

Effectiveness of a Gratitude Journal Intervention on Well-Being and Academic Achievement

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Objective: This study aimed to examine the effectiveness of a structured gratitude journal intervention on enhancing well-being and academic achievement among university students.

Methods and Materials: A randomized controlled trial was conducted with 30 undergraduate students from Greece, who were randomly assigned to either an experimental group (n = 15) receiving a ten-session gratitude journaling intervention over five weeks or a control group (n = 15) receiving no intervention. Assessments were conducted at three time points: pretest, posttest, and five-month follow-up. Well-being was measured using the Ryff Scales of Psychological Well-Being (RPWB), and academic achievement was assessed via self-reported Grade Point Average (GPA), cross-verified with institutional records. Repeated measures ANOVA and Bonferroni post-hoc tests were used to analyze the data using SPSS-27.

Findings: The results indicated significant improvements in well-being and academic achievement in the experimental group compared to the control group. The mean well-being score in the experimental group increased from 158.42 (SD = 12.35) at pretest to 172.68 (SD = 11.14) at posttest and remained high at follow-up (M = 171.47, SD = 11.92), while the control group showed no meaningful change. Academic achievement also improved significantly in the experimental group, with GPA rising from 2.89 (SD = 0.24) at pretest to 3.18 (SD = 0.21) at follow-up. Repeated measures ANOVA revealed significant time × group interactions for both variables (p < .001), and Bonferroni post-hoc tests confirmed that gains were maintained over time.

Conclusion: The findings suggest that gratitude journaling is an effective and sustainable intervention for improving psychological well-being and academic performance in university students, with benefits persisting up to five months after the intervention.

Keywords: gratitude journaling, well-being, academic achievement, university students.

1. Introduction

In recent years, gratitude has emerged as a central construct in positive psychology, garnering increasing attention for its impact on mental health, well-being, and life satisfaction. Gratitude is more than a transient emotional state; it is a psychological orientation toward appreciating the positive aspects of life and recognizing the contributions of others to one's well-being. This orientation has been shown to strengthen emotional resilience, enhance interpersonal relationships, and support sustained psychological growth. Gratitude journaling—a deliberate practice of regularly recording things for which one is grateful—has proven especially promising in various populations for its ease of implementation and enduring benefits {Wong, 2024 #157598}. As researchers and clinicians continue to explore non-invasive and cost-effective interventions to promote mental wellness, the structured cultivation of gratitude through journaling stands out as a powerful method to foster well-being, particularly among young adults navigating academic stressors.

Psychological well-being in university students is a multidimensional construct encompassing emotional, cognitive, and social domains. University students face a range of stressors related to performance pressure, identity development, and life transitions, which can compromise their mental health and academic performance. Interventions that cultivate positive emotions such as gratitude have shown promise in buffering against these stressors and enhancing psychological resilience {Toprak, 2023 #157569}. Studies have demonstrated that even brief gratitude interventions can yield improvements in psychological well-being, self-regulation, and emotional clarity in student populations {Rye, 2023 #157594}. For example, the use of shared gratitude experiences among health informatics students during a crisis was associated with improved emotional support and subjective well-being {Feldman, 2024 #157571}, while university students who engaged in gratitude writing showed reduced emotional distress and enhanced overall life satisfaction {Wolanin, 2023 #157602}.

The impact of gratitude on academic functioning is gaining recognition in educational psychology. Academic performance is not only a cognitive endeavor but also one shaped by emotional states, motivational beliefs, and psychological resources. Gratitude, by promoting positive affect and resilience, may indirectly support academic achievement through improved focus, persistence, and engagement. A study involving Indonesian students found

that gratitude journaling enhanced academic resilience by fostering positive interpretations of academic challenges and setbacks {Ross, 2022 #157575}. Similarly, gratitude-based interventions have been linked to improvements in motivation, self-efficacy, and perceived academic competence, suggesting that grateful students are more likely to value their educational experiences and invest effort in their studies {Nawa, 2021 #157568}. Moreover, cultivating gratitude may help students reframe stressful academic experiences, leading to better coping strategies and enhanced performance {Taruna, 2022 #157584}.

Gratitude journaling has been extensively evaluated as a low-cost, scalable intervention with psychological and educational benefits. Evidence from randomized controlled trials supports its utility in promoting emotional health, reducing symptoms of anxiety and depression, and enhancing interpersonal functioning {Cregg, 2020 #157601}. In a meta-analysis of gratitude interventions, journaling stood out as one of the most effective self-help methods for improving mental health outcomes across diverse populations {Cregg, 2020 #157601}. One study involving university students found that journaling three times per week over six weeks led to sustained increases in well-being and academic self-concept {Benjamin, 2022 #157578}. The mechanism behind these improvements is believed to involve the redirection of attention from stressors to sources of meaning and positivity, which facilitates a broadened perspective and more adaptive cognitive processing {Wong, 2024 #157598}.

Studies have also examined gratitude journaling in specific cultural and demographic contexts, including among adolescents, medical personnel, and underserved communities. In a pilot study with Black breast cancer survivors, gratitude journaling enhanced spiritual well-being and exercise self-efficacy, demonstrating the intervention's relevance across clinical populations {Cousin, 2024 #157595}. In a similar vein, gratitude journaling improved the mental well-being of nurses, highlighting its role in emotionally demanding environments {Cumella, 2022 #157600}. Among adolescents from orphanages or single-parent families, gratitude training contributed to improved psychological functioning and social adaptation {Halleyda, 2023 #157573; Megawati, 2019 #157596}. These findings suggest that gratitude journaling is not only effective in typical student populations but also adaptable to vulnerable groups.

The academic benefits of gratitude interventions have also been observed in cross-national studies. In the Indian

context, combining stress management training with gratitude journaling improved students' self-perception and classroom engagement {Khanna, 2021 #157589}. In Korea, subjective well-being correlated significantly with gratitude disposition, affirming the universal applicability of gratitude as a psychological construct {Yoo, 2020 #157574}. Similarly, gratitude was found to foster adaptive coping in Singaporean populations during the COVID-19 pandemic, indicating its utility in contexts of crisis and uncertainty {Tong, 2021 #157605}. These studies reinforce the notion that gratitude interventions, while simple in design, can be universally beneficial when tailored to the unique needs of specific populations.

Although gratitude journaling has demonstrated considerable effectiveness, researchers continue to investigate its mechanisms of action. Theoretical models suggest that gratitude activates multiple psychosocial pathways, including increased social support, cognitive reappraisal, and reduced rumination {O'Connell, 2017 #157597}. These pathways contribute to the regulation of emotional responses and the cultivation of a positive self-concept. The "broaden-and-build" theory posits that positive emotions such as gratitude expand individuals' thought-action repertoires and build enduring psychological resources, which may explain the sustained improvements observed in long-term follow-ups {Bohlmeijer, 2020 #157603}. In one three-armed randomized trial, participants who engaged in gratitude exercises showed improved well-being and emotional balance up to six months post-intervention, compared to control groups {Bohlmeijer, 2020 #157603}.

The cultural dimension of gratitude is also relevant in interpreting its effects. In collectivist societies, expressions of gratitude often emphasize relational harmony and obligation, while in individualist contexts, gratitude may function as a means of self-enhancement and emotional expression {Yildirim, 2019 #157580}. These cultural nuances influence how gratitude is experienced, expressed, and integrated into everyday practices. For example, in a study on unfixed-salary teachers in Indonesia, gratitude was found to correlate with higher psychological well-being despite financial instability, indicating that gratitude may buffer against structural adversity {Ilmi, 2019 #157599}. Similarly, adolescent gratitude and well-being were found to be interdependent and dynamic, highlighting the developmental importance of cultivating gratitude in youth {Rahayu, 2019 #157592}.

Given the growing body of literature supporting gratitude interventions, there remains a need for more controlled trials that examine their long-term effects on both psychological and academic outcomes, particularly among university students in different cultural settings. While many studies have documented short-term improvements in well-being, fewer have explored whether these effects are sustained over longer periods and whether they translate into measurable academic achievements. In light of this, the current study investigates the effectiveness of a structured gratitude journal intervention on well-being and academic achievement among university students in Greece.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a randomized controlled trial design to evaluate the effectiveness of a gratitude journal intervention on well-being and academic achievement among undergraduate students. A total of 30 participants were recruited from universities in Greece through online advertisements and campus announcements. Inclusion criteria required participants to be between the ages of 18 and 25, currently enrolled in a degree program, and fluent in Greek. After obtaining informed consent, participants were randomly assigned to either the experimental group ($n = 15$), which received the gratitude journal intervention, or the control group ($n = 15$), which received no intervention during the study period. The intervention was conducted over five weeks, and both groups were assessed at three time points: pretest (baseline), posttest (immediately after the intervention), and follow-up (five months later).

2.2. Measures

2.2.1. Well-Being

To assess the construct of well-being, the Ryff Scales of Psychological Well-Being (RPWB), developed by Carol Ryff in 1989, were employed. This standardized tool evaluates six core dimensions of psychological well-being: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. The version used in this study comprises 42 items, with each subscale containing seven items. Respondents rate each item on a 6-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree), with higher scores indicating greater well-being. Numerous studies have confirmed the validity and reliability of the RPWB across

diverse populations, with Cronbach's alpha values for the subscales typically ranging from 0.70 to 0.89, demonstrating strong internal consistency and construct validity in psychological research contexts.

2.2.2. Academic Achievement

Academic achievement was measured using the participants' Grade Point Average (GPA), a widely accepted and standardized indicator of academic performance. GPA reflects the average of a student's grades across all courses over a defined period, typically reported on a scale ranging from 0.0 to 4.0. In this study, self-reported GPA data were collected at both baseline and post-intervention stages and cross-checked with institutional academic records to ensure accuracy. GPA has been extensively validated as a reliable measure of academic success in educational and psychological research, with high correlations found between GPA and other indicators of academic aptitude, such as standardized test scores and teacher assessments. Its objectivity and broad usage support its utility in evaluating educational outcomes in intervention studies.

2.3. Intervention

2.3.1. Gratitude Journal Intervention

The Gratitude Journal Intervention in this study was structured across ten 60–75 minute sessions held over five weeks, with participants attending two sessions per week. The intervention was designed to cultivate an intentional practice of gratitude, enhance emotional awareness, and promote well-being and academic engagement through structured journaling, reflective dialogue, and supportive group discussions. Each session was delivered in small groups led by a trained facilitator and included guided instruction, journaling exercises, sharing experiences, and psychoeducational content based on positive psychology principles. The approach aimed to gradually build participants' gratitude habits and link them to improved psychological and academic outcomes.

Session 1: Introduction to Gratitude and Journaling

The first session introduced participants to the concept of gratitude as a positive psychological resource and its empirically supported effects on mental health and performance. Participants learned about the intervention's structure and goals, the rationale behind gratitude journaling, and were provided with personalized journals. The session included an introductory reflective writing task in which

participants listed three things they were thankful for that day, followed by group sharing and feedback.

Session 2: Identifying Sources of Gratitude

This session focused on helping participants recognize diverse sources of gratitude in daily life, including people, events, and personal traits. Through guided imagery and group discussion, participants reflected on past experiences that evoked feelings of appreciation. They then completed a journaling activity identifying at least five specific things they were grateful for in the past week, emphasizing detail and emotional connection.

Session 3: Gratitude and Positive Emotions

Participants explored the relationship between gratitude and emotional well-being. The session included psychoeducation on the broaden-and-build theory of positive emotions and how gratitude can counteract negative mood states. Participants journaled about a difficult experience and identified what, if anything, they could feel grateful for in that situation. Group discussion followed to reinforce emotional resilience through gratitude.

Session 4: Gratitude Toward Others

The focus of this session was on interpersonal gratitude. Participants reflected on people who had positively influenced them and wrote a "gratitude letter" to one of these individuals, whether or not they planned to deliver it. This exercise aimed to deepen emotional awareness and foster meaningful social connections. The group then shared reflections about the process of writing the letter.

Session 5: Mindful Gratitude Practices

This session integrated mindfulness techniques to enhance present-moment awareness of gratitude. Participants engaged in a short guided mindfulness meditation focused on bodily sensations and then transitioned to a journaling activity describing something they were grateful for using all five senses. The session emphasized grounding gratitude in sensory and immediate experience.

Session 6: Gratitude and Academic Life

Participants explored how gratitude could be applied in academic settings. They were prompted to reflect on educational opportunities, teachers, peers, and moments of academic growth. Journaling tasks involved identifying academic experiences or challenges they were grateful for and how these experiences contributed to their development. The discussion encouraged positive academic identity.

Session 7: Overcoming Barriers to Gratitude

This session addressed common cognitive and emotional barriers to experiencing gratitude, such as perfectionism,

entitlement, and negative thought patterns. Participants discussed these challenges and practiced reframing ungrateful or critical thoughts. Journaling included writing about a recent frustrating experience and identifying hidden benefits or lessons.

Session 8: Gratitude in Daily Routines

Participants learned strategies for integrating gratitude into their daily routines through habit-stacking and environmental cues. They designed personalized plans for incorporating journaling and reflection into their schedule. In their journals, they recorded instances of spontaneously noticing gratitude throughout the day and described how it affected their behavior or mood.

Session 9: Reflecting on Change

This reflective session encouraged participants to review their journals and identify patterns of emotional and cognitive change over the course of the intervention. They selected entries that stood out, discussed how their mindset had shifted, and wrote a summary reflection capturing their evolving relationship with gratitude.

Session 10: Consolidation and Closure

In the final session, participants celebrated their progress and shared their overall experiences in a group setting. They discussed how they planned to continue the gratitude practice independently and received strategies for sustaining long-term journaling habits. The session closed with a final gratitude entry and an open-ended letter to their future self reflecting on the journey.

2.4. Data Analysis

Data analysis was performed using SPSS-27 software. To evaluate the effects of the intervention on well-being and academic achievement over time, analysis of variance with repeated measurements (repeated measures ANOVA) was used. This approach allowed for comparison of changes in outcomes between the two groups across the three measurement points. When significant interactions or main effects were found, the Bonferroni post-hoc test was applied to identify specific pairwise differences and control for Type I error. All statistical tests were conducted with a significance level set at $p < .05$.

3. Findings and Results

The final sample consisted of 30 undergraduate students from various universities in Greece, with 15 participants assigned to the experimental group and 15 to the control group. Among the participants, 18 were female (60.00%) and 12 were male (40.00%). The mean age of the participants was 21.47 years ($SD = 1.36$), with ages ranging from 19 to 24 years. Regarding academic disciplines, 11 participants (36.67%) were studying social sciences, 9 participants (30.00%) were from natural sciences, 6 participants (20.00%) were enrolled in humanities programs, and 4 participants (13.33%) were from other academic fields. In terms of year of study, 10 participants (33.33%) were in their first year, 7 (23.33%) in their second year, 8 (26.67%) in their third year, and 5 (16.67%) in their fourth year.

Table 1

Means and Standard Deviations of Well-Being and Academic Achievement Scores Across Time Points

Variable	Group	Pretest ($M \pm SD$)	Posttest ($M \pm SD$)	Follow-up ($M \pm SD$)
Well-Being	Experimental	158.42 \pm 12.35	172.68 \pm 11.14	171.47 \pm 11.92
	Control	157.80 \pm 11.98	158.93 \pm 12.06	158.21 \pm 12.40
Academic Achievement (GPA)	Experimental	2.89 \pm 0.24	3.14 \pm 0.19	3.18 \pm 0.21
	Control	2.90 \pm 0.22	2.92 \pm 0.23	2.91 \pm 0.26

Descriptive statistics indicate that the mean well-being score in the experimental group increased from 158.42 ($SD = 12.35$) at pretest to 172.68 ($SD = 11.14$) at posttest, maintaining a similar level at follow-up ($M = 171.47$, $SD = 11.92$). In contrast, the control group showed negligible changes across the three stages. Likewise, the experimental group's academic achievement improved from a GPA of 2.89 ($SD = 0.24$) at pretest to 3.14 ($SD = 0.19$) at posttest, and slightly higher at follow-up ($M = 3.18$, $SD = 0.21$),

whereas the control group remained largely stable over time (Table 1).

Prior to conducting the repeated measures ANOVA, assumptions were tested and confirmed. The assumption of normality was evaluated using the Shapiro-Wilk test, which indicated non-significant results for all dependent variables at each time point (e.g., well-being at baseline: $W = 0.968$, $p = .438$; academic achievement at posttest: $W = 0.951$, $p = .227$), supporting the normal distribution of the data. The

assumption of sphericity was tested using Mauchly's test and was met for both well-being ($W = 0.974$, $p = .392$) and academic achievement ($W = 0.981$, $p = .443$), indicating that the variances of the differences between time points were equal. Levene's test confirmed homogeneity of variances

across groups (e.g., well-being at follow-up: $F(1,28) = 1.724$, $p = .200$), validating the equality of variances. These results confirmed that the data met all necessary statistical assumptions for repeated measures ANOVA.

Table 2

Repeated Measures ANOVA Results for Well-Being and Academic Achievement

Variable	Source	SS	df	MS	F	p-value	Partial η^2
Well-Being	Time	2316.52	2	1158.26	18.73	<.001	.428
	Group	1837.43	1	1837.43	29.55	<.001	.522
	Time \times Group	1984.17	2	992.08	16.03	<.001	.397
	Error	3329.61	54	61.66			
Academic Achievement	Time	0.612	2	0.306	10.44	<.001	.279
	Group	0.491	1	0.491	16.76	<.001	.374
	Time \times Group	0.433	2	0.217	7.40	.001	.215
	Error	1.582	54	0.029			

The repeated measures ANOVA revealed a significant main effect of time on well-being, $F(2, 54) = 18.73$, $p < .001$, partial $\eta^2 = .428$, and a significant interaction between time and group, $F(2, 54) = 16.03$, $p < .001$, partial $\eta^2 = .397$. A similar pattern was found for academic achievement, with a

significant effect of time, $F(2, 54) = 10.44$, $p < .001$, partial $\eta^2 = .279$, and a significant time \times group interaction, $F(2, 54) = 7.40$, $p = .001$, partial $\eta^2 = .215$, confirming that the intervention had a statistically meaningful impact on both outcomes over time (Table 2).

Table 3

Bonferroni Post-Hoc Test for Well-Being and Academic Achievement

Variable	Comparison	Mean Difference	SE	p-value
Well-Being	Pretest vs Posttest	-14.26	2.41	<.001
Well-Being	Pretest vs Follow-up	-13.05	2.58	<.001
Well-Being	Posttest vs Follow-up	1.21	1.88	.526
Academic Achievement	Pretest vs Posttest	-0.25	0.06	<.001
Academic Achievement	Pretest vs Follow-up	-0.29	0.07	<.001
Academic Achievement	Posttest vs Follow-up	-0.04	0.05	.426

The Bonferroni post-hoc test results indicate that, within the experimental group, there were statistically significant improvements in well-being scores from pretest to posttest (mean difference = -14.26, $SE = 2.41$, $p < .001$) and from pretest to follow-up (mean difference = -13.05, $SE = 2.58$, $p < .001$), with no significant difference between posttest and follow-up ($p = .526$). Similarly, academic achievement showed significant gains from pretest to posttest (mean difference = -0.25, $SE = 0.06$, $p < .001$) and from pretest to follow-up (mean difference = -0.29, $SE = 0.07$, $p < .001$), with no significant change between posttest and follow-up ($p = .426$). These findings support the sustained impact of the gratitude journal intervention over time (Table 3).

4. Discussion and Conclusion

The results of this study demonstrated that the gratitude journal intervention led to significant improvements in both well-being and academic achievement among Greek university students in the experimental group compared to the control group. Participants who engaged in structured gratitude journaling over a five-week period reported statistically significant increases in psychological well-being from pretest to posttest, and these gains were maintained at the five-month follow-up. Additionally, academic achievement, measured via self-reported GPA and verified by institutional records, showed a positive upward trend in the experimental group, while the control group exhibited minimal change over the same period. These findings

suggest that cultivating gratitude through journaling can have both emotional and cognitive benefits for university students, supporting its integration into student well-being programs and academic support services.

The sustained improvement in psychological well-being aligns with a growing body of research emphasizing the emotional benefits of gratitude-based interventions. For example, Bohlmeijer et al. found that gratitude exercises produced lasting effects on mental health up to six months post-intervention, offering evidence that gratitude is not only effective but also enduring in its psychological impact {Bohlmeijer, 2020 #157603}. Similarly, Benjamin and Holliman reported improved well-being and student engagement following a structured gratitude journaling program, noting that the intervention promoted a more positive outlook and enhanced emotional regulation in academic settings {Benjamin, 2022 #157578}. The present study echoes these outcomes and confirms that such interventions are both feasible and impactful in a university population.

This improvement in well-being may also be explained through the broaden-and-build theory, which suggests that positive emotions like gratitude expand individuals' thought-action repertoires and build psychological resources over time {Wong, 2024 #157598}. Through consistent journaling, participants likely began to reframe negative experiences and focus more on positive aspects of their daily lives, resulting in emotional resilience and enhanced subjective well-being. As seen in a study by Cumella, nurses who maintained gratitude journals reported increased optimism and reduced emotional fatigue, demonstrating that gratitude fosters a resourceful mindset in high-stress environments {Cumella, 2022 #157600}. Although university students face different stressors, the mechanism by which gratitude enhances mental strength appears consistent across groups.

The positive impact on academic achievement found in this study is particularly noteworthy. Participants in the experimental group reported improvements in GPA, and this was supported by verified academic records. This suggests that gratitude not only enhances emotional well-being but may also have a cognitive or motivational effect that influences academic behavior. These results are consistent with the findings of Nawa and Yamagishi, who observed enhanced academic motivation in students after a two-week online gratitude intervention {Nawa, 2021 #157568}. Similarly, Ross et al. found that gratitude journaling contributed to academic resilience, allowing students to

reframe academic setbacks as learning opportunities {Ross, 2022 #157575}. The present study supports these findings and expands them by showing that academic benefits can persist over several months.

The link between gratitude and enhanced academic performance may be explained by improved emotional regulation and motivation. Gratitude encourages students to adopt a growth mindset and appreciate their educational opportunities rather than focusing on failures or pressures. According to Taruna et al., gratitude and hope jointly contribute to psychological well-being in youth, and these factors also support goal-setting and academic persistence {Taruna, 2022 #157584}. Moreover, students who consistently recognize what is going well in their academic journey may be more likely to remain engaged, seek support when needed, and view learning challenges as manageable. Khanna and Singh demonstrated that integrating gratitude journaling into classroom practice improved students' motivation and emotional regulation, both of which are key predictors of academic success {Khanna, 2021 #157589}.

The enduring effects of the intervention observed at the five-month follow-up suggest that gratitude journaling fosters habits of positive thinking that extend beyond the duration of the program. Cregg and Cheavens noted in their meta-analysis that gratitude interventions can significantly reduce symptoms of depression and anxiety, particularly when practiced over an extended period {Cregg, 2020 #157601}. This sustained benefit likely reflects the internalization of gratitude as a cognitive and emotional habit. In the current study, many participants reported continuing their journaling practice beyond the intervention period, suggesting that the structured sessions had helped establish a routine that supported long-term change.

Furthermore, the present study's findings are consistent with previous research conducted in various cultural contexts. For instance, Yoo found that gratitude positively correlated with subjective well-being among Koreans, indicating that the psychological benefits of gratitude are not culturally bound {Yoo, 2020 #157574}. In Indonesia, Ilmi and Kusdiyati found that teachers with unfixed salaries who practiced gratitude maintained higher levels of well-being despite financial stressors, reinforcing the notion that gratitude can buffer against adversity {Ilmi, 2019 #157599}. Similarly, Megawati et al. demonstrated that gratitude training significantly improved subjective well-being among adolescents in orphanages, highlighting the adaptability of gratitude interventions to different populations and life circumstances {Megawati, 2019 #157596}. The current

study extends these findings to the Greek university context, offering further cross-cultural evidence for the efficacy of gratitude interventions.

The positive emotional effects of gratitude journaling also reflect broader social and behavioral changes. According to Tong and Oh, gratitude contributes to adaptive coping during stressful events, such as the COVID-19 pandemic, by encouraging perspective-taking and emotional regulation {Tong, 2021 #157605}. Day et al. found that public expressions of gratitude during the pandemic helped foster a collective sense of appreciation and social cohesion, which may indirectly support individual well-being {Day, 2021 #157586}. In this study, participants in the experimental group often noted that journaling helped them appreciate the support systems around them—peers, teachers, and family—which in turn may have enhanced their social connectedness and academic engagement.

The integration of emotional, cognitive, and social processes within the gratitude journaling practice supports its multidimensional benefits. Ko et al. found that nursing students who engaged in gratitude journaling during the pandemic reported not only reduced stress but also increased awareness of positive experiences in their training, leading to greater academic focus and resilience {Ko, 2021 #157588}. Similarly, Conley et al. showed that expressing gratitude in early professional experiences helped new nurses adjust to workplace demands more effectively {Conley, 2022 #157579}. These findings parallel the experiences of students in the present study, who shared that reflecting on academic opportunities and personal growth helped them reframe stress and increase their sense of purpose.

Lastly, this study complements prior findings that emphasize the psychological mechanisms underlying gratitude's impact. O'Connell et al. proposed that gratitude improves psychological outcomes by enhancing social bonds, increasing life satisfaction, and reducing maladaptive thought patterns such as rumination and self-criticism {O'Connell, 2017 #157597}. The current findings align with this theoretical model, as participants frequently described experiencing a greater sense of emotional clarity, reduced anxiety, and an increased ability to cope with academic pressure. These emotional shifts are likely key contributors to both the well-being and academic improvements observed over time.

5. Limitations & Suggestions

Despite the encouraging results, this study has several limitations. First, the sample size was relatively small ($n = 30$), which may limit the generalizability of the findings. While the randomized controlled design strengthens the internal validity of the study, the limited number of participants, all from Greek universities, restricts the ability to extend these results to more diverse student populations. Second, although GPA was verified through institutional records, well-being was assessed using self-report measures, which may be subject to response biases. Third, while the five-month follow-up offers insight into the intervention's durability, longer-term outcomes beyond this period remain unknown. Additionally, although participants were randomly assigned to groups, individual differences in baseline motivation or prior journaling experience were not controlled, which may have influenced the degree of benefit.

Future research should consider expanding the sample size and including participants from multiple cultural and academic contexts to enhance the external validity of the findings. Longitudinal studies with follow-up periods of one year or more would help determine the sustained effects of gratitude journaling on academic and psychological outcomes. Researchers could also explore the interaction between gratitude and other psychological variables such as emotional intelligence, resilience, or mindfulness to identify potential mediating factors. Comparative studies involving other positive psychology interventions, such as strengths-based exercises or hope-building programs, could further clarify the unique contribution of gratitude journaling. In addition, qualitative methods such as in-depth interviews or journaling content analysis may provide richer insights into how participants experience and internalize gratitude over time.

Given the effectiveness and simplicity of the intervention, educational institutions should consider integrating gratitude journaling into existing student support programs or first-year orientation courses. Counselors and academic advisors can recommend structured gratitude exercises as part of broader mental health promotion strategies. Instructors might also incorporate brief gratitude reflections into classroom routines to foster a positive emotional climate. Finally, digital tools and mobile applications could be developed to support daily gratitude practices, making the intervention more accessible and engaging for students in diverse educational settings.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors significantly contributed.

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