

Brief Embedded Mindfulness in Police Colleges: Effects on First-Year Students' Psychological Symptoms

Ou Yuxia

Nanjing Police University, Nanjing, 210023, China

Keywords: Mindfulness; Embedded mindfulness; Police cadets; SCL-90; Thematic analysis

Abstract: The mental health issues of college students have drawn increasing attention in recent years. However, the standard mindfulness curriculum is time-consuming and difficult to adapt to the highly structured management environment of the police colleges. This study investigated the intervention effect of brief embedded mindfulness exercise on psychological symptoms of police cadets. The whole class cluster sampling method was used to recruit 120 freshmen in a police college, of whom 52 completed the SCL-90 pre- and post-test and were included in the analysis. The 52 participants came from three groups: the embedded mindfulness group (EMG, $n=18$, practicing 3-5 minutes per week within 12 weeks of mental health curriculum), the extracurricular voluntary mindfulness group (EVMG, $n=5$, monthly activity) and the control group (CG, $n=29$, receiving standard mental health courses). Thematic analysis method was used to qualitatively analyze the text feedback of extracurricular voluntary mindfulness group participants. The results showed that the embedded mindfulness group had significant reductions in total SCL-90 score ($p < 0.01$) and five core subscales ($p < 0.05$), with a large effect size ($r = 0.70$). The total score of CG group also decreased significantly ($r=0.47$). The changes in extracurricular voluntary mindfulness group were not significant on the SCL-90. Theme analysis refined four themes: concentration and self-awareness improvement, body relaxation and sleep improvement, emotional regulation and mentality change, and social connection established by group sharing. The results showed that embedding brief mindfulness practice into the daily teaching routine was effective in improving mental health of students in high-discipline environments, and extracurricular groups should be considered as a complementary form for students with additional practice needs.

1. Introduction

The mental health issues of college students have drawn increasing attention in recent years. A meta-analysis covering the SCL-90 studies of Chinese college students in the past decade showed that the overall symptom level of current college students was significantly higher than the 2018 norm, and the scores of interpersonal sensitivity, depression and anxiety were particularly outstanding. [1] This psychological burden is more obvious for first-year students: they are in the critical period of adapting to the new campus environment, coping with heavy academic pressure, and rebuilding social networks, so the psychological challenges they face are more concentrated.

Mindfulness intervention has shown potential in relieving the psychological symptoms of college students. Bamber and Kraenzle Schneider's narrative review suggests that mindfulness interventions are expected to reduce stress and anxiety among college students. [2] Goldberg et al. found that mindfulness-based interventions were comparable to traditional psychotherapy in improving depression and anxiety, but the strongest evidence was from clinical populations rather than general student populations[3], suggesting that the applicability of standard-duration courses to non-clinical students remains unclear. Domestic studies have also provided supporting evidence. Yan and Gao found that mindfulness training can reduce anxiety and depression in vocational college students [4]; Lu et al. found that brief mindfulness intervention could improve the sleep quality of medical students with sleep difficulties ($PSQI \geq 8$)[5].

However, most of the existing studies used standard-duration mindfulness-based interventions (45-60 minutes once or twice a week), which required more time and professional leaders, making it difficult for students to persist in participating in universities with heavy homework and fixed schedules. To overcome this barrier, some researchers have tried to integrate shorter sessions of mindfulness practice directly into the curriculum. Vinci et al. found that a single 10-minute mindfulness practice reduced negative mood, but not impulsivity, in college students with a high propensity to drink[6] ; Zhang et al. embedded about 20 minutes of mindfulness practice in an undergraduate biology class, and students reported improvements in concentration, emotion regulation, and sleep quality[7]. These findings suggest that brief sessions of mindfulness integrated into the curriculum may be more feasible than stand-alone extracurricular sessions.

This advantage is particularly prominent in the police college: students are highly disciplined and have a highly fixed schedule, with little time for voluntary activities after class. Research from soldiers and cadets provides useful reference: mindfulness training can weaken the association between perceived stress and hopelessness in soldiers[8]; MBSR can improve the resilience of military medical college students, reduce PTSD symptoms and promote post-traumatic growth[9]. Wu et al. also reported that more than one dimension of SCL-90 of military college freshmen changed between pre-test and post-test. [10] Although the participants of these studies were not police cadets, the highly disciplined, structured situation was similar to that of police cadets. So mindfulness is feasible and probably effective in these situations. However, previous studies mostly used standard duration programs or focused on military populations. Whether brief embedded mindfulness is effective in police colleges remains to be verified.

To fill this gap, this study compared three delivery forms in a police college in China: (1) brief mindfulness practice integrated into the mental health curriculum; (2) voluntary extracurricular mindfulness programs; And (3) standard mental health curriculum without mindfulness component as a control. This three-group design examined whether embedded mindfulness and extracurricular forms could reduce psychological symptoms of police cadets and determine which implementation was more sustainable.

To sum up, this study intends to answer the following three questions:

RQ1: Is a brief, curriculum-embedded mindfulness program effective in reducing psychological symptoms among police college first-year students compared with a standard mental health course control group?

RQ2: To what extent do extracurricular voluntary forms of mindfulness alleviate psychological symptoms in this population? How did participants describe their benefits and barriers?

RQ3: How do embedded and extracurricular forms of mindfulness compare in terms of feasibility and sustainability in the police college setting?

2. Method

2.1 Participants

Three parallel first-year classes from a police college in China took part in this study. A total of 120 students were enrolled at the beginning of the study. The SCL-90 was administered at pre-test (October 15, 2025) and post-test (January 7, 2026). After excluding incomplete responses, regular response patterns or invalid answers, valid paired pre- and post-test data were retained for 52 students, with an effective recovery rate of 43.3%.

Among the 52 effective participants, 18 were from the embedded mindfulness group (Class 03); 5 were from the extracurricular voluntary mindfulness group (composed of students from classes 01 and 02 who volunteered to join the after-class group); and 29 students were in the control group (students from classes 01 and 02 who did not participate in the mindfulness intervention). The sample included 44 males and 8 females, with a mean age of 18.10 years ($SD = 0.50$) at pre-test. No significant differences were found among the three groups in gender distribution or age.

The three groups are hereafter referred to as the embedded mindfulness group (EMG), the extracurricular voluntary mindfulness group (EVMG), and the control group (CG).

2.2 Measures

The Chinese version of the Symptom Checklist-90 (SCL-90) was used.[11,12] The scale contains 90 items organized into nine core subscales and uses a 5-point rating scale (1 = not at all, 5 = extremely). Previous studies based on a large sample of Chinese college students showed that the scale had good internal consistency, with subscale Cronbach's α values of 0.80–0.91 and a total-scale α of 0.98; item-total correlations range from 0.44 to 0.74, although discriminant validity among subscales is limited.[13] According to the research focus of this study, six subscales were selected for statistical analysis: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, and paranoid ideation. The remaining three subscales—hostility, phobic anxiety, and psychoticism—were not included in the primary analysis because they were not directly related to the study hypothesis.

After the intervention, students in the EVMG were invited to submit written feedback about their experiences for qualitative analysis.

2.3 Procedure and Intervention

This study used a quasi-experimental design, and the intervention program was embedded in a 12-week college mental health course. Participants were assigned to three conditions according to class enrollment and voluntary participation principle:

Embedded Mindfulness group (EMG; Class 03) : At the beginning of an 80-minute weekly mental health class, the instructor led the entire class to perform 3-5 minutes of mindfulness practice, focusing on breath awareness and body scanning, 12 times in total throughout the semester.

Extracurricular Voluntary Mindfulness Group (EVMG; some students from classes 01 and 02) : Students from classes 01 and 02 who volunteered to participate in additional mindfulness training formed an after-class practice group. It should be noted that this group of students did not receive in-class mindfulness exercises with EMG, and their mindfulness exercises was limited to after-class activities. The group activities were conducted once a month and lasted for about 120 minutes each time, including about 20 minutes of breathing awareness practice, experience sharing, and question answering. A total of about 3 sessions were conducted during 12 weeks.

Control Group (CG; remaining students in Classes 01 and 02): These students received the standard mental health curriculum without any mindfulness practice.

2.4 Data Analysis

Quantitative analysis. SPSS 26.0 was used for data processing. Shapiro-wilk test was used to test the normality of each variable, including skewness and kurtosis. Since most variables deviated from normal distribution, Kruskal-Wallis H test was used for comparison between groups, and Wilcoxon signed rank test was used for intra-group comparison. Effect sizes are reported as epsilon squared (ϵ^2) for between-group comparisons and $r = Z/\sqrt{N}$ for within-group comparisons (N is the number of paired observations in each group). All tests were two-tailed and the significance level was set at $p < 0.05$.

Qualitative analysis. After the intervention, the participants in the EVMG were invited to submit written feedback, and 11 valid texts were finally obtained. Thematic analysis was used to code the texts and identify themes. [14] It should be noted that the 11 students who provided feedback are not the same group as the 5 participants in this group included in the quantitative analysis: the qualitative sample includes all students who participated in at least one activity and submitted feedback, while the quantitative sample only includes students who completed both pre- and post-test questionnaires. Therefore, the qualitative findings are only for exploratory interpretation and do not correspond to the quantitative results at the case level.

2.5 Ethical Statement

This study was carried out as part of the course teaching evaluation project and was approved by the author's institution. Before data collection, all participants were fully informed about the purpose of the study and the nature of the data being used for educational research only. All questionnaire responses were processed anonymously to ensure that participant personal information was not identified.

3. Results

3.1 Descriptive Statistics and Baseline Characteristics

Descriptive statistics for total SCL-90 scores by group are shown in Table 1. In the CG, pre-test scores showed moderate positive skewness (1.41) and kurtosis (3.09). The EVMG had relatively normal distributions (skewness 0.25–0.97). The EMG showed higher skewness (1.74–2.29) and kurtosis (2.18–4.51), with a kurtosis of 8.13 for the Difference. Given these deviations from normality, non-parametric tests were used for all subsequent analyses.

Three-group baseline comparisons were conducted using Kruskal-Wallis H tests. The total pretest score showed no significant between-group difference ($H = 1.695$, $p = 0.428$). Six core symptom subscales were also non-significant (somatization $H = 0.282$, $p = 0.868$; depression $H = 0.926$, $p = 0.629$; anxiety $H = 0.153$, $p = 0.927$; obsessive-compulsive symptoms $H = 0.262$, $p = 0.877$; interpersonal sensitivity $H = 1.300$, $p = 0.522$; paranoid ideation $H = 0.322$, $p = 0.851$). All ϵ^2 values were below 0.06 (range: 0.003–0.033), indicating small effect sizes and confirming that the three groups were comparable at baseline. It should be noted that the EVMG group had a small sample size ($n = 5$), which limits statistical power; thus, interpretations involving this group should be made with caution.

Table 1. Descriptive Statistics and Distribution Characteristics of Total SCL-90 Scores by Group

Group	Variable	<i>M</i>	<i>SD</i>	Median	Skewness	Kurtosis
CG (<i>n</i> = 29)	Pre-test	139.76	31.42	132.00	1.41	3.09
	Post-test	127.59	48.37	106.00	1.75	2.51
	Difference	12.17	47.38	17.00	−1.73	3.51
EVMG (<i>n</i> = 5)	Pre-test	125.40	19.26	126.00	0.25	1.09
	Post-test	117.60	24.09	114.00	0.97	1.03
	Difference	7.80	23.10	8.00	−0.16	1.26
EMG (<i>n</i> = 18)	Pre-test	138.39	46.58	121.50	1.74	2.18
	Post-test	120.78	49.32	100.00	2.29	4.51
	Difference	17.61	46.25	17.50	−0.88	8.13

Note. Difference = Pre-test – Post-test. Positive difference values indicate symptom reduction. *M* = mean; *SD* = standard deviation.

3.2 Between-Group Main Effect Test

Kruskal-Wallis *H* tests were used to compare the three groups on post-test total scores, difference scores, and six core symptom subscales. Results are shown in Table 2.

Table 2. Between-Group Comparisons of Post-Test and Change Scores (Kruskal-Wallis *H* Test)

Variable	<i>H</i>	<i>df</i>	<i>p</i>	ε^2
Post-test total	0.783	2	0.676	0.015
Change total	1.188	2	0.552	0.023
Somatization	0.722	2	0.697	0.014
Depression	2.729	2	0.255	0.054
Anxiety	0.446	2	0.800	0.009
Obsessive–Compulsive	1.164	2	0.559	0.023
Interpersonal sensitivity	0.665	2	0.717	0.013
Paranoid ideation	2.177	2	0.337	0.043

Note. Change total = pre-test – post-test; positive values indicate symptom reduction. $\varepsilon^2 = H/(N - 1)$, *N* = 52.

No significant between-group differences were found for post-test total score ($H = 0.783$, $df = 2$, $p = 0.676$, $\varepsilon^2 = 0.015$), difference total score ($H = 1.188$, $p = 0.552$, $\varepsilon^2 = 0.023$), or six core symptom subscales: somatization ($H = 0.722$, $p = 0.697$), depression ($H = 2.729$, $p = 0.255$), anxiety ($H = 0.446$, $p = 0.800$), obsessive–compulsive ($H = 1.164$, $p = 0.559$), interpersonal sensitivity ($H = 0.665$, $p = 0.717$), or paranoid ideation ($H = 2.177$, $p = 0.337$). Effect sizes (ε^2) ranged from 0.009 to 0.054, all indicating small effects.

These results indicate that the three conditions did not produce statistically different outcomes at post-test. The limited statistical power due to the small EVMG sample size ($n = 5$) and large within-group variability may have contributed to the non-significant outcomes.

3.3 Within-Group Change Analysis

Wilcoxon signed-rank tests were used to examine pre-post changes within each group. Results for total scores are shown in Table 3.

Table 3. Within-Group Pre-Post Comparisons for Total Scores (Wilcoxon Signed-Rank Test)

Group	Pre-test <i>Mdn</i> (<i>IQR</i>)	Post-test <i>Mdn</i> (<i>IQR</i>)	Negative/Positive Ranks	<i>Z</i>	<i>p</i>	<i>r</i>
CG (<i>n</i> = 29)	132.00 (38.50)	106.00 (54.00)	24/5	-2.531	0.011	0.47
EVMG (<i>n</i> = 5)	126.00 (32.50)	114.00 (42.00)	4/1	-0.944	0.345	0.42
EMG (<i>n</i> = 18)	121.50 (38.75)	100.00 (28.50)	17/1	-2.984	0.003	0.70

Note. Negative ranks = post < pre (symptom reduction); positive ranks = post ≥ pre. *p* values are two-tailed. Effect size $r = Z/\sqrt{N}$, where *N* is the number of paired observations within each group. Multiple comparisons were not corrected; results should be interpreted with caution.

The CG showed a significant decrease in total score from pre-test to post-test ($Z = -2.531$, $p = 0.011$, $r = 0.47$). Among the subscales, somatization ($Z = -1.975$, $p = 0.048$), anxiety ($Z = -2.120$, $p = 0.034$), obsession-compulsion ($Z = -2.948$, $p = 0.003$), and interpersonal sensitivity ($Z = -2.074$, $p = 0.038$) all decreased significantly; depression ($Z = -1.288$, $p = 0.198$) and paranoid ideation ($Z = -1.883$, $p = 0.060$) did not reach significance.

The EMG showed a larger decrease in total score ($Z = -2.984$, $p = 0.003$, $r = 0.70$). Significant reductions were observed across five core subscales: depression ($Z = -2.703$, $p = 0.007$), obsession-compulsion ($Z = -2.705$, $p = 0.007$), anxiety ($Z = -2.480$, $p = 0.013$), interpersonal sensitivity ($Z = -2.390$, $p = 0.017$), and paranoid ideation ($Z = -2.154$, $p = 0.031$). Somatization did not reach significance ($Z = -1.559$, $p = 0.119$).

The EVMG showed no significant changes on any of the six core subscales (all $p > 0.05$).

In summary, both the CG and the EMG showed significant pre-post decreases in total score ($r = 0.47$ vs. 0.70), with the EMG showing a larger effect size; no significant changes were observed in the EVMG. Given that multiple within-group tests were conducted without correction, these findings should be considered exploratory.

3.4 Student Experiences in the EVMG: A Thematic Analysis

Written feedback from 11 participants in the EVMG was analyzed using thematic analysis.[14] The qualitative sample ($n = 11$) did not fully overlap with the quantitative paired sample ($n = 5$). The qualitative sample included all students who participated in at least one activity and submitted feedback, while the quantitative sample included only students who completed both pre- and post-test questionnaires. After thematic analysis, a total of four themes were identified.

Theme 1: Improved attention and awareness. Participants generally reported improved concentration and greater sensitivity to internal and external details. One participant wrote, "The most noticeable change in my mindfulness practice is my ability to focus. In daily class and self-study, I am no longer easily disturbed by scattered thoughts."

Theme 2: Physical relaxation and sleep improvement. Several participants described feeling less fatigued and falling asleep faster. One participant wrote: "After a period of time, I get a wonderful feeling of lightness... I can also fall asleep quickly and deeply."

Theme 3: Emotion regulation and mindset shift. Participants reported that mindfulness practice changed the way they dealt with stress. One participant noted, "I used to think that calmness was forcing myself to control my emotions. After participating in the mindfulness group, I realized that calmness came from inward awareness, not coercion."

Theme 4: Sense of connection through group sharing. Multiple participants mentioned the sharing session that followed each mindfulness practice. One participant described it as: "An

outpouring of insight is a starlight that comes together to light up the whole sea."

Although the EVMG did not show a significant decrease in the SCL-90 total score, participants still reported subjective improvements in focus, sleep quality and emotion regulation. In addition, several participants expressed a desire to engage in longer and more structured practices. This contrast between the qualitative benefit and the quantitative null finding, together with the small sample size, low baseline scores, and limited practice dose in this group, may explain why no measurable change was observed on the SCL-90.

4. Discussion

4.1 Overview of Main Findings

This study included three groups of first-year police college students (EMG, EVMG, CG) assessed at pre-test and post-test with a 12-week interval. The results of within-group analysis showed that the EMG had significant reductions in total SCL-90 score and five core subscales, with a large effect size for the total score ($r = 0.70$). The total score of the CG also decreased significantly ($r = 0.47$), suggesting symptom reduction over time independent of the intervention. The EVMG did not reach a statistically significant level. A total of four themes were identified from the qualitative analysis of the written feedback of the EVMG: the improvement of concentration and awareness, physical relaxation and sleep improvement, emotional regulation and mentality change, and the sense of social connection obtained through group sharing. The themes described above suggest that participants perceived tangible personal benefits from mindfulness activities, even though the group did not show statistically significant changes in quantitative measures.

4.2 Embedded Mindfulness Group: Effectiveness of Short Sessions

The EMG, practicing only 3-5 minutes per week at the beginning of the course, achieved a large effect size of symptom reduction after 12 weeks. This finding is consistent with previous literature. Bamber and Kraenzle Schneider, in a review covering 57 studies, pointed out that mindfulness meditation is expected to reduce stress and anxiety in college students [2]; Yan and Gao found that 8-week mindfulness training was related to the reduction of SCL-90 psychological symptoms of students in Chinese vocational colleges [4]; Zhang et al. integrated brief mindfulness exercises into undergraduate biology courses, and students reported improvements in concentration, emotion regulation and sleep quality [7]. These findings provide cross-curricular evidence to support the results, suggesting that mindfulness integrated into the curriculum can produce perceived benefits across different subject domains.

The present study extends this literature by showing that even when practice sessions were reduced to 3-5 minutes and implemented entirely in an existing curriculum, measurable psychological benefits were observed as long as practice was repeated weekly. These results provide empirical support for the core idea of brief, low-dose mindfulness - that it is the duration of practice, not the duration of a single practice session, that is key to the effectiveness of an intervention.

Another outstanding advantage of the embedded form is that it does not require additional class time. This characteristic is particularly suitable for police colleges where students have little time to participate in extracurricular mental health activities. In addition, the participation threshold is low, and this form can be used as a realistic choice for such institutions to carry out psychological intervention.

4.3 Natural Relief in the Control Group

The CG also had a significant decrease in total SCL-90 scores after 12 weeks ($r = 0.47$), suggesting that the reduction in symptoms could not be solely attributed to the mindfulness intervention. There are three possible explanations for this. The first is freshmen adaptation effect: first-year students face the greatest environmental adaptation pressure at the beginning of the semester, and this pressure naturally relieves with the progress of the semester, and the symptoms are also relieved. The second was the standard curriculum effect: the CG received the mental health curriculum itself, which covered emotional management and stress coping, and its teaching effect may have partly contributed to the relief of symptoms. The third is measurement effect: repeated measurement of the same instrument may induce a practice effect, causing post-test scores to decrease independently of the intervention.

A meta-analysis covering SCL-90 studies of Chinese college students in the last decade showed that self-reported levels of psychological symptoms varied significantly across samples and measurement time points. [1] This suggests that natural remission in the CG may partially mask the true effect of the intervention in a quasi-experimental design. Future studies should extend the follow-up time or set up a delayed-intervention group to effectively distinguish the time effect from the intervention effect.

4.4 Extracurricular Voluntary Mindfulness Group: Non-Significant Quantitative Results Alongside Qualitative Benefits

The EVMG did not show statistically significant changes in SCL-90. However, the qualitative analysis of written feedback revealed perceived benefits in four areas: improved concentration, better sleep, emotional regulation, and social connection through group sharing. The following three aspects help explain the divergence between quantitative and qualitative findings.

First, the pre-test scores of the EVMG were relatively low compared to the other groups, which may have limited the ability of the scale to detect further declines. The functional orientation of the SCL-90 is to screen for clinical level distress [11], and the scale itself has limited sensitivity to detect further improvement for participants with mild or minimal symptoms at baseline. This may explain why participants reported tangible benefits but quantitative analyses did not capture significant changes.

The second for the lack of statistical test power. There were only 5 participants with complete pre-test and post-test data in this group, and the sample size was too small to result in serious lack of power. Even if the true effect existed, it was difficult to reach statistical significance.

The third for intervention in low dose. The group was active only about three times in three months, well below the dose of standard mindfulness programs, which are typically delivered in 8-week sessions with weekly group practice and daily home practice[15]. Interestingly, several participants in this group expressed a desire to engage in "systematic, long-term practice" in their feedback, which supports the explanation of the dose-response relationship.

In addition, the qualitative sample covered a broader group of participants than the five quantitative participants, suggesting that this group's null findings did not reflect the full picture of their experience. The positive experiences reported by some participants who were not included in the quantitative analysis support the qualitative benefits.

4.5 Limitations

This study has several limitations. First, the sample size was small, especially in the EVMG ($n = 5$), and the statistical power was limited, so it was difficult to effectively detect differences between

groups. Second, assignment was performed in a class-wide cluster rather than by random assignment, and possible baseline differences between groups cannot be ruled out. Third, a delayed intervention control was not set up, and it is difficult to completely distinguish the time effect from the course effect. Fourth, the SCL-90 is a self-report measure and carries the risk of response bias (such as underreporting of psychological symptoms). Fifth, the qualitative and quantitative samples do not completely overlap, and the two types of results cannot be directly corresponding at the individual case level. Sixth, although the study period lasted for 12 weeks, the EVMG actually participated in only about 3 sessions, which was far lower than the standard dose of mindfulness programs [15], and the intervention effect of this group was difficult to fully show.

4.6 Practical Implications and Future Directions

Despite the above limitations, this study has several implications for mental health work in police colleges. First, embedded mindfulness practice is both feasible and effective: it does not require additional class time and can be directly integrated into existing courses, making it especially suitable for learning environments with tight schedules and high stress levels. Second, low-dose mindfulness (only 3-5 minutes per session) significantly lowered the threshold for participation and facilitated its promotion in police colleges. Third, although the quantitative effects of the EVMG were limited, participants reported positive subjective experiences, suggesting that such groups could complement the embedded form and provide additional options for students interested in learning more about mindfulness. In general, the embedded form can be used as a more feasible and sustainable main implementation mode in the situation of police colleges, and the extracurricular group should be positioned as a supplementary form for students with additional practice needs.

In terms of sustainability, embedding mindfulness into daily teaching routines may be more appropriate for police colleges than relying on voluntary extracurricular participation. This orientation is consistent with previous mindfulness studies in military populations [8,9] -which have demonstrated the effectiveness of mindfulness in highly disciplined, structured Settings, but all with standard dosing regimens. This study takes this work one step further: even when practiced for only 3-5 minutes at a time, in-class mindfulness produced measurable symptom reductions in the EMG and positive experiences in the EVMG. Thus, standard MBSR and brief embedded exercises may have their own uses: the former to establish efficacy, and the latter to provide a low-barrier implementation path for time-constrained institutions.

Future research could be improved in the following areas. First, the sample size should be expanded, especially the number of participants in the EVMG, so as to improve the statistical power and carry out more robust comparison between groups. Second, extend the intervention beyond 8 weeks and increase the frequency of extracurricular activities to more rigorously test the dose-response relationship. Third, follow-up measurements were performed 1 to 3 months after the intervention to examine whether the benefit of the intervention was maintained over time. Fourth, indirect effects of embedded mindfulness practice on objective measures such as academic performance, attendance, physical training performance could be further examined-such outcome variables are of particular importance in the police college settings.

Acknowledgement

Project Name: Research on the Psychological Foundation and Practical Path of Life Education in Police Colleges

Funding Source: Fundamental Research Funds for the Central Universities

Project No.: RWYB202617

References

- [1] Fang B J, Liu C X, Liang C F, et al. Meta-analysis of SCL-90 survey results on mental health of Chinese college students in the past decade[J]. *Journal of Shaoguan University*, 2023, 44(11): 40-45.
- [2] Bamber M D, Kraenzle Schneider J. Mindfulness-based meditation to decrease stress and anxiety in college students: A narrative synthesis of the research[J]. *Educational Research Review*, 2016, 18: 1-32.
- [3] Goldberg S B, Tucker R P, Greene P A, et al. Mindfulness-based interventions for psychiatric disorders: A systematic review and meta-analysis[J]. *Clinical Psychology Review*, 2018, 59: 52-60.
- [4] Yan J X, Gao L. An empirical study on mindfulness training improving mental health of higher vocational college students[J]. *Campus Psychology*, 2020, 18(4): 282-284.
- [5] Lu J H, Guan H J, Hu X Y. Effects of mindfulness-based stress reduction therapy on mental health and sleep quality of medical students[J]. *Chinese Journal of Health Psychology*, 2020, 28(11): 1705-1710.
- [6] Vinci C, Peltier M R, Shah S, et al. Effects of a brief mindfulness intervention on negative affect and urge to drink among college student drinkers[J]. *Behaviour Research and Therapy*, 2014, 59: 82-93.
- [7] Zhang Z, Chilakapati S S, Luu P, et al. Exploring impacts of a college biology course with integrated mindfulness practice on student well-being: Qualitative insights from student written reflections[J]. *Journal of American College Health*, 2026, 74(7): 2072-2081.
- [8] Jang Y, Ha J H, Jue J. Examining the moderating effect of mindfulness on the relationship between soldiers' perceived stress and hopelessness[J]. *Sustainability*, 2021, 13(18): 10040.
- [9] Yan X, Wang X, Chen Y, et al. Feasibility and effects of mindfulness-based stress reduction (MBSR) for improving resilience, posttraumatic stress disorder symptoms and posttraumatic growth among military medical college students[J]. *Acta Psychologica*, 2024, 251: 104556.
- [10] Wu D C, Li J Y, Bai F. Mental health status and influencing factors of military academy cadets before and after freshman training[J]. *Chinese Journal of Health Psychology*, 2015, 23(3): 426-429.
- [11] Derogatis L R, Lipman R S, Covi L. SCL-90: an outpatient psychiatric rating scale--preliminary report[J]. *Psychopharmacology Bulletin*, 1973, 9(1): 13-28.
- [12] Wang Z Y. Symptom Checklist-90 (SCL-90)[J]. *Shanghai Archives of Psychiatry*, 1984, (2): 68-70.
- [13] Yu Y, Wan C, Huebner E S, et al. Psychometric properties of the symptom check list 90 (SCL-90) for Chinese undergraduate students[J]. *Journal of Mental Health*, 2019, 28(2): 213-219.
- [14] Braun V, Clarke V. Using thematic analysis in psychology[J]. *Qualitative Research in Psychology*, 2006, 3(2): 77-101.
- [15] Kabat-Zinn J. *Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain, and Illness*[M]. New York: Delacorte, 1990.