Korean Society for Affecitve Disorders

Original Article
Mood Emot 2025;23(3):63-71
https://doi.org/10.35986/me.2025.23.3.63
pISSN 1738-0960, eISSN 2671-4655

Sex Differences in Stress-Coping Strategies among Community-Dwelling Older Adults

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Background: Although research on stress is extensive, few studies have examined sex differences in stress-coping strategies among community-dwelling older adults. This study aimed to compare the types of coping strategies and behaviors used by male and female aged 65 and older.
Methods: A cross-sectional design was used with data from a cohort of community-dwelling older adults. Stress-coping strategies were assessed using the Behavioral Checklist for Coping with Stress and the Coping Inventory for Stressful Situations. Independent t-tests were conducted to compare sex differences in coping behaviors and strategies.
Results: Pleasure-seeking activity was significantly higher among male than female ($p<0.001$), whereas social activity ($p=0.004$) and avoidance-oriented coping ($p=0.038$) were significantly higher among female. No significant sex differences were observed in compulsive activity, personal activity, emotion-oriented coping or task-oriented coping.
Conclusion: Male tended to engage more in pleasure-oriented behaviors, whereas female were more involved in social interaction and emotional expression. These differences may reflect the influence of sex roles and life experiences on stress management in later life. Sex-sensitive interventions that promote adaptive coping—such as exercise programs for male and expressive group activities for female—may help support mental well-being in older adults.

Keywords Coping skills; Stress, psychological; Aged; Health services for the aged

INTRODUCTION

Modern society, characterized by rapid industrialization, digitalization, and competitive social structures, imposes a variety of stressors on individuals and serves as a major threat to mental health. Stress contributes to the development of anxiety and depression and, in severe cases, can lead to suicide, underscoring the critical importance of mental health promotion [1]. Selye [2] defined stress as a physiological adaptive response to specific stimuli, and thereafter Lazarus and Folkman [1] reconceptualized stress as an interaction between the individual and the environment, arguing that cognitive appraisal and coping strategies determine the outcomes of stress responses. According to prior research, experiencing high levels of stress over a prolonged period is associated with deterioration of mental health and an increased risk of psychological problems [3], indicating

Received October 15, 2025, **Revised** November 16, 2025, **Accepted** November 18, 2025
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the need for interventions that reinforce approach-oriented coping strategies and emotional stability in stressful situations [4].

Older adulthood is characterized by declining physical function, retirement, loss of spouse or friends, and reduced financial capacity, rendering it a life stage particularly vulnerable to stress. Older adults frequently encounter uncontrollable stressors such as illness and bereavement, which negatively impact mental health and necessitate prioritized prevention and management strategies. Previous research suggests that stress plays a pivotal role in healthy aging and recommends developing effective stress management programs to enhance the psychological well-being of older adults [5]. Moreover, Folkman [6] posited that stress can function as a positive resource, providing positive meaning when appropriately managed.

Coping strategies significantly influence the onset and course of mental health problems, with heightened importance in the elderly population. Although research on stress across diverse groups has been extensive [7], studies comparing sex differences in stress-coping strategies among community-dwelling older adults remain scarce. Given that coping strategies and their mental health impacts may vary by sex and age, there is a pressing need for life-course-sensitive assessments [8]. This study aimed to compare the types of coping strategies and coping behaviors employed by male and female community-dwelling older adults aged 65 years and above, thereby providing foundational data for sex-tailored interventions in stress-coping strategies.

MATERIALS AND METHODS

1. Subject

This study utilized data obtained through the Busbased Screening and Assessment Network (BUSAN) project conducted by the Busan Metropolitan City. Between September 12, 2023, and June 17, 2025, Pusan National University Hospital conducted medical screenings at local community welfare centers and senior centers. Among the 2,022 individuals who completed the survey, duplicate responses were handled by retaining only the first entry, and cases with incomplete self-reported questionnaires were excluded. A total of 484 participants were included in the final analysis.

Inclusion criteria were as follows: (1) adults aged 65 years or older, and (2) individuals who regularly utilized community welfare centers or senior centers. Exclusion criteria included: (1) severe hearing or visual impairments that interfered with the assessment process, and (2) presence of degenerative brain disease or cognitive dysfunction that could affect the validity of the evaluation. All participants were informed of the study's purpose and procedures and provided written informed consent prior to participation. The study protocol was approved by the Institutional Review Board of Pusan National University Hospital (IRB No: 2405-002-138).

2. Procedure

This study employed a cross-sectional design using community-dwelling older adult cohort data to examine sex differences in stress coping strategies. Stress coping strategies were assessed with both the Behavioral Checklist for Coping with Stress (BCCS) and the Coping Inventory for Stressful Situations (CISS), and any participant missing data on either instrument was excluded from the analysis. Descriptive statistics were used to characterize the sociodemographic profile of the sample. The cohort was then stratified by sex into male and female subgroups, and the BCCS and CISS were compared between these groups.

3. Outcome measures

1) Behavioral Checklist for Coping with Stress

The BCCS is a self-report instrument developed by Moon et al. [9] to assess behavioral responses to stress. In this study, the subscales were categorized based on the coping behavior types analyzed [10]. The BCCS evaluates the frequency of specific behaviors individuals may exhibit in stressful situations. Each item represents a distinct coping behavior in response to stress. Originally consisting of 53 items, the BCCS was later expanded to 54 items with the addition of one item. The subscales are classified into four domains according to coping behavior type: personal activity, pleasure-seeking activity, compulsive activity, and social activity. Respondents rate each item on a 5-point Likert scale ranging from 0 ("never") to 4 ("very frequently"), indicating how often they engage in each behavior when experiencing stress. Scores for each subscale are summed to determine the extent to which a particular coping

behavior is utilized.

2) Coping Inventory for Stressful Situations

The CISS is a self-report measure developed by Endler and Parker [11] to assess individual coping styles in response to stress. In this study, the Korean version adapted by Park et al. [12] was used. The CISS consists of 48 items divided into three subscales based on coping disposition: task-oriented coping, emotion-oriented coping, and avoidance-oriented coping. Each subscale comprises 16 items. Task-oriented coping refers to strategies aimed at managing the stressor itself, emotion-oriented coping involves regulating emotional responses to stress, and avoidance-oriented coping reflects efforts to divert attention away from the stressor. Respondents rate each item on a 5-point Likert scale ranging from 1 ("not at all") to 5 ("very much"), indicating the frequency of their typical responses in stressful situations. Subscale scores are calculated by summing the responses, with higher scores indicating greater use of the corresponding coping strategy.

4. Statistical analysis

This study employed descriptive statistics to examine the sociodemographic characteristics of the elderly population aged 65 years and older. The total sample was divided into male and female elderly groups based on sex, and independent t-tests were conducted to compare differences in stress coping behavior types and stress coping strategies between the two groups. To identify sex differences in stress coping behaviors, mean scores were calculated for each subfactor, and independent t-tests were performed at the individual item level. All statistical analyses were conducted using IBM SPSS Statistics for Windows version 28.0 (IBM Corp., Armonk, NY, USA), and a two-tailed p-value of less than 0.05 was considered statistically significant.

RESULTS

1. Sociodemographic data of subjects

A total of 484 participants were included in this study. Of these, 142 were male (29.3%) and 342 were female (70.7%), with the proportion of female participants approximately 2.43 times higher than that of male participants (Table 1). The mean age was 78 years (±6), and the most common age group was 70-79 years (n=233, 48.1%), followed by 80-89 years (n=195, 40.3%), 65-69 years (n=42, 8.7%), and 90 years or older (n=14, 2.9%).

Regarding employment status, 98 participants (20.8%) reported being employed, while 373 (79.2%) reported being unemployed. Marital status was distributed as follows: married (n=236, 50.1%), bereaved (n=202, 42.9%), divorced (n=21, 4.5%), and single (n=12, 2.5%). Educational attainment was as follows: elementary school graduation (n=204, 43.3%), middle school graduation (n=117, 24.8%), high school graduation (n=105, 22.3%), university graduation (n=32, 6.8%), graduate school graduation (n=8, 1.7%), and no formal education (n=5, 1.1%).

2. Comparison of individual stress coping behaviors by sex

Among the total elderly sample of 484 participants, 142 were male and 342 were female (Table 2). Based on mean response scores, the most frequently used stress

Table 1. Sociodemographic data of subjects (n=484)

Variable	No. of subject (%)
Sex	
Male	142 (29.3)
Female	342 (70.7)
Age (y)	
65–69	42 (8.7)
70–79	233 (48.1)
80–89	195 (40.3)
≥90	14 (2.9)
Mean±SD	78±6
Job[a]	
Yes	98 (20.8)
No	373 (79.2)
Marriage[a]	
Unmarried	12 (2.5)
Married	236 (50.1)
Divorced	21 (4.5)
Bereaved	202 (42.9)
Education (y)[a]	
0	5 (1.1)
1–6	204 (43.3)
7–9	117 (24.8)
10–12	105 (22.3)
13–16	32 (6.8)
>16	8 (1.7)

SD, standard deviation.
[a]Missing value: 13.

Table 2. Comparison of individual stress coping behaviors by sex

Behavioral checklist	Total (n=484)	Male (n=142)	Female (n=342)	t	p-value
Listenig to music	1.68±1.44	1.41±1.32	1.79±1.48	-2.608	0.009**
Overeating	0.64±0.96	0.65±0.81	0.63±1.01	0.212	0.832
Dating	0.43±0.93	0.54±0.94	0.39±0.92	1.630	0.104
Home shopping	0.61±0.98	0.67±0.91	0.58±1.01	0.890	0.374
Use of internet	0.79±1.26	1.09±1.38	0.66±1.19	3.239	0.001**
Having sex	0.28±0.65	0.47±0.75	0.19±0.58	3.951	<0.001***
Journey	0.91±1.16	0.95±1.11	0.89±1.18	0.519	0.604
Chatting	1.59±1.42	0.88±1.11	1.89±1.42	-8.334	<0.001***
Taking a walk	2.03±1.40	2.01±1.36	2.04±1.42	-0.268	0.789
Saying nasty things	0.41±0.87	0.51±0.91	0.37±0.85	1.580	0.115
Dancing	0.80±1.20	0.58±0.95	0.89±1.30	-2.902	0.004**
Social club	1.20±1.27	1.14±1.20	1.23±1.29	-0.669	0.504
Singing	1.39±1.36	1.09±1.15	1.52±1.42	-3.545	<0.001***
Drinking tea	1.77±1.41	1.83±1.29	1.74±1.46	0.680	0.497
Driving a car	0.70±1.16	0.95±1.26	0.60±1.10	2.918	0.004**
Stealing	0.13±0.50	0.19±0.61	0.10±0.45	1.580	0.116
Reading a book	1.01±1.27	1.15±1.26	0.96±1.27	1.495	0.135
Going to a movie/play/concert	0.67±1.05	0.62±0.99	0.69±1.08	-0.679	0.498
Throwing things	0.19±0.59	0.19±0.57	0.19±0.60	0.045	0.964
Smoking	0.21±0.77	0.52±1.18	0.08±0.44	4.308	<0.001***
Massage	0.82±1.17	0.71±1.12	0.86±1.19	-1.285	0.199
Gambling	0.16±0.61	0.26±0.78	0.11±0.51	2.128	0.035*
Meditation	0.85±1.23	0.93±1.23	0.82±1.22	0.916	0.360
Doing housework	2.10±1.43	1.92±1.42	2.18±1.43	-1.802	0.072
Crying	0.43±0.93	0.31±0.78	0.49±0.98	-2.067	0.039*
Socializing with friends	2.12±1.38	1.91±1.30	2.21±1.40	-2.220	0.027*
Fast driving	0.20±0.65	0.32±0.78	0.15±0.59	2.270	0.024*
Shopping at mall	0.68±1.04	0.63±0.94	0.70±1.08	-0.720	0.472
Watching TV	2.74±1.33	2.69±1.29	2.76±1.35	-0.525	0.600
Sleeping	1.70±1.38	1.93±1.31	1.60±1.40	2.430	0.016*
Making phone calls	1.89±1.34	1.76±1.27	1.95±1.37	-1.458	0.146
Binge eating	0.48±0.92	0.49±0.88	0.47±0.93	0.136	0.892
Sauna	1.08±1.24	0.93±1.15	1.14±1.27	-1.712	0.087
Internet shopping	0.47±0.94	0.56±0.94	0.43±0.93	1.342	0.180
Wandering about	1.59±1.34	1.67±1.23	1.56±1.39	0.834	0.405
Masturbation	0.22±0.67	0.41±0.88	0.14±0.54	3.310	0.001**
Exercise	2.19±1.41	2.28±1.36	2.15±1.43	0.906	0.365
Shouting	0.42±0.88	0.40±0.79	0.42±0.91	-0.232	0.816
Playing an instrument	0.31±0.86	0.34±0.89	0.30±0.84	0.413	0.680
Bathing/shower	2.33±1.44	2.34±1.37	2.33±1.47	0.033	0.974
Being alone	1.67±1.42	1.70±1.37	1.65±1.44	0.315	0.753
Using drug/illegal substance	0.06±0.32	0.09±0.43	0.05±0.27	0.985	0.326
Hitting	0.09±0.42	0.10±0.44	0.09±0.42	0.249	0.803
Extramarital affair	0.10±0.46	0.19±0.62	0.06±0.36	2.364	0.019*
Computer game	0.41±1.01	0.64±1.20	0.32±0.90	2.888	0.004**
Drinking alcohol	0.36±0.86	0.84±1.18	0.16±0.57	6.472	<0.001***
Yoga	0.51±1.02	0.36±0.78	0.58±1.09	-2.453	0.015*
Talking something over	0.59±1.01	0.31±0.72	0.70±1.09	-4.557	<0.001***
Praying	1.20±1.48	0.75±1.17	1.39±1.56	-4.848	<0.001***
Reckless driving	0.08±0.39	0.13±0.54	0.06±0.31	1.431	0.154
Drinking coffee	1.68±1.48	1.91±1.43	1.59±1.49	2.138	0.033*
Writing	0.92±1.27	0.93±1.25	0.92±1.28	0.042	0.967
Internet chatting	0.20±0.66	0.31±0.76	0.16±0.60	2.136	0.034*
Taking care of a pet	0.31±0.96	0.43±1.07	0.27±0.91	1.629	0.105

Values are presented as mean±standard deviation. Statistics were tested by the analysis of the mean difference and an independent t-test.

*p<0.05, **p<0.01, ***p<0.001.

coping behaviors across the entire sample were watching television, bathing/showering, exercising, socializing with friends, and doing housework or organizing. In contrast, behaviors with relatively low mean scores included illicit drug use, reckless driving, physical aggression, infidelity, and stealing.

In the male elderly group, the top-ranked behaviors were watching television, bathing/showering, and exercising, consistent with the overall sample. However, walking and sleeping were ranked higher in this group compared to the overall population. Behaviors with lower mean scores included illicit drug use, physical aggression, reckless driving, infidelity, and gambling. In the female elderly group, the types of coping behaviors were similar to those of the overall sample, though the order of frequency varied slightly. The most frequently reported behaviors were watching television, bathing/showering, socializing with friends, doing housework or organizing, and exercising. Behaviors with lower mean scores included illicit drug use, infidelity, reckless driving, smoking, and physical aggression, with smoking showing a notably lower mean score compared to the overall sample.

Statistically significant sex differences in stress coping behaviors were identified across behavioral categories. In compulsive activity, crying was more frequent in the female group (p=0.039). In personal activity, dancing and yoga were more frequent among females (p=0.004, p=0.015). In pleasure-seeking activity, behaviors such as sexual activity, smoking, gambling, speeding, masturbation, infidelity, computer games/entertainment, and alcohol consumption were all more frequent in the male group (p<0.001, p<0.001, p=0.035, p=0.024, p=0.001, p=0.019, p=0.004, p<0.001). In social activity, internet chatting was more frequent in the male group (p=0.034), while talking with others and socializing with friends were more frequent in the female group (p<0.001, p=0.027).

3. Comparison of stress coping strategies by sex

Stress coping behaviors were compared between male and female elderly groups as shown in Table 3. Pleasure-seeking activity was significantly higher in the male group than in the female group (p<0.001), whereas social activity was significantly lower in the male group (p=0.004). No statistically significant differences were observed between the two groups in compulsive activity (p=0.881) and personal activity (p=0.553). Regarding stress coping styles, avoidance-oriented coping was significantly lower in the male group compared to the female group (p=0.038). No significant differences were found in emotion-oriented coping (p=0.693) or task-oriented coping (p=0.389) between the two groups.

DISCUSSION

This study examined stress relief strategies among adults aged 65 and older living in the community, focusing on sex differences (Table 4). Although previous research has examined how older adults cope with stress, this study is unique in that it classifies community residents by sex and compares their individual coping behaviors. Overall, the most frequently adopted strategies in stressful situations were watching television, taking a bath or shower, exercising, socializing with friends, and completing household chores or organizing the home. These findings mirror earlier work showing that older

Table 3. Comparison of stress coping strategies by sex (n=484)

	Male (n=142)	Female (n=342)	t	p-value
Behavioral Checklist for Coping with Stress (BCCS)				
Compulsive activity	3.89±3.59	3.83±3.60	0.150	0.881
Personal activity	17.37±9.45	17.94±9.73	−0.593	0.553
Pleasure-seeking activity	4.01±5.10	1.41±2.98	5.682	<0.001***
Social activity	6.88±4.22	8.22±4.79	−2.895	0.004**
Coping Inventory for Stressful Situations (CISS)				
Avoidance coping	37.01±11.36	39.48±11.81	−2.085	0.038*
Emotional coping	29.09±10.58	29.53±11.51	−0.395	0.693
Task coping	38.82±12.39	40.00±13.89	−0.863	0.389

Values are presented as mean±standard deviation. Statistics were tested by an independent t-test.
*p<0.05, **p<0.01, ***p<0.001.

Table 4. Comparison of stress coping strategies by sex (visualized) (n=484)

	Male (n=142)	Female (n=342)
Behavioral Checklist for Coping with Stress (BCCS)		
Compulsive activity	No difference	No difference
Personal activity	No difference	No difference
Pleasure-seeking activity	↑***	↓***
Social activity	↓**	↑**
Coping Inventory for Stressful Situations (CISS)		
Avoidance coping	↓*	↑*
Emotional coping	No difference	No difference
Task coping	No difference	No difference

Statistics were tested by an independent t-test.
*p<0.05, **p<0.01, ***p<0.001.

adults favor routine activities that promote emotional regulation [13]. Whang [14] research further supports this pattern by demonstrating that accessible practices such as exercise, meditation, and autogenic training enhance emotional stability and physical health among older adults.

Our analysis of sex differences revealed that older male most frequently engaged in watching television, bathing or showering, and exercise, followed by walking and sleeping—suggesting a focus on physical activity and rest. Female reported the same coping behaviors but in a different order: after television viewing and bathing or showering, they prioritized socializing with friends, doing household chores or tidying, and exercise. The prominence of socializing among female underscores their reliance on social coping strategies. These findings align with prior research showing that older female draw on social networks to maintain emotional stability and relieve stress [15].

This subgroup analysis revealed clear sex differences in coping behaviors. Older male reported greater use of pleasure-oriented strategies such as sexual activity, smoking, gambling, speeding, masturbation, infidelity, computer gaming, alcohol consumption, and internet chatting. Older female, in contrast, relied more on emotional release through crying, individual pursuits like dancing and yoga, and social activities such as informal conversation and spending time with friends. When viewed through Carver's Brief COPE framework, these patterns distinguish predominantly maladaptive from more adaptive strategies and highlight the necessity of designing interventions tailored to each sex's coping profile [16].

In the male older-adult cohort, the social activity of internet chatting can be conceptualized as adaptive coping, corresponding to the Use of Emotional Support and Use of Instrumental Support subscales. In contrast, hedonic-centered activities map onto Substance Use or Self-Distraction, both classified as maladaptive coping; accordingly, physical-activity–based interventions may be warranted to shift these maladaptive hedonic behaviors toward healthy adaptive coping. Transitioning to exercise-based coping strategies has been shown to modulate monoaminergic systems (e.g., dopamine, serotonin), thereby activating resilience to stress by promoting emotional stability and positive affect through neurotransmitter regulation [17]. Moreover, prior research indicates that higher exercise frequency is significantly associated with lower perceived psychological stress levels [18], supporting exercise as an effective adaptive coping strategy for male older adults who favor hedonic activities by inducing dopamine release and emotional enjoyment to alleviate stress.

In the female older-adult cohort, individual activities such as dancing and yoga correspond to active coping and positive reframing and thus represent adaptive coping, while social activities like chatting and socializing with friends fall under the Use of Emotional Support and Use of Instrumental Support dimensions of adaptive coping. In contrast, impulsive behaviors such as crying are classified in the venting category as maladaptive coping strategies. Although crying may provide short-term relief, it is considered a maladaptive strategy that undermines long-term psychological adaptation [4]. Therefore, for female older adults, it is advisable to implement group-based programs that promote social interaction and strengthen emotional support–seeking, thereby transforming maladaptive expressions such as crying into more structured expressive coping or social support.

When comparing stress coping strategies by sex, the male older-adult group exhibited a significantly higher frequency of hedonic activities and relatively lower levels of social activities and avoidance-oriented coping. This tendency can be interpreted as reflecting older male's inclination to regulate emotions in an independent, self-centered manner during stressful situations. In contrast, the female older-adult group employed social activities for coping more frequently and engaged less in hedonic-focused activities, while avoidance-oriented coping appeared at relatively higher levels. This pattern aligns with findings that older female alleviate stress through social interactions with others [19], and may also reflect a tendency to avoid the stressor itself. These sex-based differences in coping strategies extend beyond simple behavioral distinctions. For male, the sociocultural expectation of independence and self-control emphasized in the provider role persists into older age, leading to a preference for stress management through personal hedonic pursuits, whereas life-long experience in relationship-centered roles appears to drive older female to seek emotional stability through social interaction. Further analysis of sex differences in avoidance-oriented coping revealed that, contrary to previous research reporting that male tend to use task-oriented coping more frequently [20], female in this study scored higher than male. When comparing these scores with those from domestic prior studies [21,22], the mean differences between male and female groups aged 65 and above were small. These results can be interpreted as reflecting psychosocial changes associated with aging; younger adults generally prefer future-oriented, achievement-focused task coping strategies, whereas older adults tend to internalize coping methods based on life experience, aiming for emotional stability and relationship maintenance.

First, this study sampled community-dwelling adults aged 65 and older who participated in a regional health–medical service program, limiting the generalizability of findings beyond this single locale. Nevertheless, by employing a structured approach that reflected the local service environment and demographic characteristics, the study provided empirical insights into stress-related factors that can inform tailored mental health interventions in similar community contexts. Second, the cross-sectional design assessed mental health and stress-relief strategies at a single time point. Because responses may vary depending on the timing of stressors, future research should incorporate repeated measures to capture the continuity and dynamics of coping over time. Third, reliance on self-report questionnaires introduced potential accuracy limitations, as the validity of mental health and stress assessments depends on respondents' candor and understanding of items. Fourth, coping behaviors were measured via a 54-item checklist, which restricted the inclusion of additional individual behaviors and precluded qualitative depth. Moreover, the length of the checklist may burden older respondents, highlighting the need to develop a more concise and age-appropriate inventory of coping strategies. Fifth, this study did not statistically control for potential covariates, including education level, health status, and marital status. The absence of covariate adjustment may have influenced the observed associations between sex and coping strategies. Future research should incorporate key covariates to enhance the validity and interpretability of findings. Sixth, the sex composition of the sample differed from the national demographic distribution of older adults in South Korea (55.7% female and 44.3% male, Statistics Korea, 2025) [23], with a higher proportion of female participants (70.7%) in this study. This difference may reflect contextual factors such as voluntary participation patterns or community-based recruitment methods. The findings should be carefully interpreted as sex-related differences could affect the outcomes. Furthermore, because the study focused exclusively on older adults, it remains uncertain whether the observed sex differences are unique to this age group or indicative of patterns across age cohorts. Future research should investigate age-related variations through comparative analyses involving diverse age groups. Despite these limitations, this study is meaningful as the first to classify community-dwelling older adults by sex and compare individual stress-coping behaviors and relief strategies across groups.

CONCLUSION

The present study compared stress-coping strategies by sex among adults aged 65 and older living in the community. Overall, participants demonstrated a preference for routine activities that foster emotional stability, consistent with previous research on coping strategies among older adults. Male were more likely to engage in pleasure-oriented behaviors, while female more often

relied on social interaction and emotional expression. These differences may reflect the enduring impact of life experiences and social roles on stress management in later life. In this study, pleasure-seeking among male and venting among female were associated with less adaptive coping outcomes. Based on these tendencies, it may be meaningful to explore intervention strategies that support more adaptive coping, such as exercise programs for male and structured expressive or supportive group activities for female. However, these suggestions should not be viewed as universally applicable solutions, but rather as exploratory directions informed by observed patterns. Future research should investigate which types of programs are most appropriate and effective for diverse subgroups of older adults, taking into account individual preferences and sociocultural contexts.

CONFLICTS OF INTEREST

Eunsoo Moon is an associate editor of Mood and Emotion; however, was not involved in the peer reviewer selection, evaluation, and decision process of this article. Otherwise, the authors have nothing to disclose.

FUNDING

This study was supported by Busan Medi-Bus Project grant by the Busan Metropolitan City.

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