Psychological Medicine

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Impact of a government-led employment program on the onset of depressive symptoms and suicidal ideation in older adults: A nationwide longitudinal study

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Original Article

Cite this article: Choi, E., Choi, S., & Jang, S.-Y. (2025). Impact of a government-led employment program on the onset of depressive symptoms and suicidal ideation in older adults: A nationwide longitudinal study. *Psychological Medicine*, **55**, e359, 1–8
https://doi.org/10.1017/S0033291725102560

Received: 08 August 2025
Revised: 28 October 2025
Accepted: 04 November 2025

Keywords:
aged; depression; employment; mental health; social participation; suicidal ideation

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Abstract

Background. As populations age rapidly, understanding the psychological benefits of sustained employment has become increasingly important. In South Korea, where the suicide rate among older adults is one of the highest among Organisation for Economic Co-operation and Development (OECD) countries, identifying modifiable social determinants, such as employment, may inform effective prevention strategies.

Methods. This retrospective cohort study used data from the Korean Welfare Panel Study (2009–2024), a nationally representative longitudinal survey. Individuals with depressive symptoms or suicidal ideation at baseline were excluded. The main exposure was participation in a government-led senior employment program. We employed discrete-time survival analysis using a generalized linear model with a complementary log–log link function, which appropriately handled the interval-censored structure of the panel data.

Results. Older adults who participated in the employment program had a significantly lower risk of developing depressive symptoms (adjusted hazard ratio [HR] = 0.76, 95% confidence interval [CI]: 0.67–0.86) and suicidal ideation (adjusted HR = 0.60, 95% CI: 0.45–0.81) compared to those who did not participate. Subgroup analyses revealed that the strength of the association was particularly strong among individuals aged ≥80 years, those with chronic illness, poor self-rated health, and those who were previously or never married.

Conclusion. Structured government-supported employment may mitigate the risk of depressive symptoms and suicidal ideation in later life. These findings support the potential of senior employment programs as effective mental health promotion and suicide prevention strategies for aging populations.

Introduction

Recently, population aging has significantly increased across OECD countries. The old-to-working age ratio increased from 21 per 100 in 1994 to 33 in 2024 and is projected to reach 55 by 2054 (OECD, 2025). According to the 2019 World Health Organization (WHO) Global Health Estimates, ~27.2% of suicide deaths occur among individuals aged ≥60 years (WHO, 2025a). South Korea may become a super-aged society by 2025, South Korea may become a super-aged society by 2025, with adults aged ≥65 years comprising >20% of the total population (OECD, 2024). The country reported a suicide mortality rate of 24.8 per 100,000 population in 2021 (OECD, 2024), which increased to 27.3 per 100,000 in 2023 (Statistics Korea, 2024), more than twice the OECD average of 11.0 per 100,000 in 2021 (OECD, 2024), making it the highest among OECD countries. Notably, the suicide rate among adults aged ≥65 years was 39.9 per 100,000 in 2022 (Statistics Korea, 2024), which represents the highest elderly suicide rate among all OECD member states (OECD, 2024).

The causes of suicide are multifactorial and involve a complex interplay of social, cultural, biological, psychological, and environmental factors (WHO, 2025b). In later life, social isolation and loneliness, which affect approximately one in four older adults, are significant risk factors for mental health problems (Teo et al., 2023). Poor living conditions, chronic physical illness, and inadequate access to quality care and support services increase the risk of depression and anxiety in old age (WHO, 2025a). A previous systematic review and meta-analysis reported that suicidal ideation or depression is a significant predictor of suicide attempts and mortality (Riera-Serra et al., 2024). Therefore, mental health and its related symptoms in later life should not be overlooked.

Strategies to promote mental health in older adults aim to foster healthy aging by creating physical and social environments that enhance well-being and support meaningful engagement even as functional abilities decline (WHO, 2025a). Previous studies demonstrated significant associations

between employment in later life and improved mental health and well-being (Baxter, Blank, Cantrell, & Goyder, 2021; Choi et al., 2021; Fujii et al., 2025; Kim, Jang, & Cho, 2023; Silver, Dass, & Laporte, 2020; Takase et al., 2024; Zhu, Ma, Ding, & Xia, 2024). Employment in later life offers multiple advantages to older adults. Particularly, they provide financial and meaningful opportunities for continuing social participation. Older adults with higher levels of social engagement report fewer depressive symptoms and enhanced psychological well-being, highlighting the importance of community-based efforts to strengthen their social networks (Fancourt & Steptoe, 2018). Through shared work environments, older adults can maintain and expand their social connections to improve their mental health in later life.

Although a substantial body of research has established the positive effects of older adults' employment, rigorous evaluations of government-led employment programs, particularly those employing causal inference designs, remain scarce. This study used data from a nationally administered panel survey that captured participants' actual experiences in a national senior employment program. Leveraging a discrete-time survival analysis, this study strengthens the causal inference on the onset of mental health outcomes over time, contributing meaningfully to evidence-based policy development in aging societies. Thus, this study sought to analyze changes in the risk of depressive symptoms and suicidal ideation over time following participation in a senior employment program, compared to a control group that did not participate in the program.

Methods

Study sample and dataset

This study draws on data from the Korean Welfare Panel Study (KoWEPS; 2009–2024), a nationally representative longitudinal survey of South Korean households conducted annually by the Korea Institute for Health and Social Affairs (KIHASA). Trained interviewers administered structured questionnaires through face-to-face interviews at respondents' residences.

The KoWEPS was established to monitor changes in poverty, income, and employment among low-income and general households in South Korea. It provides reliable longitudinal data for evaluating welfare needs, assessing policy effectiveness, and supporting evidence-based social policy development. The baseline sample consisted of 7,072 households drawn from the 2006 National Survey of Living Conditions, based on 90% of enumeration districts from the 2005 Census. To better capture welfare needs, low-income households (≤60% of the national median income) were intentionally oversampled (3,500 low-income and 3,500 general households). To maintain representativeness, a refreshment sample of 1,800 households was added in Wave 7 (2012) using the same stratification by income and region (KIHASA, 2006; KIHASA, 2024).

Although the KoWePS was initiated in 2006, information on older adults' labor force participation was first collected in the fourth wave (2009), and data on suicidal ideation became available beginning in the seventh wave (2012). Therefore, this analysis was restricted to waves 4–19 (2009–2024). The dataset and accompanying documentation are accessible on the official KoWePS website (https://www.koweps.re.kr:442/main.do).

This study examined two separate mental health outcomes – depressive symptoms and suicidal ideation – using the same longitudinal dataset but with different baseline years and inclusion criteria. For the analysis of *depressive symptoms*, we identified 10,018 individuals aged ≥65 years who completed the baseline survey in 2009. After excluding those who did not respond to questions on employment or depressive symptoms, 9,686 participants remained. Among them, 8,456 individuals who had no depressive symptoms at baseline and had never participated in a senior employment program were included in the final analysis. For the analysis of *suicidal ideation*, we identified 9,374 participants aged ≥65 years who completed the survey in 2012. After excluding those with missing information on employment or suicidal ideation, 9,095 participants remained. Of these, 8,766 individuals with no suicidal ideation at baseline and no history of program participation were included in the analysis.

Outcome variable

The dependent variables were the onset of depressive symptoms and suicidal ideation. Incident cases were identified throughout the follow-up period (2010–2024) if participants exceeded the threshold score on the 11-item Center for Epidemiologic Studies Depression Scale (CES-D-11), suggesting the emergence of depressive symptoms. The KOWEPS administered the 11-item Korean version of the CES-D-11, adapted from the original 20-item Center for Epidemiologic Studies Depression Scale (CES-D-20) (Cho & Kim, 1998; Kohout, Berkman, Evans, & Cornoni-Huntley, 1993; Radloff, 1977). This abbreviated version is psychometrically comparable to the full CES-D-20 (Gellis, 2010; Kohout et al., 1993). To align with the CES-D-20 scoring conventions, the CES-D-11 total scores were rescaled by multiplying by 20/11. In this study, a score of ≥16 on the CES-D-11 was considered indicative of clinically relevant depressive symptoms (Park & Kim, 2011; Roberts, Rhoades, & Vernon, 1990).

Suicidal ideation was assessed using the question, 'During the past year, have you ever seriously thought about committing suicide?' Participants who responded 'yes' were classified as having suicidal ideation.

Explanatory variable

The independent variable was participation in the senior employment program, with participants categorized as either participants (yes) or nonparticipants (no) for each survey year. The senior employment program is a government-led initiative designed to promote income security, health improvements, and social engagement among older adults. The program provides part-time, socially meaningful work opportunities tailored to the capabilities and experiences of older adults. It primarily targets individuals aged ≥65 years, engaging them in service-oriented roles, such as community care, safety monitoring, digital support, and public administration assistance. The participants typically worked up to 60 h/month (no >15 h/week) and received compensation in accordance with national standards. Employment conditions were adjusted to accommodate the physical capacities of older adults, prohibiting overtime, night shifts, or work >8 h/day (Ministry of Health and Welfare, 2024).

Covariates

We selected diverse covariates related to depressive symptoms and suicidal ideation (Conwell et al., 2010; Manthorpe & Iliffe, 2010). We measured the covariates for each wave and grouped them according to socioeconomic status and health, environmental, and health-related variables. We included household types (low-income vs. general) as classified by the KoWePS sampling

https://doi.org/10.1017/S0033291725102560 Published online by Cambridge University Press

framework to reflect welfare-targeted socioeconomic status beyond income or wealth levels. Education level was categorized as middle school or lower and high school or higher. Disabilities, chronic ailments, problematic drinking, and smoking status were classified as health-related variables. The presence of chronic disease was defined as the administration of medication for at least 3 months. Marital status and area of residence were classified as environmental variables. Marital status was categorized as (1) currently married, (2) previously married, including separation by death and divorce, and (3) unmarried.

Statistical analysis

To identify first-onset events, all subsequent observations following the initial development of depressive symptoms and suicidal ideation were excluded. Depressive symptoms, suicidal ideation, and all the covariates were measured annually and treated as time-varying variables, allowing for multiple transitions. We used a generalized linear model with a complementary log–log link function to conduct a discrete-time survival analysis and estimate hazard ratios (HRs) and 95% confidence intervals (CIs) for the onset of depressive symptoms and suicidal ideation in older adults (Allison, 2010). Discrete-time survival analysis was used for modeling the timing of event occurrence, as data are collected at fixed intervals and exact event times are not available (Allison, 2010; Singer & Willett, 2003). The initial analytical model, which included only age and sex, served as the baseline model for the stepwise adjustment. To examine the impact of potential psychosocial stressors on mental health outcomes, additional covariates were included in successive models. Comparisons across the models enabled the assessment of changes in the magnitude and statistical significance of the associations. The fully adjusted model incorporated stressors related to socioeconomic status, health, and environment. Crude incidence rates and 95% CI for first-onset depressive symptoms and suicidal ideation were calculated using senior employment status and calendar year. The incidence rate was defined as the number of new cases (events) per 1,000 person-years. All statistical analyses were performed using SAS (version 9.4 M6; SAS Institute Inc., Cary, NC, USA).

Results

The baseline characteristics of older adults in the depressive symptoms (N = 38,046; 2,282 participants and 35,764 nonparticipants) and suicidal ideation (N = 54,827; 4,252 participants and 50,575 nonparticipants in the senior employment program) cohorts are presented in Table 1. In the analysis of depressive symptoms, 9,166 older adults (1,038 participants and 8,128 nonparticipants in the senior employment program) contributed 38,674 person-observations. On average, participants and nonparticipants were followed for 2.8 and 4.4 years, respectively. For the analysis of suicidal ideation, 9,835 older adults (1,337 participants and 8,498 nonparticipants) were included, contributing to 54,827 observations. The mean follow-up duration was 3.2 years for participants and 6.0 years for nonparticipants. Across both samples, participants in the senior employment program were mostly women, aged ≥70 years, belonged to low-income households, had lower educational attainment, and reported better perceived health than nonparticipants. They were less likely to report disability, but more likely to report chronic conditions.

The crude incidence rates for first-onset depressive symptoms and suicidal ideation stratified by senior employment status are shown in Tables 2 and 3, stratified by senior employment status. Across the follow-up period, the incidence rates were consistently lower among participants than among nonparticipants, particularly in the later years.

In the crude model (Table 4), participation in the senior employment program was associated with a 12% (HR = 0.88, 95% CI: 0.78–1.00, p = 0.04) and 38% (HR = 0.62, 95% CI: 0.46–0.82, p = 0.001) reduced risk of depressive symptoms and suicidal ideation, respectively. After adjusting for demographic, environmental, socioeconomic, and health-related covariates, the associations remained statistically significant and became stronger in the fully adjusted model; a 24% (HR = 0.76, 95% CI: 0.67–0.86, p < 0.001) and 40% (HR = 0.60, 95% CI: 0.45–0.81, p = 0.001) reduced hazard of depressive symptoms and suicidal ideation, respectively. These protective effects were consistently observed across all progressive models, indicating a robust and stable association between program participation and reduced mental health risks among older adults.

Subgroup analyses of the association between senior employment and risk of first-onset depressive symptoms and suicidal ideation are presented in Table 5. The effect of senior employment with depressive symptoms was consistently observed across several subgroups, although the strength of association varied. Notably, the strength of association between participation in the senior employment program and onset of depressive symptoms was stronger and statistically significant among individuals with poor self-rated health (HR = 0.68, 95% CI: 0.57–0.81, p = 0.02). For suicidal ideation, the risk reduction associated with senior employment was evident only among individuals who were previously or never married (HR = 0.48, 95% CI: 0.32–0.73), with a significant interaction effect observed by marital status (p = 0.046).

Discussion

By leveraging discrete-time survival analysis on nationally representative longitudinal data, this study provides robust evidence of the association between participation in a government-led senior employment program and reduced risk of depressive symptoms and suicidal ideation among older adults. These methodological and conceptual strengths enhance the credibility of the findings, thereby informing evidence-based mental health and aging policies in rapidly aging societies. This study examined the effects of participation in a government-led senior employment program on the first-onset risk of depressive symptoms and suicidal ideation. The participants had a lower risk of developing depressive symptoms and suicidal ideation over time, even after adjusting for socioeconomic, health-related, and environmental factors. Therefore, higher work expectations are associated with reduced depressive symptoms and passive suicidal ideation (Mezuk, Dang, Jurgens, & Smith, 2022), and social activities can decrease depressive symptoms (Choi et al., 2021; Silver et al., 2020). Government-led senior employment is only a working program for older adults in the community. This program provides an opportunity to be involved in regular work and be paid for their contributions. For older adults, employment (Baxter et al., 2021; Fujii et al., 2025) and social engagement (Johnson & Mutchler, 2014; von Humboldt & Leal, 2014) are important components of positive aging.

Subgroup analysis revealed a strong association between senior employment program participation and reduced suicidal ideation only among older adults who were previously or never married. Previously, living alone in later life has been associated with increased risk of depression (Baek, Kim, Song, & Kim, 2023; Van den Brink et al., 2018) and suicide ideation (Chang, Chan, & Yip, 2017; McClelland et al., 2020). Considering that marital status is

https://doi.org/10.1017/S0033291725102560 Published online by Cambridge University Press

Table 1. Baseline characteristics of the participants

	Depressive symptoms				Suicidal ideation			
	Yes		No		Yes		No	
Variables	No. of observation *N* = 2,282	%	No. of observation *N* = 35,764	%	No. of observation *N* = 4,252	%	No. of observation *N* = 50,575	%
Sex								
Male	1,042	35.8	16,887	47.2	1,132	26.6	20,067	39.7
Female	1,868	64.2	18,877	52.8	3,120	73.4	30,508	60.3
Age (years)								
65–69	475	16.3	12,883	36.0	541	12.7	12,695	25.1
70–79	1,739	59.8	17,344	48.5	2,489	58.5	24,882	49.2
80 and older	696	23.9	5,537	15.5	1,222	28.7	12,998	25.7
Household income								
High	608	20.9	15,986	44.7	807	19.0	19,118	37.8
Low	2,302	79.1	19,778	55.3	3,445	81.0	31,457	62.2
Education								
≤Middle school	1,799	61.8	19,022	53.2	2,873	67.6	30,200	59.7
≥High school	1,111	38.2	16,742	46.8	1,379	32.4	20,375	40.3
Disability								
No	2,522	86.7	30,942	86.5	3,654	85.9	42,515	84.1
Yes	388	13.3	4,822	13.5	598	14.1	8,060	15.9
Chronic disease								
No	270	9.3	4,920	13.8	306	7.2	5,221	10.3
Yes	2,640	90.7	30,844	86.2	3,946	92.8	45,354	89.7
Problem drinking								
No	2,744	94.3	32,088	89.7	4,071	95.7	46,818	92.6
Yes	166	5.7	3,676	10.3	181	4.3	3,757	7.4
Current smoker								
No	2,763	94.9	32,093	89.7	4,069	95.7	46,111	91.2
Yes	147	5.1	3,671	10.3	183	4.3	4,464	8.8
Marital status								
Yes	1,733	59.6	25,598	71.6	2,059	48.4	30,652	60.6
No	1,177	40.4	10,166	28.4	2,193	51.6	19,923	39.4
Residential area								
Rural	895	30.8	10,520	29.4	1,259	29.6	14,862	29.4
Urban	2,015	69.2	25,244	70.6	2,993	70.4	35,713	70.6
Perceived health status								
Bad	856	29.4	11,390	31.8	1,469	34.5	20,153	39.8
Good	2,054	70.6	24,374	68.2	2,783	65.5	30,422	60.2

Note: The number of observations reflects total person-wave observations across years, not the number of unique individuals. The analytic sample includes **38,046 observations** for depressive symptom analysis (waves 4–19) and **54,827 observations** for suicidal ideation analysis (waves 7–19), as reported in the main text.
For the analysis of depressive symptoms, a total of 9,166 older adults (1,038 participants and 8,128 nonparticipants in the senior employment program) contributed 38,674 person-observations. For the analysis of suicidal ideation, 9,835 older adults (1,337 participants and 8,498 nonparticipants) were followed, contributing to 54,827 person-observations.

often associated with living arrangements, such programs may play a mitigating role for those living under conditions of social isolation. Self-perceived health status appeared to modify the effects of employment on depressive symptoms. Additionally, among those with poor self-rated health, participation in the employment program was significantly associated with a lower risk of depressive symptoms compared with those who did not participate. Self-rated health is a reflection of physical status and a valid predictor of

https://doi.org/10.1017/S0033291725102560 Published online by Cambridge University Press

Table 2. Crude incidence rate of first-onset depressive symptoms

Calendar year	Senior employment			Non-senior employment		
	No. of observation (person-year)	Events	Incidence rate per 1,000	No. of observation (person-year)	Events	Incidence rate per 1,000
2009	67	10	149.3	2,324	491	211.3
2010	53	14	264.2	1,908	287	150.4
2011	100	13	130.0	2,963	444	149.8
2012	104	16	153.8	2,688	367	136.5
2013	105	16	152.4	2,404	450	187.2
2014	101	10	99.0	2,107	238	113.0
2015	102	8	78.4	1,990	204	102.5
2016	112	6	53.6	1,868	149	79.8
2017	152	4	26.3	1,833	180	98.2
2018	169	13	76.9	1,742	154	88.4
2019	171	10	58.5	1,701	158	92.9
2020	203	23	113.3	1,637	132	80.6
2021	526	75	142.6	2,988	410	137.2
2022	474	44	92.8	2,745	238	86.7
2023	471	34	72.2	2,584	204	78.9
Total	2,910	296	101.7	35,764	4,106	114.8

Table 3. Crude incidence rate of first-onset suicidal ideation

Calendar year	Senior employment			Non-senior employment		
	No. of observation (person-year)	Events	Incidence rate per 1,000	No. of observation (person-year)	Events	Incidence rate per 1,000
2012	75	4	53.3	4,372	179	40.9
2013	100	1	10.0	4,040	209	51.7
2014	127	4	31.5	3,890	100	25.7
2015	158	8	50.6	3,741	81	21.7
2016	185	2	10.8	3,591	66	18.4
2017	272	3	11.0	3,472	55	15.8
2018	295	7	23.7	3,353	52	15.5
2019	343	4	11.7	3,207	39	12.2
2020	393	2	5.1	3,157	44	13.9
2021	744	1	1.3	4,511	23	5.1
2022	760	4	5.3	4,480	49	10.9
2023	800	9	11.3	4,344	46	10.6
Total	4,252	49	11.5	50,575	943	18.6

mental health (Ambresin et al., 2014). Individuals with poor self-rated health may experience a greater sense of hopelessness and functional decline. Thus, senior employment programs may be a compensatory mechanism to mitigate emotional distress in individuals who are at elevated risk. The association between senior employment and suicidal ideation was pronounced among the oldest-old (aged ≥80 years), although it did not reach statistical significance. Oldest-old individuals often experience rapid declines in their physical, emotional, and social capacities due to aging (Moormann et al., 2024). Particularly, the suicide rate among individuals aged ≥80 years in Korea was 60.6 per 100,000 in 2022, which was substantially higher than that of other age groups. Hence, senior employment programs may offer a pathway to support mental well-being during this vulnerable stage of life. Because of the limited number of participants aged ≥80 years, the statistical power may have been insufficient. Future research is

https://doi.org/10.1017/S0033291725102560 Published online by Cambridge University Press

Table 4. The association between the senior employment program and first-onset depressive symptoms and suicidal ideation by progressive adjustment

Models	Depressive symptoms			Suicidal ideation		
	HR	95% CI	*p*-value	HR	95% CI	*p*-value
Crude model	0.88	0.78 - 1.00	0.04	0.62	0.46 - 0.82	0.001
Reference model[a] (Model 1) = Crude model + Sex + Age	0.79	0.69 - 0.89	0.0002	0.60	0.45 - 0.80	0.001
Model 2[b] = Reference model + Environmental variables	0.77	0.67 - 0.87	<.001	0.58	0.43 - 0.78	0.002
Model 3[c] = Reference model + Health-related variables	0.84	0.74 - 0.95	0.01	0.65	0.49 - 0.87	0.004
Model 4 = Reference model + Environmental + Health-related variables	0.81	0.72 - 0.93	0.002	0.64	0.48 - 0.85	0.002
Model 5[d] = Reference model + Socioeconomic variables	0.72	0.63 - 0.81	<.001	0.55	0.41 - 0.73	<.001
Model 6 = Reference model + Socioeconomic + Environmental variables	0.70	0.62 - 0.80	<.001	0.54	0.40 - 0.72	<.001
Model 7 = Reference model + Socioeconomic + Health-related variables	0.78	0.69 - 0.88	<.001	0.61	0.46 - 0.82	0.001
Full model[e] = Reference model + Socioeconomic + Health-related + Environmental variables	0.76	0.67 - 0.86	<.001	0.60	0.45 - 0.81	0.001

Note: Estimates derived from discrete-time survival analysis using generalized linear model (GLM).
Abbreviations: CI, confidence interval; HR, hazard ratio.
[a]The crude model refers to the pure relationship between *X* and *Y* without any adjustments.
[b]Environmental variables refer to factors such as region and family composition, which represent the surrounding environment of individuals.
[c]Health-related variables include factors such as problem drinking consumption, current smoking status, chronic disease, disability, and self-perceived health status.
[d]Socioeconomic variables encompass factors like household income and education.
[e]The full model refers to the results obtained after adjusting for all possible associated covariates in addition to the crude model.

Table 5. Subgroup analyses of depressive symptoms and suicidal ideation by participation in the senior employment program

Variables	Depressive symptoms			Suicidal ideation		
	HR	95% CI	*p* for interaction	HR	95% CI	*p* for interaction
Sex			0.61			0.64
Male	0.70	0.54 - 0.91		0.67	0.37 - 1.23	
Female	0.78	0.67 - 0.90		0.60	0.43 - 0.83	
Age (years)			0.26			0.24
65 ~ 80	0.77	0.66 - 0.89		0.64	0.47 - 0.89	
80 and over	0.69	0.55 - 0.87		0.41	0.20 - 0.83	
Household income			0.26			0.54
Low	0.74	0.64 - 0.84		0.59	0.43 - 0.80	
High	0.80	0.64 - 1.01		0.72	0.34 - 1.53	
Region			0.67			0.83
Metropolitan area	0.73	0.63 - 0.85		0.60	0.43 - 0.84	
Nonmetropolitan area	0.81	0.64 - 1.01		0.58	0.33 - 1.04	
Marriage status			0.10			0.046
Current married	0.83	0.70 - 0.99		0.80	0.53 - 1.19	
Past married or never	0.70	0.59 - 0.84		0.48	0.32 - 0.73	
Problem drinking			0.69			0.34
No	0.76	0.67 - 0.87		0.59	0.44 - 0.44	
Yes	0.65	0.31 - 1.39		1.02	0.32 - 3.25	
Smoking status			0.42			0.47
Current	0.93	0.55 - 1.59		0.36	0.09 - 1.48	
Former or never	0.75	0.66 - 0.86		0.63	0.46 - 0.84	
Chronic disease			0.15			0.64
No	1.08	0.67 - 1.72		0.70	0.17 - 2.89	
Yes	0.74	0.65 - 0.84		0.60	0.44 - 0.80	

(*Continued*)

https://doi.org/10.1017/S0033291725102560 Published online by Cambridge University Press

Table 5. (*Continued*)

Variables	Depressive symptoms			Suicidal ideation		
	HR	95% CI	*p* for interaction	HR	95% CI	*p* for interaction
Self-perceived status			0.02			0.30
Unhealthy	0.68	0.57 - 0.81		0.69	0.48 - 0.98	
Healthy	0.85	0.71 - 1.02		0.47	0.29 - 0.77	

Abbreviations: CI, confidence interval; HR, hazard ratio.

needed to identify the effects of such interventions in the oldest-old population more clearly.

Notably, higher income levels are positively associated with greater well-being and improved health outcomes (Finkelstein et al., 2022; Li & Managi, 2023). Moreover, a possible explanation for the reduced risk of mental health outcomes is that employment provides a sense of social connectedness, which may be particularly beneficial for older adults. The observed mental health benefits of employment may stem from psychosocial mechanisms, including increased self-esteem, reduced isolation, and enhanced routine alongside tangible factors, such as appropriate financial compensation and role recognition. This study contributes to the growing body of evidence supporting the value of socially and economically integrative interventions in promoting mental health among older adults.

This study has several limitations. Although we used a nationally representative longitudinal dataset and employed discrete-time survival analysis to strengthen causal inference, the observational nature of the study limits definitive causal conclusions. Because program participation was not randomized, unmeasured confounding factors may have influenced mental health outcomes and cannot be completely ruled out. Furthermore, as participation in the senior employment program was voluntary, self-selection bias is also possible; participants may have differed from nonparticipants in terms of motivation and social engagement, which could partly explain the observed associations despite extensive covariate adjustment.

Conclusion

Participation in a government-led senior employment program has been associated with a reduced risk of depressive symptoms and suicidal ideation among older adults. These findings highlight the potential of employment-based interventions as viable strategies to promote mental well-being in later life. From a policy perspective, expanding access to such programs may reduce mental health disparities among the aging population. Future research should explore the long-term effects of continued program participation, differential impacts of program type and intensity, and underlying mechanisms linking senior employment to mental health.

Data availability statement. This study uses data from the Korea Welfare Panel Study (KoWePS), which can be accessed through its official website (https://www.koweps.re.kr:442/main.do).

Acknowledgments. The authors would like to extend their gratitude to the Korea Welfare Panel Study conducted by the Korea Institute for Health and Social Affairs. The authors are grateful to the institutions for providing access to the data.

Funding statement. This study was not supported by any funding agency.

Competing interests. The authors declare none.

Ethical standard. As this study was based on publicly available and de-identified data from the Korea Institute for Health and Social Affairs, informed consent and prior IRB approval were not required. It was granted an exemption from full review by the Institutional Review Board of Severance Hospital, South Korea (IRB No. 4-2025-0796).

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https://doi.org/10.1017/S0033291725102560 Published online by Cambridge University Press