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# Acceptance and Commitment Therapy versus Expressive Writing Therapy for Emotional Regulation and Emotional Numbing among Nursing Students

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**ABSTRACT**

Emotional numbing among nursing students can impair emotional regulation and increase vulnerability to psychological distress. This study aimed to compare the effectiveness of ACT and EWT in enhancing emotional regulation and reducing emotional numbing. A quasi-experimental pretest–posttest two-group design was conducted, involving 52 nursing students selected through purposive sampling and subsequently assigned to intervention groups primarily through random allocation. Emotional regulation was measured using DERS, while emotional numbing was assessed with the ERNS-G. Data were analysed using paired t-tests and ANCOVA to compare posttest outcomes while controlling for pretest scores. Both ACT and EWT significantly improved emotional regulation and reduced emotional numbing within groups ($p < .05$). However, ANCOVA revealed no statistically significant differences between ACT and EWT in emotional regulation ($F = 1.373$, $p = .247$, $\eta^2 = .027$) or emotional numbing ($F = 0.791$, $p = .378$, $\eta^2 = .016$) after controlling for pretest scores. Both ACT and EWT were effective in improving emotional regulation and reducing emotional numbing among nursing students. Nevertheless, no statistically significant difference in effectiveness was found between the two interventions.

*Mati rasa emosional di kalangan mahasiswa keperawatan dapat mengganggu regulasi emosi dan meningkatkan kerentanan terhadap tekanan psikologis. Penelitian ini bertujuan untuk membandingkan efektivitas ACT dan EWT dalam meningkatkan regulasi emosi dan mengurangi mati rasa emosional. Desain quasi-eksperimental dengan pretest–posttest dalam dua kelompok telah dilaksanakan, melibatkan 52 mahasiswa keperawatan yang dipilih melalui purposive sampling dan kemudian ditugaskan ke kelompok intervensi terutama melalui alokasi acak. Regulasi emosi diukur menggunakan DERS, sementara mati rasa emosional dinilai dengan ERNS-G. Data dianalisis menggunakan uji t berpasangan dan ANCOVA untuk membandingkan hasil posttest sambil mengontrol skor pretest. Baik ACT maupun EWT secara signifikan meningkatkan regulasi emosi dan mengurangi mati rasa emosional pada masing-masing kelompok ($p < .05$). Namun, hasil ANCOVA menunjukkan tidak terdapat perbedaan yang signifikan antara ACT dan EWT dalam regulasi emosi ($F = 1.373$, $p = .274$, $\eta^2 = .027$) maupun mati rasa emosional ($F = 0.791$, $p = .378$, $\eta^2 = .016$) setelah mengontrol skor pretest. ACT dan EWT sama-sama efektif dalam meningkatkan regulasi emosi dan mengurangi mati rasa emosional pada mahasiswa keperawatan. Namun, tidak ditemukan perbedan efektivitas yang signifikan antara kedua intervensi.*



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## Introduction

Emotional numbing refers to a diminished capacity to experience or express emotions, particularly positive affect, and is commonly accompanied by emotional detachment and reduced engagement in interpersonal and meaningful activities (Litz & Gray, 2002). Although initially conceptualized as a core feature of trauma-related psychopathology, emotional numbing has also been documented in non-clinical populations exposed to sustained stress, including university students (Flack et al., 2005). In academic settings, persistent academic and psychosocial demands may lead students to disengage emotionally as a maladaptive coping response, which is associated with impaired psychological well-being, interpersonal difficulties, and reduced academic involvement (Flack et al., 2005; Popescu & Wanjiku, 2025). Conceptually, emotional numbing may function as a defensive response that facilitates temporary emotional disengagement when emotional demands exceed coping capacity (Lytle, 2014). When this pattern is sustained, it reflects not merely an absence of emotional experience but a disruption in emotional flexibility and adaptive responding (Dyball et al., 2025). Taken together, these findings position emotional numbing as a core emotional problem that warrants examination in relation to emotion regulation processes among students.

Emotion regulation plays a central role in shaping individuals' emotional responses by enabling the modulation, expression, and recovery of emotional experiences in accordance with situational demands (Ali, 2023; Todd et al., 2020). Emotion regulation involves coordinated cognitive, emotional, and social processes that allow individuals to manage emotional reactions in adaptive ways (Gross, 1998; Gross & John, 2003). Adaptive strategies, particularly cognitive reappraisal, enable individuals to reinterpret emotional stimuli in ways that reduce emotional reactivity without increasing psychological strain (McRae & Gross, 2020). In contrast, maladaptive strategies such as emotional suppression and avoidance are associated with heightened distress and poorer psychological adjustment. Evidence suggests that students, especially in the early years of higher education, tend to rely more on maladaptive coping strategies and demonstrate limited use of adaptive regulation, increasing vulnerability to emotional disengagement (Chen et al., 2022; Park et al., 2020). Empirical findings further indicate that emotional numbing is closely associated with maladaptive regulation strategies under prolonged academic and psychosocial strain (Easdale-Cheele et al., 2024; Flack et al., 2005; Kalogeropoulos & Papadopoulos, 2024). From a complementary perspective, emotional numbing has also been linked to disruptions in affective processing systems, reflecting an automatic defensive response to overwhelming stress rather than a mere absence of emotional experience (Korem et al., 2022).

In academic contexts, persistent affective disturbances can negatively influence students' academic engagement, social functioning, and psychological well-being (Hayat et al., 2020). Emotional numbing, in particular, has been associated with reduced involvement in meaningful academic activities, impaired interpersonal relationships, and an increased risk of academic burnout (Cahart et al., 2024; Madigan & Curran, 2021). Anhedonia, as a prominent manifestation of emotional numbing, further diminishes responsiveness to positive stimuli and moderates the effectiveness of adaptive processes such as mindfulness in reducing depressive and anxiety symptoms (Abouzaid & Abdelhamid, 2023). Collectively, these findings position emotional numbing as a clinically and functionally significant outcome of disrupted emotion regulation, underscoring the need for targeted psychological interventions within student populations.

In Southeast Asia, including Indonesia, epidemiological data indicate a substantial burden of mental health problems within the general population, as reflected in high rates of depression, anxiety, and emotional distress. The World Health Organization South-East Asia Regional Office reports that more than 9 million individuals in Indonesia experience depression, accounting for approximately 3.7% of the population (World Health Organization, 2017). Similarly, findings from the Global Burden of Disease 2019 identify mental disorders—particularly depression and anxiety—as leading contributors to global disability (GBD Mental Disorders Collaborators, 2022). National data from the 2018 Basic Health Research Survey (Riskesdas) further indicate that 9.8% of individuals aged 15 years and older report emotional mental health problems, reflecting widespread affective disturbance in the population (Kementrian Kesehatan RI, 2019). Although these large-scale epidemiological surveys primarily assess general psychological symptoms rather than specific emotional

processes, such patterns of persistent distress suggest the involvement of underlying disruptions in emotion regulation, which may manifest in less overt forms such as emotional disengagement or emotional numbing (Litz & Gray, 2002; McRae & Gross, 2020). Evidence from student populations further reinforces this concern, with international studies reporting high rates of depressive and anxiety symptoms among university students (Auerbach et al., 2018; Li et al., 2022). In Indonesia, approximately 40% of individuals within academic communities report symptoms of depression and anxiety based on screening measures (Setiyadi et al., 2025), indicating a high-risk context in which emotional numbing may function as a key indicator of maladaptive emotional regulation rather than a distinct diagnostic category.

Local screening data from 273 nursing students at Universitas Pendidikan Indonesia indicate notable emotional vulnerability. Participants completed the Difficulties in Emotion Regulation Scale (DERS) (Gratz & Roemer, 2004) and the Emotional Reactivity and Numbing Scale (ERNS) (Orsillo et al., 2007), which assess multidimensional difficulties in emotion regulation and disruptions in affective responses, respectively. Participants with elevated DERS and ERNS-G scores were interpreted as showing increased susceptibility to difficulties in emotion regulation and emotional disengagement. Given the absence of universally accepted clinical thresholds for these measures, the screening outcomes were used to identify relative levels of emotional risk and should not be interpreted as diagnostic determinations (Guzmán-González et al., 2020). Approximately one-third of participants obtained relatively higher scores on both measures, suggesting a considerable level of emotional vulnerability within the student population. Consistent with broader evidence linking difficulties in emotion regulation to trauma-related affective symptoms and emotional disengagement, studies have shown that higher levels of emotion regulation difficulties are associated with posttraumatic stress symptom patterns, including numbing and avoidance processes, indicating that emotion regulation deficits can underlie emotional numbing phenomena (Meuleman et al., 2024). The DERS evaluates non-acceptance of emotional responses, impaired goal-directed behavior, impulsivity, limited emotional awareness, restricted access to regulation strategies, and low emotional clarity, while the ERNS assesses emotional reactivity and numbing patterns. These screening results underscore the need for evidence-based psychosocial interventions supporting emotional regulation and adaptive coping skills among nursing students.

Interventions aimed at improving emotional regulation within student populations are primarily non-pharmacological and include approaches such as Cognitive Behavioral Therapy (CBT), mindfulness training, and the TARGET program for affect and trauma regulation (Ford et al., 2017; Pablo et al., 2023). Among the approaches, ACT and EWT have received increasing attention due to their focus on mindfulness, acceptance of internal experiences, and emotional processing through narrative expression (Nabila et al., 2024; Yuan et al., 2024). ACT aims to enhance psychological flexibility by encouraging acceptance of internal experiences and promoting actions that align with one's values in life. In contrast, EWT facilitates emotional processing through structured reflective writing—both approaches have the potential to reduce underlying patterns of emotional suppression that contribute to emotional numbing (Nabila et al., 2024; Yuan et al., 2024). EWT may help reduce emotional numbing by facilitating emotional expression through writing, thereby encouraging individuals to confront their emotions rather than avoid them. This process helps people get back in touch with their emotions and feel more connected to their inner experiences, which is thought to help them feel less disconnected and more emotionally engaged (Hoyt et al., 2021; Swanbon et al., 2008).

Although previous studies have demonstrated the effectiveness of ACT and EWT independently in enhancing emotion regulation and emotional engagement, direct comparative research examining both interventions—particularly within Indonesian student populations—remains limited (Nabila et al., 2024; Yuan et al., 2024). The majority of local studies focus on academic stress, anxiety, or burnout without explicitly discussing the issue of emotional numbing (Setiyadi et al., 2025).

This study aimed to evaluate the effectiveness of ACT and EWT in improving emotion regulation and reducing emotional numbing among nursing students. Emotion regulation was assesed using DERS and emotional numbing was measured with the ERNS-G. The research also examined differences in outcomes between the two therapies. The findings are expected to support the development of psychological intervention programs in Indonesian higher education institutions.

## Research Methodology

### Study Design

A quasi-experimental two-group pretest-posttest design was used to investigate the comparative effectiveness of ACT and EWT in improving emotional regulation among university students who displayed symptoms of emotional numbing. The study was considered quasi-experimental due to practical constraints that limited the use of full randomization, while still allowing for the assessment of changes in emotion regulation and emotional numbing before and after the intervention (Singh, 2021).

### Population and Sample Size

The study population comprised undergraduate nursing students enrolled between the academic years 2022 and 2024 at the Faculty of Sport and Health Education at Universitas Pendidikan Indonesia. The sample size calculation was conducted using G*Power version 3.1.9.7, applying parameters for an independent t-test involving two groups, with a significance threshold (α) of 0.05, a statistical power of 0.80, and a large anticipated effect size (d = 0.8) (Faul et al., 2009; Lakens, 2022). Based on this calculation, the minimum number of participants required was 52, with 26 in each of the ACT and EWT groups. To account for a potential 15% dropout rate, the targeted number of respondents was set at 60 students. An effect size of 0.8 was conservatively selected because previous studies demonstrated considerable variation. Prior research reported a high effect size (d = 1.78) in clinical contexts with limited samples, as well as large effects in more heterogeneous populations. Therefore, a value of 0.8 was chosen as a realistic estimate to maintain statistical power and the validity of the study results (Lakens, 2022).

### Sampling Technique, Eligibility and Group Allocation

Purposive sampling was employed to identify students exhibiting elevated emotional vulnerability relevant to the study objectives. Inclusion criteria required participants to be active nursing students aged 18-25 years, demonstrate relatively higher levels of emotion regulation difficulties and emotional numbing based on DERS and ERNS-G screening results (Gratz & Roemer, 2004; Guzmán-González et al., 2020; Meuleman et al., 2024; Orsillo et al., 2007). Participants were also required to commit to attending all intervention sessions and provide written informed consent. Exclusion criteria included students currently undergoing psychological therapy or intensive counseling, those taking psychotropic or antidepressant medications, and individuals with a history of severe psychiatric conditions (e.g., schizophrenia, bipolar disorder, severe PTSD). Participants missing two or more sessions of EWT or three or more sessions of ACT were excluded from analysis.

Of the 273 screened students, 60 consented to participate, with 8 subsequently withdrawing, yielding a final sample of 52. Participants were randomly allocated to the ACT and EWT groups; however, for a small subset (n = 1–2), allocation was constrained by scheduling availability. As such, the study is classified as quasi-experimental**,** reflecting these practical constraints while maintaining methodological transparency and minimizing allocation bias (Swarjana & Ketut, 2022).

### Instruments

This study employed two instruments to assess emotional regulation and emotional numbing among nursing students. The Difficulties in Emotion Regulation Scale (DERS) (Gratz & Roemer, 2004) is a 36-item self-report questionnaire evaluating six domains of emotion regulation difficulties: non-acceptance of emotional responses, difficulty engaging in goal-directed behavior, impulse control difficulties, limited emotional awareness, restricted access to regulation strategies, and low emotional clarity. The Emotional Reactivity and Numbing Scale (ERNS) (Orsillo et al., 2007) was used to assess emotional reactivity and numbing, with the present study focusing on the General subscale (ERNS-G) to capture emotional numbing, including reduced emotional responsiveness and feelings of emptiness.

Both instruments underwent forward-backward translation into Indonesian, followed by psychometric testing. Initial validation and reliability testing were conducted on a sample of 55 university students, which identified several items (7–8 per instrument) that did not meet validity criteria. These items were subsequently revised and re-tested in a smaller sample of 15 students, after which all items reached statistical significance for validity

($p < 0.05$) and demonstrated high internal consistency (Cronbach's alpha: DERS = 0.939; ERNS-G = 0.946), indicating acceptable reliability.

For scoring and classification, participants' responses were interpreted using relative score distributions informed by previous psychometric studies and normative data reported in the literature (Guzmán-González et al., 2020), allowing the identification of individuals with relatively greater emotion-regulation difficulties and emotional numbing. This stepwise process—including translation, validity testing, reliability assessment, and participant screening procedures—ensured that both instruments were psychometrically appropriate for the target population, while providing defensible measures for subsequent screening and analysis.

**Intervention**

Interventions aimed at improving emotional regulation in this study included both ACT and EWT, implemented using structured protocols to ensure efficacy and fidelity. The ACT intervention comprised four 90–120 minute group sessions, focusing on mindfulness, identification of personal values, cognitive defusion, and experiential exercises designed to reduce experiential avoidance and enhance psychological flexibility (Blackledge & Hayes, 2001). Participants engaged in role-playing, guided reflection, and at-home mindfulness exercises to reinforce self-acceptance and adaptive action. Fidelity and adherence were monitored through structured checklists, observation by trained facilitators, and regular supervision meetings, following best-practice recommendations for intervention monitoring (Hansen et al., 2014).

The EWT intervention consisted of three individual sessions based on the Pennebaker framework, including preparatory mindfulness exercises, a 20-minute core writing phase, and a 60–90 minute reflective debriefing phase. The writing phase followed a four-stage structure—recognition, examination, comparison, and application-to-self—which allowed participants to explore emotional experiences more fully and absorb insights from reflection (Asari et al., 2023). This structure was intended to sequentially activate emotional processing and facilitate engagement with internal experiences, reducing emotional numbing. Empirical support indicates that expressive writing tasks deepen emotional processing and are associated with reductions in distress and anxiety symptoms (Harrington et al., 2018). Sessions were conducted in person or via secure online platforms, with attendance logged and immediate access to counselling provided when needed.

The difference in the number of sessions between ACT and EWT was based on the original therapeutic frameworks from which each intervention was adapted. ACT is commonly delivered through multiple structured sessions involving mindfulness practice, values clarification, cognitive defusion, and behavioral exercises that require progressive skill development across meetings (Blackledge & Hayes, 2001). In contrast, EWT is traditionally implemented as a brief intervention consisting of a limited number of writing sessions focused on emotional disclosure and reflective processing (Pennebaker & Chung, 2011). Therefore, the intervention schedules used in this study were designed to remain consistent with established protocols while preserving intervention fidelity.

Consequently, total facilitator–participant interaction time ranged from approximately 360–480 minutes for ACT and 180–270 minutes for EWT. Both interventions began with mindfulness-based induction to promote interoceptive awareness and readiness for emotional engagement, a mechanism shown to facilitate emotional processing and reduce experiential avoidance (Blackledge & Hayes, 2001; Guendelman et al., 2017). Observers and facilitators independently monitored adherence and participant engagement using structured tools, providing a defensible standard for fidelity and outcome assessment (Hansen et al., 2014). The combination of structured protocols, mindfulness induction, and multi-level monitoring supports the validity and reliability of the interventions, while grounding them in both empirical evidence and practical feasibility.

**Setting and Timeline**

The Psychiatric Nursing Laboratory, Faculty of Sports and Health Education, Universitas Pendidikan Indonesia, was the location for all interventions from June to August 2025. All studies were conducted over two months. The collection of data was based on pre-test questionnaires administered before the first intervention session and post-test questionnaires completed after all sessions.

**Data Analysis**

IBM SPSS Statistics version 27 for Windows (Santoso, 2014) was used for data analysis. Data normality was assessed using the Kolmogorov–Smirnov test. For normally distributed data ($p > .05$), paired-sample t-tests were conducted to examine pre–post changes within each intervention group. For non-normally distributed data ($p < .05$), the Wilcoxon signed-rank test was applied.

To account for potential baseline differences inherent in the quasi-experimental design, analysis of covariance (ANCOVA) was performed with post-test scores as the dependent variable, intervention group as the fixed factor, and pre-test scores as covariates. This analysis was used to evaluate between-group differences after controlling for baseline measurements.

Effect sizes were also calculated. The formula r = Z/N was used to compute Cohen's d for data that had a normal distribution, and it did not apply to data with an exception. Among the effect sizes, they were classified as small (0.2), medium (0.5), and large (0.8).

**Ethical Approval**

The Health Research Ethics Committee at Universitas Jenderal Achmad Yani Cimahi has granted approval for this study (Approval Number: 115/KEPK/FITKes-Unjani/VI/2025). Individuals who participated in the study also provided their written consent by signing a form. It was conducted in a confidential manner, following guidelines that included the recognition and respect for people's freedom of choice (Beauchamp & Childress, 2019; Haryani & Setyobroto, 2022).

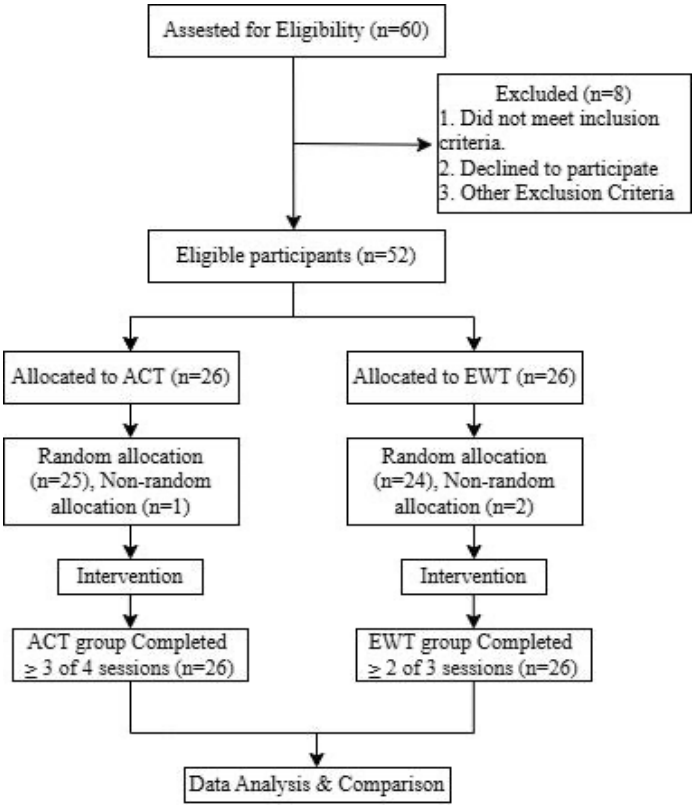



**Figure 1. Participant Flow Diagram**

## Result

### Demographic Characteristics of the Participants

The research findings are presented in Table 1. Based on the data, the majority of respondents were female (46 participants; 88.5%), while male respondents accounted for 6 participants (11.5%). Most respondents were aged between 20 and 21 years (31 participants; 59.6%), with the largest proportion coming from the 2024 year of enrollment (21 participants; 40.4%). Additionally, most respondents reported having no history of mental health disorders (44 participants; 84.6%) and had never participated in a psychosocial programme before (38 participants; 73.1%). Only 14 respondents (26.9%) had prior experience participating in psychosocial activities, and 8 respondents (15.4%) reported a history of mental health problems.

The results show that most participants were early adults engaged in higher education and had limited exposure to psychosocial interventions. This situation reflects the general characteristics of the student population, who are in a developmental phase of transition towards emotional and social independence. During this phase, identity changes, academic demands, and interpersonal relationship dynamics often generate psychological stress that affects their emotional regulation and mental well-being (Fernanda et al., 2024; Park et al., 2020; Sanchez-Sanchez et al., 2025).

**Table 1.**
Distribution of Respondents Based on Age, Gender, Year of Enrollment, History of Mental Health Problems, and History of Psychososial Program Participation (n=52)

| Demographic Data | n | % |
|---|---|---|
| **Age** | | |
| 18 | 2 | 3.8 |
| 19 | 11 | 21.2 |
| 20 | 14 | 26.9 |
| 21 | 17 | 32.7 |
| 22 | 7 | 13.5 |
| 23 | 1 | 1.9 |
| **Gender** | | |
| Male | 6 | 11.5 |
| Female | 46 | 88.5 |
| **Year of Enrollment** | | |
| 2021 | 5 | 9.6 |
| 2022 | 15 | 28.8 |
| 2023 | 11 | 21.2 |
| 2024 | 21 | 40.4 |
| **History of Mental Health Problems** | | |
| Yes | 8 | 15.4 |
| No | 44 | 84.6 |
| **History of Psychosocial Program Participation** | | |
| Yes | 14 | 26.9 |
| No | 38 | 73.1 |

### Effectiveness of ACT and EWT Interventions on Emotion Regulation (DERS) and Emotional Numbing (ERNS-G)

The main analyses were preceded by assumption testing. In both the ACT and EWT groups, the Kolmogorov-Smirnov and Shapiro-Wilk tests showed that all data sets for DERS and ERNS-G variables were normally distributed ($p > .05$). Similarly, Levene's test revealed that the groups had comparable variances ($p > .05$). This is why we conducted parametric tests as the next phase of analysis.

In this study, all 52 participants completed the intervention and provided both pre-test and post-test data with a retention rate of 100%. There was no evidence of withdrawal or psychological effects during the implementation period among the participants.

Paired-sample t-test analyses demonstrated significant improvements in both intervention groups. In the ACT group, DERS scores decreased significantly from pre-test to post-test ($t = 7.686$, $p < .001$, $d = 1.51$), indicating improved emotion regulation. Similarly, the EWT group showed a significant reduction in DERS scores ($t = 4.602$, $p < .001$, $d = 0.90$). For emotional numbing, ERNS-G scores increased significantly following the intervention in both groups, with significant changes observed in the ACT group ($t = 3.934$, $p = .001$, $d = 0.77$) and the EWT group ($t = 2.935$, $p = .007$, $d = 0.58$).

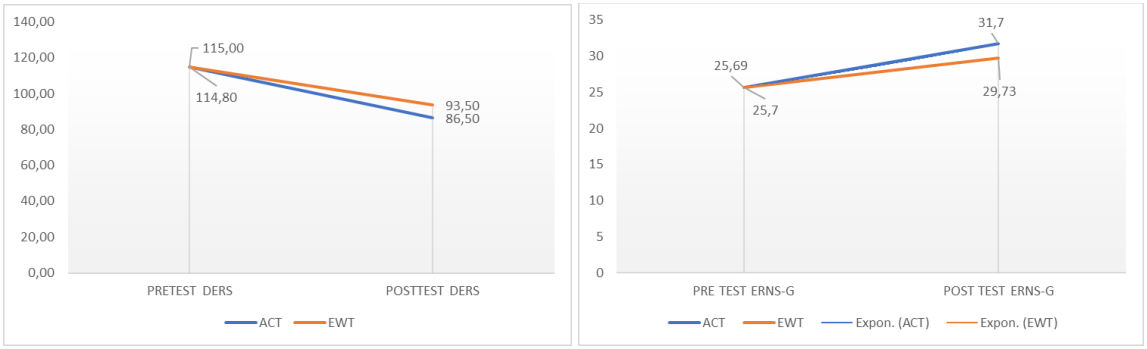
Both treatments resulted in higher scores on the Emotional Reactivity and Numbing Scale – General Subscale, which reduced emotional numbing. The ACT group showed higher mean change than the EWT (see table 2).

After controlling for baseline scores using ANCOVA, no significant differences were found between the ACT and EWT groups on post-test DERS scores ($F = 1.37$, $p = .247$, $\eta^2 = .027$), indicating that both interventions were similarly effective in improving emotion regulation. Likewise, no significant between-group difference was observed for ERNS-G scores ($F = 0.791$, $p = .378$, $\eta^2 = .016$), suggesting that although both interventions were associated with reductions in emotional numbing, neither intervention demonstrated a statistically significant advantage over the other.

The results demonstrate that the ACT and EWT interventions were successful in improving emotion regulation and decreasing emotional numbing among nursing students.

**Table. 2**
Comparison of Mean Scores and ANCOVA Results for DERS and ERNS-G between ACT and EWT Groups (N = 52)

| Variable | Group | Pre-test Mean ± SD | Post-test Mean ± SD | t | p | Cohen's d | F (ANCOVA) | P (ANCOVA) | Partial $\eta^2$ |
|---|---|---|---|---|---|---|---|---|---|
| DERS | ACT | 114.77 ± 16.6 | 86.65 ± 24.9 | 7.686 | <.001 | 1.51 | 1.373 | .247 | .027 |
| | EWT | 115.04 ± 12.9 | 93.46 ± 19.9 | 4.602 | <.001 | 0.90 | | | |
| ERNS-G | ACT | 28.23 ± 6.09 | 31.73 ± 4.48 | 3.934 | .001 | 0.77 | 0.791 | .378 | .016 |
| | EWT | 25.69 ± 5.06 | 29.73 ± 5.31 | 2.935 | .007 | 0.58 | | | |




**(1)** **(2)**

**Figure 2.** Comparison of (1) DERS and (2) ERNS-G Scores Between ACT and EWT Groups at Pretest and Posttest.

## Discussion

This study compared the effectiveness of ACT and EWT in improving emotion regulation and reducing emotional numbing among nursing students. Both methods were found to be effective in emotion regulation, as demonstrated by the Difficulties in Emotion Regulation Scale (DERS), and both also reduced emotional numbing, as measured by the Emotional Reactivity and Numbing Scale – General subscale (ERNS-G). The lack of significant differences between ACT and EWT may indicate that both interventions act through overlapping mechanisms related to emotional engagement and processing. Although ACT emphasizes mindfulness, acceptance, and psychological flexibility, EWT encourages emotional expression and reflection through structured writing (Bennett & Oliver, 2025; Harris, 2021; Webb, 2023). Both approaches reduce emotional avoidance and increase awareness of internal experiences, which are central processes in emotion regulation. Furthermore, the mindfulness-based preparation included in the EWT sessions may have facilitated greater awareness of internal experiences, partially reflecting processes that are also emphasized in ACT. Although these mechanisms were not directly measured in the present study, they may have contributed to the comparable outcomes observed between groups (Guendelman et al., 2017; Pennebaker & Chung, 2012).

Emotional numbing has been associated with reduced activity in the amygdala and the prefrontal cortex, which may impair emotional reactivity and emotion regulation capacity (Korem et al., 2022; Mazza et al., 2016). The mindfulness component of ACT may help counteract these neural patterns by enhancing interoceptive awareness — the ability to detect and interpret internal bodily signals (e.g., changes in heartbeat, breathing, or visceral sensation). Enhanced interoceptive awareness may support the restoration of neural circuits involved in emotional processing, and mindfulness-based interventions have been shown to improve physiological flexibility markers, such as heart-rate variability, which are associated with adaptive emotion regulation (Korem et al., 2022; Pozzi et al., 2021).

EWT resulted in significant improvements in emotion regulation and emotional awareness. Expressive writing may facilitate emotional processing by encouraging individuals to reflect on and organize emotionally meaningful experiences. In particular, expressive writing strengthens not only the memory but also the emotional processing of language through recollection and metaphor (Cheung et al., 2021; Forster & Kuhbandner, 2022). The act of writing can provide a structured means to externalize distress, organize experiences, and derive meaning (Renzi et al., 2020). Although EWT does not emphasize acceptance and experiential engagement as explicitly as ACT, the structured process of emotional disclosure may encourage individuals to explore, organize, and reflect on emotionally meaningful experiences. Through this process, participants may develop greater emotional awareness and understanding, which can contribute to improvements in emotion regulation and emotional engagement.

An additional finding of practical relevance was that EWT produced outcomes comparable to ACT despite requiring considerably less intervention time. Participants in the ACT group received approximately 420 minutes of therapeutic contact, whereas those in the EWT group participated in about 225 minutes. Although the present study did not specifically examine cost-effectiveness or intervention efficiency, this result suggests that meaningful improvements in emotional regulation and emotional engagement can be achieved through relatively brief therapeutic approaches. Expressive writing has long been regarded as a simple and accessible intervention that encourages individuals to process emotionally significant experiences within a limited number of sessions (Pennebaker & Chung, 2012). From a practical perspective, EWT may offer a feasible option for higher education settings where time, personnel, and mental health resources are often limited.

The observed reductions in DERS scores across both interventions are consistent with conceptualizations that emotional numbing and emotion dysregulation are interrelated. Individuals may rely on maladaptive coping strategies, such as emotional suppression, rumination, or avoidance, which contribute to emotional numbing and difficulties in emotion regulation (Muñoz-Navarro et al., 2022; Wallace & Docherty, 2020). Improvements in regulation suggest a shift toward more adaptive strategies, aligning with contemporary models of emotion regulation (Gadassi-Polack et al., 2020). Given that university students are frequently exposed to chronic academic and psychosocial stressors, it is hypothesized that both ACT and EWT may offer preventive emotional benefits in nonclinical student populations (Wijbenga et al., 2024; Yao et al., 2024).

In summary, this study indicates that both ACT and EWT represent effective psychological approaches for supporting students in managing emotional experiences and reducing emotional numbing. Although the interventions are grounded in different therapeutic principles, both were associated with meaningful improvements in emotion regulation and emotional engagement among nursing students. These findings suggest that ACT and EWT may serve as valuable non-pharmacological approaches for promoting emotional well-being within higher education settings.

**Strengths and Limitations**

There are several notable strengths to this research. This study is among the pioneering comparative investigations in Indonesia examining the effectiveness of ACT and EWT in enhancing emotion regulation and reducing emotional numbing among university students. The research employed a quasi-experimental pretest–posttest design with two distinct groups, and the use of ANCOVA strengthened internal validity by accounting for baseline differences between groups. In addition, both therapeutic interventions were delivered systematically, following established protocols and facilitated by trained professionals under expert supervision. Specifically, ACT sessions were conducted under supervision of a mental health nursing expert, following standard ACT procedures and established literature, ensuring fidelity despite the absence of formal certification of the researcher.

Nevertheless, several limitations merit consideration. First, the sample size was relatively small (n = 52) and drawn from a single institution, which may limit the generalizability of the findings. Although most participants were randomly allocated to the ACT and EWT groups, some assignments were non-random due to scheduling constraints, introducing potential allocation bias and reinforcing the classification of this study as quasi-experimental in nature. Second, there was a substantial disparity in intervention duration, with ACT involving approximately 420 minutes of contact time and EWT approximately 225 minutes. Although ANCOVA analyses included contact time as a covariate and indicated that duration was not a significant predictor, reliance on protocol-based estimates and limitations in facilitator documentation make it difficult to completely rule out dosage-related differences between interventions. Third, while self-report questionnaires (DERS and ERNS-G) were used to assess outcomes, neither instrument provides universally accepted clinical cut-off scores. Consequently, participant selection and interpretation of screening results were based on relative score distributions and population-based references reported in previous studies. Although this approach is supported by the literature, it may limit the precision of participant classification. Fourth, although DERS and ERNS-G measure distinct constructs (emotion regulation versus emotional numbing), potential construct overlap remains possible, since both involve screening for emotional processes. Fifth, the absence of a fully active control group means that nonspecific factors, such as group attention or participant expectancy effects, cannot be entirely excluded. Although contact time was statistically controlled in the ANCOVA model, differences in intervention exposure may still have influenced participants' experiences in ways that were not fully captured by the analysis.

Future research should expand sample sizes, include participants from multiple institutions, and employ fully randomized allocation procedures with balanced intervention durations to strengthen causal inference. Incorporating long-term follow-up assessments and mixed-methods approaches may provide deeper insight into the mechanisms underlying emotional change. Additionally, the integration of physiological or neurobiological markers could further elucidate the processes through which emotional responsiveness is restored. Addressing these considerations may contribute to more comprehensive research on emotional dynamics and support the development of more effective interventions for emotional numbing.

**Nursing Implications**

This research provides useful evidence for nursing practices aimed at enhancing emotion regulation and reducing emotional numbing among university students, particularly nursing students who are exposed to academic stressors that may contribute to psychological distress. One of the primary roles of nurses in mental health promotion is the early identification and management of emotional disengagement, which is not always addressed in routine academic health services. Although ACT and EWT have been examined separately and shown potential benefits for emotion regulation in young adults, their comparative application among nursing

students remains limited. Thus, these interventions may be cautiously considered as flexible and low-cost options for emotional support (Albagawi et al., 2024).

ACT is an evidence-based approach that emphasizes mindfulness, acceptance, and psychological flexibility. ACT-based practices, such as mindful awareness and values clarification, may be incorporated by psychiatric and mental health nurses into student counselling, stress management programs, or reflective supervision activities. Early application of these strategies during nursing education may help prevent emotional numbing associated with burnout, reduced motivation, and increased risk of depressive or trauma-related symptoms (Li et al., 2024; Pozzi et al., 2021; Xu et al., 2023).

The findings indicate that structured psychosocial programs can be integrated into university health systems and nursing faculties at the policy level. To ensure psychological support beyond crisis-oriented interventions, institutional mental health frameworks should incorporate evidence-based approaches such as ACT and EWT into regular student wellness programs. This is consistent with growing evidence that emotional well-being contributes to academic performance and professional readiness in nursing education (Cheung et al., 2021; Wallace & Docherty, 2020; Xu et al., 2023). The inclusion of emotion regulation assessment as part of routine student health screening may facilitate early identification of maladaptive emotional patterns and timely intervention.

In line with these findings, nursing education may benefit from incorporating components such as emotional awareness, reflective practice, and acceptance-based learning. The integration of reflective writing assignments or brief mindfulness-based activities into nursing coursework may enhance emotional resilience and empathy, which are essential competencies for effective communication and patient care (Albagawi et al., 2024; Gratz & Roemer, 2004; Renzi et al., 2020). These outcomes may also assist nurse educators in preparing future nurses to recognize and manage their own emotional processes, thereby reducing the risk of compassion fatigue and supporting long-term psychological well-being.
In conclusion, this study highlights the importance of nursing interventions that address emotional numbing and its associated affective and cognitive difficulties. Future research should explore how ACT and EWT may be delivered individually or in combination, examine physiological mechanisms underlying improvements in emotion regulation, and assess broader implementation in clinical and educational settings. Strengthening evidence-based psychiatric nursing practice in this area may enhance holistic mental health promotion for healthcare students and professionals.

## Conclusion

This study demonstrated that both ACT and EWT were effective in improving emotion regulation and reducing emotional numbing among nursing students. Significant improvements were observed within both intervention groups following treatment. However, after controlling for baseline scores using ANCOVA, no statistically significant differences were found between ACT and EWT in either emotion regulation or emotional numbing outcomes. These findings suggest that both interventions may serve as beneficial non-pharmacological approaches for supporting emotional well-being among nursing students.

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## Conflict of Interest

According to the authors, there is no conflict of interest concerning the research, writing, or publication of this paper. All research, from data collection to analysis and publication, was conducted independently and ethically, without any interference from financial gain or personal interests.

## Credit Author Statement

**Rafi Jachra Adam:** Conceptualization, Methodology, Data Curation, Formal Analysis, Writing – Original Draft; **Amelia Febrianti:** Data Collection, Field Assistance, and Documentation; **Sri Sumartini, Nadia Sintia Wardany, Slamet Rohaedi:** Validation, Supervision, Writing – Review & Editing, Project Administration.

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