were measured with terms like “sickly” and “dependent.” Participants were shown these descriptors and asked to rate the extent to which they believed each term applied to older adults. Their responses were recorded on a 5-point Likert scale, with 1, representing strong disagreement, to 5, representing strong agreement. The mean was used as the score (\(\alpha = 0.76, 0.87\), respectively), with higher scores indicating a more pronounced perception.

While the correlations between this scale and existing ageism scales remain unknown, the items used in this study are believed to accurately represent stereotypes of old age in Japan [18, 19].

We measured generativity using the revised Japanese version of the Generativity Scale [4], comprising 4 items related to generative action, 4 items related to generative concern, and 4 items related to generative accomplishment. Participants were asked to rate their responses on a 6-point Likert scale, with 0, indicating strong disagreement, to 5, indicating strong agreement. We calculated the mean score for each sub-category (\(\alpha = 0.94, 0.85, 0.87\), respectively), with higher scores signifying greater generativity. A factor analysis revealed that the same factors identified in Murayama et al. [4] were extracted (refer to Open Science Framework [OSF], https://osf.io/unyh5/).

Life satisfaction was measured using the satisfaction with life scale [20]. This involved participant rating 5 items, one of which was “I am satisfied with my life,” on a 7-point Likert scale. The scale ranged from 1, representing strong disagreement, to 7, indicating strong agreement. The average score was used (\(\alpha = 0.83\)), with higher scores signifying greater life satisfaction. In terms of demographic variables, participants were queried about their educational background in terms of years, their age, and their gender.

Procedure and Analysis
Participants were briefed about the study and gave their consent to participate. They then responded to questions concerning their perceptions of older adults, generativity, life satisfaction, and demographic information. The statistical software R ver. 4.1.0 (The R Foundation) was utilized for the analysis. Multiple regression analyses were performed using the perceptions of older adults, life satisfaction, and demographic variables as independent variables, and the sub-categories of generativity (generative action, concern, and accomplishment) as dependent variables. The questionnaire items, data used in the analysis, R codes, and histograms for each indicator can be accessed on the OSF.

Results
Summary statistics for each indicator are presented in Table 1. Participants who held more positive perceptions of older adults demonstrated more generative actions, concerns, and accomplishments, respectively (\(r = 0.27, 95\% \text{ CI}, 0.08–0.44, p = 0.006; r = 0.24, 95\% \text{ CI}, 0.05–0.42, p = 0.01; r = 0.21, 95\% \text{ CI}, 0.02–0.39, p = 0.04\)). Additionally, participants who reported higher life satisfaction also showed more generative actions, concerns, and accomplishments, respectively (\(r = 0.38, 95\% \text{ CI}, 0.20–0.54, p < 0.001; r = 0.32, 95\% \text{ CI}, 0.13–0.49, p = 0.001; r = 0.46, 95\% \text{ CI}, 0.29–0.60, p < 0.001\)). The correlation coefficients between the variables for groups with higher and lower average years of education (\(M = 14.03\)) were included in the OSF. Consequently, correlations similar to those in the main analysis were found in both groups.

Multiple regression analyses were performed using

<table>
<thead>
<tr>
<th>No.</th>
<th>Mean±SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.39±0.98</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>2</td>
<td>3.41±0.83</td>
<td>0.55**</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3</td>
<td>1.99±1.05</td>
<td>0.64**</td>
<td>0.46**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>3.24±0.44</td>
<td>0.27**</td>
<td>0.24*</td>
<td>0.21*</td>
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<tr>
<td>5</td>
<td>3.12±0.55</td>
<td>−0.01</td>
<td>−0.05</td>
<td>−0.16</td>
<td>−0.35**</td>
<td></td>
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</tr>
<tr>
<td>6</td>
<td>4.32±1.00</td>
<td>0.38**</td>
<td>0.32**</td>
<td>0.46**</td>
<td>0.24*</td>
<td>−0.35**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>14.03±2.53</td>
<td>0.07</td>
<td>0.14</td>
<td>−0.01</td>
<td>0.05</td>
<td>0.04</td>
<td>0.06</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>71.68±5.15</td>
<td>−0.06</td>
<td>0.02</td>
<td>−0.14</td>
<td>0.06</td>
<td>−0.12</td>
<td>−0.07</td>
<td>−0.15</td>
</tr>
</tbody>
</table>

SD, standard deviation; 1, generative action; 2, generative concern; 3, generative accomplishment; 4, positive perception; 5, negative perception; 6, life satisfaction; 7, years of education; 8, age.

\(p<0.05, \quad **p<0.01\).
positive and negative perceptions of the elderly, life satisfaction, and demographic variables as independent variables, with the sub-categories of generativity serving as dependent variables (Table 2). The results indicated that participants who held more positive perceptions of older adults demonstrated more generative actions and concerns ($\beta = 0.25$, 95% CI, 0.06–0.44, $p = 0.01$; $\beta = 0.21$, 95% CI, 0.004–0.41, $p = 0.046$). Conversely, participants with more negative perceptions of older adults showed more generative actions ($\beta = 0.22$, 95% CI, 0.02–0.43, $p = 0.03$). Participants who reported higher levels of life satisfaction exhibited more generative actions, concerns, and accomplishments ($\beta = 0.38$, 95% CI, 0.19–0.58, $p < 0.001$; $\beta = 0.31$, 95% CI, 0.11–0.51, $p = 0.003$; $\beta = 0.43$, 95% CI, 0.23–0.62, $p < 0.001$). A post-hoc power analysis was performed using the adjusted coefficient of determination (adjusted $R^2$) in multiple regression analyses ($N_{\text{Sample}} = 100$, $N_{\text{Parameter}} = 7$, $\alpha = 0.05$), which yielded the following results: $\beta_{\text{power}} = 0.95$ (generative action), $\beta_{\text{power}} = 0.75$ (generative concern), and $\beta_{\text{power}} = 0.95$ (generative accomplishment). While these are considered to be acceptable levels, the limitation caused by the small $R^2$ is discussed below.

Discussion

In this study, we surveyed older Japanese adults to explore the relationship between positive and negative perceptions of older adults and generativity, encompassing generative action, concern, and accomplishment [4]. The results suggested that, even when accounting for life satisfaction and demographic factors, participants who held more positive views of older adults were more likely to exhibit increased generative actions and concerns. Conversely, those with more negative perceptions of older adults demonstrated a higher level of generative actions.

Participants with more positive perceptions of older adults tended to exhibit better mental health [8–10] and a strong sense of pride in their association with the older adult social group, as well as in their personal accomplishments. These individuals are often more inclined to share their experiences and knowledge with younger generations and are more likely to take proactive steps to do so. Interestingly, while only life satisfaction influenced generative accomplishment, both life satisfaction and positive perceptions of older adults showed a positive correlation ($r = 0.24$) (Table 1). These results suggest that enhancing positive perceptions of older adults among them could potentially boost the sub-categories of generativity.

Meanwhile, participants with more negative perceptions of older adults demonstrated higher levels of generative behavior. This may be because those with negative views of older adults are more likely to use their own past and current behaviors as cautionary tales for younger generations. However, the correlation between negative perceptions of older adults and generativity was small (Table 1), so this finding should be interpreted with caution. Furthermore, given the moderate negative correlation between positive and negative perceptions of older adults ($r = -0.35$ [21]), it may be possible to enhance positive perceptions of older adults without necessarily reducing negative ones. Among the ambivalent stereotypes of old age [11,12], focusing on increasing positive perceptions of older adults, rather than reducing negative ones, could be an effective strategy for boosting generativity among older adults.

Despite the above findings, our study has 4 major limitations. First, 90% of our participants were female. While we accounted for gender in our analysis, it remains uncertain whether the same results would be observed in an older male population. Previous studies have indicated that generativity tends to be higher among older males than older females [4,22], suggesting that the relationship between perceptions of older adults and generativity may differ by gender. It is worth noting that when we conducted the analysis using only data

Table 2. Results of multiple regression analyses for the sub-categories of generativity

<table>
<thead>
<tr>
<th></th>
<th>Action</th>
<th>Concern</th>
<th>Accomplishment</th>
<th>VIF</th>
</tr>
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<tbody>
<tr>
<td>Positive perception</td>
<td>$0.25 (0.06$ to 0.44)$^*$</td>
<td>$0.21 (0.004$ to 0.41)$^*$</td>
<td>$0.13 (-0.07$ to 0.32)</td>
<td>1.16</td>
</tr>
<tr>
<td>Negative perception</td>
<td>$0.22 (0.02$ to 0.43)$^*$</td>
<td>$0.14 (-0.07$ to 0.35)</td>
<td>$0.03 (-0.17$ to 0.23)</td>
<td>1.28</td>
</tr>
<tr>
<td>Life satisfaction</td>
<td>$0.38 (0.19$ to 0.58)$^{**}$</td>
<td>$0.31 (0.11$ to 0.51)$^{**}$</td>
<td>$0.43 (0.23$ to 0.62)$^{**}$</td>
<td>1.19</td>
</tr>
<tr>
<td>Years of education</td>
<td>$0.03 (-0.15$ to 0.22)</td>
<td>$0.13 (-0.06$ to 0.32)</td>
<td>$-0.06 (-0.24$ to 0.12)</td>
<td>1.03</td>
</tr>
<tr>
<td>Age</td>
<td>$-0.02 (-0.21$ to 0.16)</td>
<td>$0.06 (-0.13$ to 0.26)</td>
<td>$-0.13 (-0.31$ to 0.06)</td>
<td>1.05</td>
</tr>
<tr>
<td>Sex (0 = male, 1 = female)</td>
<td>$-0.15 (-0.33$ to 0.03)</td>
<td>$-0.11 (-0.30$ to 0.08)</td>
<td>$-0.07 (-0.25$ to 0.12)</td>
<td>1.02</td>
</tr>
<tr>
<td>Adjusted $R^2$</td>
<td>$0.19 (0.07$ to 0.32)$^{**}$</td>
<td>$0.12 (0.01$ to 0.23)$^{**}$</td>
<td>$0.19 (0.07$ to 0.32)$^{**}$</td>
<td>1.01</td>
</tr>
</tbody>
</table>

$\beta$, standardized regression coefficients; CI, confidence interval; VIF, variance inflation factor.

*$p<0.05$, **$p<0.01$. 

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from women, the results were consistent with those in the main analysis (see OSF). Second, all participants in this study were Japanese. Therefore, the impact of cultural differences on the relationship between perceptions of older adults and generativity warrants further investigation in future research. Third, our participant pool was limited to those enrolled in a health program that trains volunteers to read picture books to children. Consequently, their health status and levels of generativity might be higher than those of the general older population. However, the average scores for the sub-categories of generativity in this study were not excessively high compared to the values in Murayama et al. [4], where participants were randomly selected older individuals aged 65 to 84 years from an urban area in Japan. Thus, it would be unjust to claim that our participants significantly deviate from the general older population. Finally, the coefficients of determination in our multiple regression analyses were relatively small. Prior research has identified agentic and communal goal attainment [23] and psychological well-being [17,24] as being strongly associated with generativity. Therefore, it is necessary to reevaluate our findings after controlling for these variables.

Conclusion

The findings of this study indicate that enhancing the positive perceptions of the ingroup (i.e., older adults) could potentially boost generativity. Concurrently, it has been documented that sharing their experiences and wisdom with younger generations can contribute to the preservation of older adults’ physical and mental health. We anticipate a virtuous cycle where healthier older adults foster more positive perceptions of themselves, thereby increasing generativity. While a comprehensive interpretation of our data is challenging, it would be beneficial to further explore the interconnections among perceptions of older adults, generativity, and health status in older citizens. The heightened generativity in older adults could also promote intergenerational interaction, enabling younger generations to learn from the life experiences of their elders. We are eager to undertake empirical studies that concentrate on the generativity of older adults.

Notes

Ethics Approval

The ethics committee of Tokyo Metropolitan Institute for Geriatrics and Gerontology approved this study and performed in accordance with the principles of the Declaration of Helsinki. Informed consent was obtained from the participants.

Conflicts of Interest

The authors have no conflicts of interest to declare.

Funding

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Availability of Data

The data that support the findings of this study are openly available in the Open Science Framework (OSF) repository (https://osf.io/unyh5/).

Authors’ Contributions

Conceptualization: YS, TT; Data curation: all authors; Formal analysis: YS; Funding acquisition: HS; Investigation: YS, TT; Methodology: YS; Project administration: HS; Supervision: HS; Writing–original draft: YS; Writing–review & editing: all authors. All authors read and approved the final manuscript.

Additional Contributions

The authors acknowledge the continued efforts in the management of survey by Senior Citizen Activities Promotion Section in Welfare Division of Hachioji City in Tokyo, Japan. The authors also thank members of the research team for social participation and healthy aging in Tokyo Metropolitan Institute for Geriatrics and Gerontology.

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