Effects of a Gerontechnology-Based Life-Planning Simulation: User Perceptions, Affective Responses, and Usage Intentions C.-H. Choi[a], Y.-J. Choi[b], W.-J. Shim[a c]. *Gerontechnology 25*(s)

Purpose According to Statistics Korea (2023), the nation entered a super-aged society in 2025, with adults aged 65 and older accounting for 20.3% of the total population. Moreover, middle-aged adults aged 40–59 now represent 46.9% of the population, underscoring the increasing need for systematic later-life planning to achieve a healthy and meaningful long life. Although gerontechnology has considerable potential to enhance daily functioning, independence, and quality of life in later years, these technological possibilities are rarely incorporated into conventional life-planning processes. Consequently, most life planning remains declarative and does not adequately reflect realistic aging trajectories or the transformative impact of emerging gerontechnology. To bridge this gap, Shim (2025) developed Aging Sage, a gerontechnology-based life-planning simulation that enables individuals to visualize age-related functional changes, establish life goals and lifestyle plans across aging stages, and explore appropriate gerontechnology applications. This simulation was developed on the premise that applying gerontechnology in alignment with an individual's stage of aging can lead to meaningful improvements in later-life experiences. Accordingly, this study examines how participation in the simulation influences later-life awareness, gerontechnology awareness, emotional responses, usability, and usage intention. In addition, differences by country (Korea/Singapore) and age group were analyzed. **Method** From March to October 2025, adults who independently decided whether to participate and completed the survey of their own free will took part in the life-planning simulation. Each session was conducted either 1:1 or 1:N with a trained Gerontech Planner, who facilitated reflection on aging changes and gerontechnology applications over approximately one hour. The survey consisted of 21 items assessing later-life awareness, gerontechnology awareness, usability, affect based on the PANAS framework, and usage intention derived from Fishbein's behavioral intention theory. Statistical analyses were performed using SPSS 25.0, including reliability testing, descriptive statistics, exploratory factor analysis (EFA), independent-samples t-tests, ANOVA, and regression analysis. **Results and Discussion** A total of 101 valid responses (out of 106 participants) were analyzed (31.7% men, 68.3% women; ages ranging from under 40 to over 70; 87.1% Korean and 12.9% Singaporean). After the simulation, participants reported high levels of later-life awareness (M = 4.24) and gerontechnology awareness (M = 4.29). Positive affect increased (M = 3.98), while negative affect remained low (M = 2.27), indicating an emotionally safe and constructive experience. Usability (M = 4.15) and usage intention (M = 4.23) were also high. The overall scale exhibited excellent internal consistency (Cronbach's α = .900; standardized α = .920). EFA (KMO = .906) identified six factors explaining 82.28% of the total variance. Regression analysis showed that usage intention was significantly predicted by usability (β = .367, $p < .001$) and positive affect (β = .302, $p = .003$), explaining 77.5% of the variance. No significant differences were found by gender or age group, although descriptive trends indicated gradual increases in later-life awareness and negative affect with age. A cross-national comparison revealed higher gerontechnology awareness and usability among Korean participants, while Singaporean participants showed higher negative affect. Despite the modest sample size, the findings suggest that the simulation effectively enhances gerontechnology awareness and motivates later-life planning. Furthermore, the results provide preliminary evidence supporting the underlying premise of the simulation—that applying gerontechnology in alignment with an individual's stage of aging may lead to meaningful improvements in later-life experiences. Future research should employ more balanced cross-national samples and use multiple repeated measurements across different time points to examine the process and sustainability of these changes.

References

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Table 1. Reliability and Descriptive Statistics for the Study Variables

Variable	Cronbach's α	Standardized α	Items	N (Valid)	Mean	SD	Variance
Late-Life Awareness & Planning	.918	.918	5	101	4.238	.623	.388
GT Awareness	.899	.901	3	101	4.287	.609	.371
Positive Affect Increase	.871	.876	3	64	3.979	.623	.388
Negative Affect Increase	.884	.888	3	64	2.271	.912	.832
Simulation Usability	.867	.868	3	101	4.149	.667	.446
Simulation Usage Intention	.895	.898	4	101	4.228	.610	.373

Figure 1. Toolkit for Gerontechnology-based life planning simulation and examples of participant results.