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Comparison of the Effectiveness of Self-Efficacy Training and Mindfulness on Job Engagement and Psychological Well-being of Physical Education Teachers in Tabriz

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ABSTRACT

Objective: This study aimed to compare the effectiveness of mindfulness training and self-efficacy training on psychological well-being and job engagement of physical education teachers in Tabriz.

Method: A quasi-experimental pretest-posttest design with a control group was employed during the academic year 2024-2025. The statistical population included all physical education teachers in Tabriz, from which 45 participants were selected via convenience sampling and randomly assigned to three groups: two experimental (mindfulness training (n=15) and self-efficacy training (n=15) and one control (n=15). The mindfulness training was based on the program developed by Segal et al. (2002), consisting of 8 sessions while the self-efficacy training was based on Bandura's (1997) theory, consisting of 8 weekly sessions of 90 minutes each. Data were collected using the Job Engagement Questionnaire (Schaufeli & Bakker, 2006) and the Psychological Well-being Questionnaire (Ryff et al., 2004) and then analyzed using MANCOVA, ANCOVA, and MANOVA with SPSS-22 software.

Results: Both mindfulness and self-efficacy training significantly improved psychological well-being in the experimental groups compared to the control group ($p<.01$), with no significant difference between the two intervention groups. For job engagement, both interventions showed the experimental groups' significant improvements over the control group (effect sizes: 18.40 for self-efficacy, 19.73 for mindfulness). However, mindfulness training had a more significant effect on job engagement than self-efficacy training ($p<.05$).

Conclusions: Mindfulness and self-efficacy training enhance psychological well-being and job engagement among physical education teachers, with mindfulness training demonstrating a superior effect on job engagement. These findings suggest that both interventions are effective, but mindfulness training may offer additional benefits for improving job engagement. Hence, educational policymakers may integrate mindfulness and self-efficacy programs to foster resilient, motivated physical educators.

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Introduction

The survival, durability, and progress of any society fundamentally rely on the efficiency and quality of its education system. In this regard, motivated and capable teachers serve as one of the primary pillars of education, nurturing the youth within the educational framework and preparing them for a brighter future (Hofman-Bergholm, 2022). Hence, the advancement of any nation is inextricably linked to the strength of its educational system, where teachers play a pivotal role in shaping outcomes. Moreover, it is widely recognized that students' academic performance hinges on the effectiveness of teachers' instructional methods, with teacher job performance emerging as a critical factor in facilitating student learning (Fomba et al., 2023). This underscores the necessity of supporting teachers' professional and psychological health to sustain high-quality education.

In today's increasingly complex global landscape, organizations, including educational institutions, prioritize strategies to enhance employees' flexibility and adaptability. A key focus has been on fostering job engagement, a motivational construct that has gained prominence in organizational psychology over the past two decades. Job engagement refers to the voluntary investment of personal resources in fulfilling professional role demands (Pincus, 2023). Engaged employees exhibit high levels of energy, positive connections to their work, and a drive for effective task completion (Karaferisn et al., 2022). For teachers, particularly those in physical education (PE), job engagement is vital as it promotes the modeling of healthy behaviors, teamwork, and resilience in students, thereby influencing students' long-term physical and mental health outcomes. Defined as a positive, fulfilling work-related state characterized by vigor (high energy and resilience), dedication (sense of significance and enthusiasm), and absorption (full immersion in tasks), job engagement contrasts sharply with burnout and has been shown to boost organizational productivity and profitability (Abdelwahed & Doghan, 2023; Schaufeli, 2021). Research consistently demonstrates that higher teacher engagement leads to improved job performance, students' achievement, and reduced turnover intentions (Riyanto et al., 2021; Xia et al., 2023).

Complementing job engagement, psychological well-being presents a cornerstone of teachers' holistic functioning. Drawing from Ryff's (1989)'s multidimensional model, psychological well-being encompasses six key dimensions: autonomy, environmental mastery, personal growth, positive relationships, purpose in life, and self-acceptance (Khanjani et al., 2014). This eudaimonic approach emphasizes effective functioning and personal fulfillment over mere hedonic pleasure, aligning with virtue-based perspectives that prioritize meaningful engagement over transient satisfaction. For physical education (PE) teachers, who often navigate physically demanding environments and interpersonal challenges with students, parents, and administrators, psychological well-being is essential for mitigating emotional exhaustion and sustaining professional growth. Studies highlight that enhanced well-being correlates with greater job

satisfaction, lower stress, and improved classroom interactions, ultimately benefiting student development (Clark & Gosen, 2009; Mazzetti et al., 2023).

To counter these challenges, self-efficacy training emerges as a promising strategy rooted in Bandura's (1997) social cognitive theory, which posits self-efficacy as individuals' beliefs in their capacity to execute actions necessary for desired outcomes. This personal resource influences task initiation, effort exertion, and perseverance amid obstacles, particularly in high-demand professions like teaching (Schwarzer & Hallum, 2008). Within the Job Demands-Resources (JD-R) model, self-efficacy buffers job demands while amplifying resources, directly predicting higher engagement and well-being (Bakker & Demerouti, 2008). Empirical studies affirm that self-efficacy training enhances teachers' job satisfaction, reduces burnout, and boosts engagement by fostering competence and optimism (Klassen & Tze, 2014; Li & Wang, 2024). For PE teachers, heightened self-efficacy translates to more effective instructional strategies and classroom management, ultimately improving student motivation and physical activity levels (Borhani et al., 2018; Mirsefiān et al., 2020).

Similarly, mindfulness training offers a complementary approach, defined as purposeful, non-judgmental attention to the present moment (Kabat-Zinn, 2003). Grounded in Acceptance and Commitment Therapy (ACT) and Mindfulness-Based Stress Reduction (MBSR), it promotes psychological flexibility by encouraging acceptance of thoughts and emotions without rumination (Hayes et al., 2012). Research on educators reveals that mindfulness interventions significantly alleviate stress, enhance resilience, and elevate job engagement and well-being, with particular benefits in reducing burnout and improving student interactions (Flook et al., 2013; Roeser et al., 2013). In PE settings, mindfulness equips teachers to manage high-emotion scenarios, such as injury risks or motivational slumps, fostering a more supportive learning environment (Kittler et al., 2022).

Despite these insights, a pressing research problem persists: many teachers, including PE educators in regions like Tabriz, Iran, report elevated levels of stress, burnout, and disengagement due to heavy workloads, classroom management demands, and limited institutional support (Ghafouri et al., 2021; Kanya et al., 2021). This issue is exacerbated in PE contexts, where teachers must balance physical activity facilitation with emotional regulation amid unpredictable student behaviors, leading to diminished well-being and engagement that hampers both teacher’s retention and students’ outcomes. The selection of this topic stems from the urgent need to address this gap through targeted interventions, as current educational systems often overlook psychological support for PE teachers, resulting in suboptimal performance and higher attrition rates. The importance of this research lies in its potential to inform evidence-based programs that enhance teacher resilience, thereby elevating educational quality and societal well-being. Without such interventions, the cycle of burnout perpetuates, undermining the foundational role of teachers in fostering healthy, engaged youth. Given the established benefits of the mentioned interventions,

yet limited comparative research—especially among PE teachers in culturally specific contexts like Tabriz—the present study sought to address this void by examining whether mindfulness and self-efficacy training differentially impact psychological well-being and job engagement. Considering the aforementioned points, the present study aimed to probe whether the effectiveness of mindfulness training and self-efficacy impacts the psychological well-being and occupational engagement of physical education teachers and whether there is a difference between these experimental groups and the control group considering the psychological well-being and occupational engagement of physical education teachers.

Materials and Methods

Design

The present study is an applied research in terms of purpose and adopted a quasi-experimental design, utilizing a pretest-posttest design with a control group. It was conducted during the academic year 2024-2025.

Participants

The study consisted of three groups of participants. The statistical population included all physical education teachers in Tabriz. The sample size was determined using G*Power 3.1 software, based on the guidelines for sample size calculation in pretest-posttest experimental designs (Lu et al., 2021). Assuming a medium effect size (Cohen's d = .50, alpha = .05, power =.80), and accounting for three groups in a MANOVA framework with two dependent variables, the minimum required sample size was 42 participants. This was rounded up to 45 to allow for potential attrition. Using a convenience sampling method, 45 individuals were selected and randomly assigned to three groups: control (15 individuals), mindfulness training (15 individuals), and self-efficacy training (15 individuals). The demographic characteristics of the participants indicated that 48.8% were male and 51.1% were female. In terms of job experience, 42.2% had between 1 to 5 years, 26.6% had between 6 to 10 years, and 31.1% had between 11 to 15 years of experience.

Instruments

The data collection tools in this research included:

Psychological Well-Being Questionnaire: The psychological well-being questionnaire was designed by Ryff (2002) to assess individuals' psychological well-being. This questionnaire consists of 54 questions and includes six components: autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. It uses a six-point Likert scale with questions such as "I don't want new ways to do my work" and "My life is good as it is now." In the research conducted by Akhbari and Besharati (2016), the content, face, and construct

validity of this questionnaire were deemed appropriate for assessment. The Cronbach's alpha coefficient calculated in the study by Akhbari and Besharati (2016) was estimated to be above .70.

Occupational Engagement Scale: In this study, the short version of the Utrecht Work Engagement Scale, consisting of 9 items, was used to measure the occupational engagement of teachers. This questionnaire not only provides an overall score for occupational engagement but also measures this construct through three components: vigor, dedication, and absorption. Each component consists of three items, with response options based on a seven-point Likert scale ranging from 0 (never) to 6 (every day). The total score range for the scale is between 0 and 54. In Iran, Hajloo (2013) studied the psychometric indicators of this tool among a group of teachers. The findings from factor analysis confirmed the presence of three factors consistent with the original version. Additionally, significant correlations with two questionnaires on job satisfaction and burnout indicated convergent and divergent validity for this questionnaire. The Cronbach's alpha for the entire scale was found to be .76, while for the components of vigor, dedication, and absorption, it was .78, .72, and .79 respectively. In another study by Ghanbari et al. (2015), which was conducted among 127 educational staff, the authors reported satisfactory construct and concurrent validity as well as reliability for the nine-item version of the Utrecht Work Engagement Scale. In the present study, the results from reliability calculations using Cronbach's alpha showed that the overall reliability of the scale was .93, with values of .85, .87, and .78 for vigor, dedication, and absorption respectively.

Mindfulness Training: For mindfulness training in this study, the mindfulness training program developed by Segal et al. (2002) was utilized.

Table 1. Content of Mindfulness Training Sessions (Segal et al., 2002)

Session	Topic	Program
Session 1	Self-guided introduction	Self-guided introduction session rules and objectives; Mindful eating of raisins (participants spend a few minutes exploring the sensory characteristics of a raisin). Homework: Body scan over 6 days; Body scan homework: Practice mindful awareness of a daily routine activity each day (washing, eating, brushing teeth, etc.).
Session 2	Overcoming obstacles	Practicing thoughts and feelings. Homework: Record pleasant events.
Session 3	Mindfulness or breathing technique	Sitting meditation. Homework: 3-minute breathing space three times a day Mindful walking. Homework: Mindful walking practice minute breathing space. Homework: Record unpleasant events.3
Session 4	Staying in the present	Seeing meditation/hearing meditation. Homework: Sitting meditation 3-minute breathing space not just three times a day but whenever they notice stress and unpleasant emotions.
Session 5	Allowing and permission	Sitting meditation. Homework: Guided sitting meditation
		Sitting visualization meditation. Homework: Shorter guided meditation for at

Table 1. Content of Mindfulness Training Sessions (Segal et al., 2002)

Session	Topic	Program
Session 6	Thoughts are not facts	least 40 minutes Ambiguous scenarios. Homework: 3-minute breathing space not just three times a day but whenever they notice stress and unpleasant emotions
Session 7	Self-care	Discussing the connection between mood and activity. Homework: 3-minute breathing space not just three times a day but whenever they notice stress and unpleasant emotions Discussion about symptoms of illness. Homework:
Session 8	Utilizing learned skills	Homework: Reflection, feedback

Self-Efficacy Training: In the present research, a self-efficacy training protocol based on Bandura's (1997) theory of self-efficacy and its four general principles (experiencing and achieving success in performance, vicarious experiences, encouragement and motivation, and attention to physiological/emotional states) was used to enhance self-efficacy levels. In Iran, researchers such as Aminian (2008), Moradi (2010), and Kargar (2017) have utilized these educational strategies. In this study, the self-efficacy training protocol was delivered to the experimental group over eight weekly sessions of 1.5 hours each. Generally, the structured program for each session was taught in line with the main focus of that session. Below are the general strategies introduced during the sessions:

Table 2. Content of Self-efficacyTraining Sessions

Goals	Session	Content
Orientation	1	Introduction, stating the goals and principles of the sessions.
Familiarization with the concept of self-efficacy	2	Understanding the concept of self-efficacy, characteristics of individuals with high self-efficacy, dimensions of self-efficacy, and types of self-efficacy beliefs.
Developing self-efficacy and emotional regulation	3	Understanding the process of self-efficacy development, ways to strengthen self-efficacy, and awareness of one's positive traits and competencies.
The importance and necessity of goal setting	4	Awareness of the importance and necessity of setting goals, understanding the characteristics of appropriate goals, and empowering oneself in setting suitable goals.
Meeting a successful person	5	Talking with a successful person who has achieved their goals.
Empowerment in coping with stress	6	Understanding the concept of stress and coping factors, learning about different coping strategies for stress management, and self-relaxation techniques.
The importance of mental imagery, self-relaxation training, and enhancing self-efficacy	7	Understanding mental imagery and its importance, empowerment in self-relaxation and mental imagery for problem-solving, and boosting self-efficacy.
Identifying and combating negative thoughts, and concluding the training	8	Recognizing signs of negative mood and depression, empowerment in identifying negative automatic thoughts, combating them, and concluding the self-efficacy training sessions.

Results

In this section, the mean and standard deviation of the research variables for both the experimental and control groups in both pre-test and post-test conditions are presented.

Table 3. Mean and Standard Deviation of Research Variables Based on Self-Efficacy Effectiveness in Experimental and Control Groups

Components	Group	Pre-test		Post-test	
		Mean	SD	Mean	SD
Psychological Well-being	Control	38.86	0.23	40.46	0.80
	Experimental	39.73	0.24	59.12	0.68
Job Engagement	Control	14.23	0.21	17.60	0.37
	Experimental	14.33	0.22	32.53	0.372

Table 4. Descriptive Statistics of Variables Based on Mindfulness Effectiveness In Experimental and Control Groups

Components	Group	Pre-test		Post-test	
		Mean	SD	Mean	SD
Psychological Well-being	Control	38.60	0.320	41.66	0.84
	Experimental	39.66	0.251	61.46	0.86
Job Engagement	Control	14.13	0.255	16.26	0.283
	Experimental	14.06	0.228	33.86	0.236

To examine the effect of self-efficacy training on psychological well-being and job engagement of physical education teachers, multivariate analysis of covariance (MANCOVA) was used. Before applying this test, its assumptions were examined using Levene's test and the homogeneity of regression slopes.

Table 5. Test of Normality of Data Distribution: Shapiro-Wilk Test

Variables	Group	df	Pre-test		Post-test	
			Statistic	p-value	Statistic	p-value
Psychological Well-being	Control	15	0.896	0.082	0.926	0.234
	Mindfulness Training	15	0.891	0.070	0.958	0.662
	Self-efficacy Training	15	0.891	0.070	0.943	0.421
Job Engagement	Control	15	0.914	0.156	0.864	0.048
	Mindfulness Training	15	0.868	0.310	0.785	0.045
	Self-efficacy Training	15	0.868	0.310		

According to Table 5, the variables demonstrate normality ($p < .05$). To examine the assumption of homogeneity of variance for psychological well-being and job engagement variables across the study groups, Levene's test was employed. The results of Levene's test are presented in Table 6:

Table 6. Results of Levene's Test for Homogeneity of Variance Assumption In Self-Efficacy Training

Variable	F	df1	df2	p-value
Psychological Well-being	0.001	1	28	0.99
Job Engagement	0.436	1	28	0.514

As evident in Table 6, the null hypothesis regarding equality of variances between the two groups is confirmed for both psychological well-being and job engagement variables in the post-test. This indicates that the assumption of homogeneity of variances was met for both psychological well-being and job engagement variables between the emotion regulation training of the experimental groups and the control group during the post-test phase.

Table 7. Test of Homogeneity of Regression Slopes for Self-Efficacy Analysis

Source	Dependent Variable	Sum of Squares	df	Mean Square	F	Sig.
Group × Pre-test Job Engagement	Job Engagement	2.992	1	2.992	1.457	.239
	Psychological Well-being	3.649	1	3.649	0.513	.481
Group × Pre-test Psychological Well-being	Job Engagement	6.424	1	6.424	3.129	.090
	Psychological Well-being	41.183	1	41.183	5.791	.024

To satisfy the assumption that the correlation between covariates (pre-tests) and job engagement and psychological well-being does not differ significantly across the groups, the interaction terms in this model must be non-significant. As shown in Table 7, this assumption was not violated as there were no significant interactions between covariates and the independent variable for any dependent variables:

- The interaction "Pre-test Job Engagement × Group" showed $p = .239$ for job engagement and $p = .481$ for psychological well-being.
- The interaction "Group × Pre-test Psychological Well-being" showed $p = .090$ for job engagement and $p = .024$ for psychological well-being.

Table 8. Results of MANCOVA on Post-test Scores of Psychological Well-being and Job Engagement Across Experimental and Control Groups, Controlling for Pre-test Scores in Self-Efficacy Intervention

Effect		Value	F	Hypothesis df	Error df	Sig.
Group	Pillai's Trace	0.970	410.93	2	25	.010
	Wilks' Lambda	0.03	410.93	2	25	.010
	Hotelling's Trace	32.875	410.93	2	25	.010
	Roy's Largest Root	32.875	410.93	2	25	.010

The results in Table 8 indicate a highly significant multivariate effect between groups for the studied dependent variables (Wilks' Λ = .03, F(2,25) = 410.93, p = .01). To test the research hypotheses, univariate analysis of covariance was subsequently employed.

Table 9. Results of Univariate Analysis of Covariance for Psychological Well-being

Source of Variation	Sum of Squares	df	Mean Square	F-value	p-value	Partial η^2
Pre-test	1.324	1	1.324	0.153	0.690	0.006
Group	857.260	1	857.260	98.911	<0.001	0.786
Error	234.010	27	8.667			

The ANCOVA results presented in Table 9 reveal a significant effect, F(1,27) = 98.911, p < .001, leading to rejection of the null hypothesis. This indicates with 99% confidence that there is a statistically significant difference in psychological well-being between the control and experimental groups. The self-efficacy training significantly impacted physical education teachers' psychological well-being, accounting for 78.6% of the variance (η^2 = .786). This suggests that 78.6% of the variation in psychological well-being can be explained by the self-efficacy intervention.

Table 10. Results of Analysis of Covariance for Job Engagement under Self-Efficacy Intervention

Source of Variation	Sum of Squares	df	Mean Square	F-value	p-value	Partial η^2
Pre-test	0.208	1	0.208	0.095	0.760	0.004
Group	1671.647	1	1671.647	763.373	<0.001	0.960
Error	59.125	27	2.190			

As shown in Table 10, the analysis yielded F(1,27) = 763.373, p < .001, resulting in rejection of the null hypothesis. This demonstrates with 99% confidence that the self-efficacy training significantly affected physical education teachers' job engagement (η^2 = .960), explaining 96% of the variance in post-test scores. This indicates that 96% of the changes in job engagement can be attributed to the self-efficacy intervention.

To examine the effect of mindfulness training on psychological well-being and job engagement of physical education teachers, multivariate analysis of covariance (MANCOVA) was employed. Prior to conducting this analysis, the necessary assumptions were verified using Levene's test for equality of variances and tests for homogeneity of regression slopes.

Table 11. Results of Levene's Test for Equality of Variances of Dependent Variables in Mindfulness Training

Variable	F	df1	df2	p-value
Psychological Well-being	0.119	1	28	0.301
Job Engagement	1.110	1	28	0.732

As shown in Table 11, the null hypothesis of equality of variances between the two groups is confirmed for both psychological well-being and job engagement variables in the post-test. This indicates that the assumption of homogeneity of variances was met for both dependent variables between the mindfulness training experimental group and the control group during the post-test phase.

Table 12. Test of Homogeneity of Regression Slopes for Mindfulness Analysis

Source	Dependent Variable	Sum of Squares	df	Mean Square	F	p-value
Group × Pre-test Job Engagement	Job Engagement	0.590	1	0.590	0.542	0.469
	Psychological Well-being	0.176	1	0.176	0.017	0.897
Group × Pre-test Psychological Well-being	Job Engagement	0.932	1	0.932	0.855	0.364
	Psychological Well-being	48.156	1	48.156	4.646	0.048

To satisfy the assumption that the correlation between covariates (pre-tests) and both dependent variables does not differ significantly across groups, the researchers analyzed the interaction terms to ensure they are not non-significant. As shown in Table 12, this assumption was not violated:

- The interaction "Pre-test Job Engagement × Group" showed p = .469 for job engagement and p = .897 for psychological well-being.
- The interaction "Group × Pre-test Psychological Well-being" showed p = .364 for job engagement and p = .048 for psychological well-being.

Table 13. Results of MANCOVA on Post-test Scores of Psychological Well-being and Job Engagement Across Experimental and Control Groups, Controlling for Pre-test Scores in Mindfulness Intervention

Effect		١ Value	F	Hypothesis df	Error df	Sig.
Group	Pillai's Trace	0.989	865.337	2	25	<0.001
	Wilks' Lambda	0.014	865.337	2	25	<0.001
	Hotelling's Trace	69.227	865.337	2	25	<0.001
	Roy's Largest Root	69.227	865.337	2	25	<0.001

The results in Table 13 indicate a highly significant multivariate effect between groups for the dependent variables: Wilks' $\Lambda = 0.014$, $F(2,25) = 865.337$, $p < .001$. To test the research hypotheses, univariate analysis of covariance was subsequently employed.To examine the effect of mindfulness training on psychological well-being of physical education teachers, univariate analysis of covariance (ANCOVA) was used.

Table 14. Results of ANCOVA for Psychological Well-being

Source	Sum of Squares	df	Mean Square	F	p-value	Partial η²
Pre-test	0.08	1	0.08	0.007	0.934	0.001
Group	846.539	1	846.539	75.437	<0.001	0.736
Error	302.987	27	11.22			

The ANCOVA results show a significant group effect: $F(1,27) = 75.437$, $p < .001$, with mindfulness training accounting for 73.6% of variance ($\eta^2 = .736$) in psychological well-being. This indicates with 99% confidence that mindfulness training significantly improved physical education teachers' psychological well-being compared to the control group.

Table 15. Results of ANCOVA for Job Engagement

Source	Sum of Squares	df	Mean Square	F	p-value	Partial η²
Pre-test	0.006	1	0.006	0.006	0.938	0.001
Group	2319.780	1	2319.780	2185.403	<0.001	0.98
Error	28.660	27	1.061			

For job engagement, the intervention showed an exceptionally strong effect: $F(1,27) = 2185.403$, $p < .001$, explaining 98% of variance ($\eta^2 = .98$). This confirms mindfulness training's significant impact on teachers' job engagement.

Comparative Analysis between Three Groups

Table 16. Levene's Test for Equality of Error Variances

Variable	F	df1	df2	p-value
Psychological Well-being	3.158	2	42	0.053
Job Engagement	5.167	2	42	0.099

The non-significant Levene's test results (all $p > 0.05$) confirm homogeneity of variances for MANOVA.

Table 17. MANOVA Results Comparing Three Groups

Effect	Variable	Sum of Squares	df	Mean Square	F	p-value	Partial η²
Group	Psychological Well-being	4836.844	2	2418.422	366.780	<0.001	0.94
	Job Engagement	3648.711	2	1824.356	1388.097	<0.001	0.98
Error	Psychological Well-being	276.933	42	6.594			
	Job Engagement	55.20	42	1.314			

Based on the results presented in Table 17, the *p*-value for each component is < 0.05, indicating a statistically significant difference in both psychological well-being and job engagement across the three groups (control, self-efficacy training, and mindfulness training).

Table 18. Results of Pairwise Comparisons Analyzing Group Membership Effects

Dependent Variable (Post-test)	Comparison Groups	Mean Difference	Significance (p-value)
Psychological Well-being	Self-efficacy vs. Mindfulness	-1.86	0.226
	Self-efficacy vs. Control	21.00	<0.001*
	Mindfulness vs. Self-efficacy	1.86	0.226
	Mindfulness vs. Control	22.86	<0.001*
	Control vs. Self-efficacy	-21.00	<0.001*
	Control vs. Mindfulness	-22.88	<0.001*
Job Engagement	Self-efficacy vs. Mindfulness	-1.33	0.017*
	Self-efficacy vs. Control	18.40	<0.001*
	Mindfulness vs. Self-efficacy	1.33	0.017*
	Mindfulness vs. Control	19.73	<0.001*
	Control vs. Self-efficacy	-18.40	<0.001*
	Control vs. Mindfulness	-19.73	<0.001*

As evident in Table 18, both intervention groups demonstrated statistically significant improvements in psychological well-being compared to that in the control group at the 1% significance level (with mean differences of +21.00 for self-efficacy training and +22.88 for mindfulness training, respectively). However, no significant difference was observed between the two intervention groups for psychological well-being.For job engagement, both interventions showed significant effects versus the control group (mean differences: +18.40 for self-efficacy, +19.73 for mindfulness). Notably, mindfulness training produced significantly greater improvements in job engagement than self-efficacy training at the 5% significance level (mean difference: +1.33).

Discussion

The findings of this study indicate that mindfulness training significantly enhances both psychological well-being and job engagement in physical education teachers in Tabriz. These results align with those of previous research by Mazinani et al. (2022), Adibi et al. (2020), Janabadi et al. (2016), and Sadeghian and Hashemi (2024). Mindfulness, as defined by Kabat-Zinn (2003), involves intentional, non-judgmental focus on the present moment. This practice helps teachers manage stress, increase self-awareness, and regulate emotions. Such skills are essential for boosting psychological well-being and maintaining engagement in demanding professional roles.

Self-efficacy training also significantly improved psychological well-being and job engagement, consistent with studies by Jalili Shishvan et al. (2022) and Li and Wang (2024). Bandura's (1997) self-efficacy theory emphasizes that belief in one's ability to succeed drives motivation, performance, and resilience. For physical education teachers, this training builds confidence in handling challenges like lesson planning or student needs, thereby enhancing job engagement. It also supports psychological well-being by reducing stress and promoting optimism, in line with Ryff's (1989) model of personal growth, purpose, and self-acceptance. Hobson's (1990) framework reinforces this by connecting self-efficacy to greater job commitment and satisfaction through increased effort and persistence.

The comparative analysis shows that mindfulness training had a significantly greater effect on job engagement than self-efficacy training ($p < .05$). This difference likely stems from mindfulness's stronger focus on emotional regulation and stress reduction, which tackles the emotional demands of teaching more directly. Self-efficacy training excels in building confidence and competence but may not address emotional stressors as thoroughly. For example, a highly self-efficacious teacher might feel skilled yet still face burnout without tools for emotional management.

The theoretical foundation of mindfulness draws from Acceptance and Commitment Therapy (ACT) (Hayes et al., 2012), suggesting that accepting internal experiences and aligning actions with personal values improves psychological flexibility and well-being. Teachers who practice mindfulness can better handle workplace stressors, such as student behavior issues or administrative pressures, without feeling overwhelmed. Mindfulness-Based Stress Reduction (MBSR) further explains how this approach lowers physiological and psychological stress, promoting relaxation and mental clarity (Kabat-Zinn, 2003). This is especially relevant for teachers in high-pressure environments prone to burnout. For example, Flook et al. (2013) showed that mindfulness programs reduced stress and increased life satisfaction among teachers. These outcomes reflect positive psychology principles, which highlight the role of positive experiences in well-being (Seligman, 2011).

From the perspective of Self-Determination Theory (SDT), mindfulness supports three core psychological needs: autonomy, competence, and relatedness (Deci & Ryan, 2000). It fosters self-awareness, allowing teachers to gain control over their practices (autonomy), manage classrooms more effectively (competence), and build stronger connections with students and colleagues (relatedness). These factors directly increase job engagement by boosting motivation and commitment. Roeser et al. (2013) reported similar gains in job satisfaction and engagement through improved self-regulation and emotional management. Moreover, mindfulness reduces burnout by aiding coping with negative emotions like frustration or anxiety (Hölzel et al., 2013). For instance, a teacher practicing mindfulness might pause briefly to recognize their frustration during a

disruptive student incident, then respond with a more constructive educational approach instead of immediate anger.

Conclusion

In summary, both mindfulness and self-efficacy training effectively enhance psychological well-being and job engagement among physical education teachers, with mindfulness showing superior benefits for engagement. These interventions address key challenges like stress and burnout, ultimately supporting teacher retention and student outcomes. Educational institutions should integrate mindfulness and self-efficacy workshops to foster resilient, motivated educators. Future research could examine long-term effects and applications in diverse contexts to broaden their impact. However, the study has limitations. Self-reported questionnaires may introduce biases, such as social desirability or self-assessment inaccuracies. The focus on physical education teachers in Tabriz also limits generalizability to other regions or disciplines. Cultural factors, like workload or institutional support, could influence intervention effectiveness elsewhere. Future research can address these limitations to further the scope of the findings. Despite these limitations, the present findings provide strong evidence for the efficacy of mindfulness- and self-efficacy-based interventions in educational settings.

Data Availability Statement

Data available on request from the author.

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Conflict of interest

There are no conflicts of interest.

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