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# The effectiveness of PERMA model education on university students' well-being

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## Abstract:

**BACKGROUND:** Approximately 46% of university students experience mental health problems. Additionally, the university students' well-being was lower than their general well-being. This study was conducted to investigate the effectiveness of the PERMA model education on university students' well-being.

**MATERIALS AND METHODS:** This study used a semi-experimental research design, involving one intervention group and one control group. The groups underwent a pre-test, post-test, and a 45-day follow-up. This study was conducted at the Department of Education and Psychology, Azad University of Isfahan (Khorasgan) Branch, and all students in this department were considered the statistical population for this study. The research tools used were the Butler and Kern PERMA-Profiler questionnaires. In two stages, pre-test, post-test, and follow-up, the experimental group participated in six educational intervention sessions. Educational interventions included Seligman's PERMA model, which defines psychological well-being in five domains: positive emotions (P), engagement (E), relationships (R), meaning (M), and accomplishment (A). Each session lasted for 90 min over 3 weeks (two sessions per week), while the control group had no training sessions.

**RESULTS:** Multiple covariance analysis of well-being showed no significant difference found between the two groups in the pre-test ( $P = 0.19$ ). However, a significant improvement was observed in the intervention group in the post-test ( $P = 0.03$ ) and follow-up ( $P = 0.001$ ).

**CONCLUSION:** This study suggests the use of Seligman's PERMA model to improve the psychological well-being of university students. It is recommended that the educational system use this model to help university students improve their mental health, enhance their life satisfaction, and prevent mental illnesses such as depression and stress.

## Keywords:

PERMA model, PERMA questionnaire, students, well-being

## Introduction

According to the World Bank, there are 210 million university students worldwide, and this number is expected to increase (source: World Bank). Recently, the levels of distress and mental well-being in the academic community have become a cause of concern. Approximately 12% and 46% of university students experience mental health problems.<sup>[1-3]</sup> Additionally, many academic studies have shown that

university students' levels of well-being are lower than their general well-being.<sup>[4,5]</sup> In all countries, college is considered a vital period of life for students to develop appropriate values, worldviews, life perspectives, and resilience.<sup>[6]</sup> This period is sometimes described as the final stage of adolescence, when students' mindsets not only determine their academic progress but also predict their future adaptation to the work environment and society. Therefore, explaining the factors and mechanisms that influence students' psychological well-being in different fields is of great

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importance.<sup>[7,8]</sup> Positive psychology has been shown to increase psychological well-being.<sup>[9]</sup> Clinical psychology has traditionally focused on treating disabilities and eliminating their deficiencies. However, in 1998, Seligman proposed a positive psychology approach that aims to increase well-being, happiness, and personal strength by focusing on individual strengths and abilities rather than weaknesses and imperfections.<sup>[10-12]</sup> The goal of this field is to promote individuals' well-being, prevent mental health issues, and enhance mental health.<sup>[13]</sup> Positive psychology studies positive mental experiences such as pleasure, satisfaction, hope, optimism, love of work, perseverance, and interpersonal skills.<sup>[12,14]</sup> Well-being is synonymous with mental health. A healthy person can effectively cope with daily life pressures acceptably.<sup>[15]</sup> Well-being is the degree of harmony between an individual and the consequences of their actions and is a continuous evaluation with stable internal satisfaction throughout a person's lifetime.<sup>[16]</sup> In 2012, Seligman introduced the well-being theory, also known as the PERMA model, in which each letter of the PERMA is the first letter of the component. The model consisted of five elements: positive emotions, engagement, meaning, positive relationships, and accomplishment. These elements are important for a person's well-being, happiness, and flourishing. Each element has a specific meaning: Positive emotion refers to feelings of pleasure and joy, whereas engagement involves losing self-awareness through enjoyable activities. Meaning involves finding a purpose and goals in life, and positive relationships include good relationship quality and effective social connections. The last component, accomplishment, encompasses an individual's progress in various aspects of life.<sup>[17-23]</sup> In recent years, various psychological interventions have been developed to produce positive results. These interventions consist of voluntary activities that enhance well-being.<sup>[21,24]</sup> Also, scientific evidence suggests that well-being can be taught and measured using the PERMA framework.<sup>[23]</sup> Research on positive psychology has shown that positive psychology leads to an increase in psychological well-being.<sup>[9,25]</sup> According to a recent study by Hidayat *et al.*, accomplishment goals and PERMA have a positive effect on life satisfaction, and PERMA acts as a positive full mediator, indicating that students who adopt accomplishment goals with high PERMA are likely to have good life satisfaction.<sup>[26]</sup> Another study in Brazil by De Carvalho *et al.* demonstrated a positive correlation between PERMA and subjective, psychological, gratitude, optimism, self-esteem, and happiness.<sup>[27]</sup> Prasath *et al.* showed that mental health centers and universities play a crucial role in promoting the well-being of university students. One effective approach is to implement the PERMA model, which has been linked to positive academic outcomes, achievement, and overall life satisfaction in students.<sup>[28]</sup>

Additionally, Morgan and Simmons, in their study of online positive education during the coronavirus disease 2019 (COVID-19) pandemic, demonstrated a positive education program was found to enhance students' well-being and social skills.<sup>[4]</sup> Furthermore, Benoit and Gabola, in positive psychology interventions (PPIs), have been shown to enhance well-being in children.<sup>[29]</sup> Lai *et al.* demonstrated that the use of a multidimensional PERMA-H positive education model in senior primary school students in Hong Kong resulted in increased satisfaction with school and reduced levels of anxiety and depression.<sup>[30]</sup> Roth *et al.*'s research on 7<sup>th</sup>-grade students showed that positive instruction led to increased well-being and decreased psychopathology symptoms. These findings emphasize the significance of positive educational approaches in supporting students' mental health and well-being.<sup>[31]</sup> Hakimi *et al.*'s research on the effectiveness of positive education intervention showed that it significantly increased the well-being and personal abilities of students.<sup>[32]</sup> In addition, in 2023, Tan indicated that counseling based on the PERMA model for college students' mental health improved their positive emotions, happiness, life satisfaction, sense of life meaningfulness, and positive coping styles while reducing negative coping styles.<sup>[33]</sup> Research on the PERMA model has focused on its intervention in mental well-being, depression, stress, and school/job satisfaction. However, research on the effectiveness of PERMA model education on university students' well-being is limited. This study aimed to determine the effectiveness and components of the PERMA model education on university students' well-being.

## Materials and Methods

### Study design and setting

This study was a quasi-experimental design that utilized pre-test, post-test, and follow-up measures over a period of 45 days. The study involved one intervention group and one control group, with participants recruited through announcements and randomly assigned to the two groups. Inclusion criteria for this research were the absence of more than one missed session, no history of mental or psychotic problems, lack of referring to a psychiatrist and psychologist during the past 6 months, and no use of psychoactive medications. All participants in both the intervention and control groups completed the PERMA-Profiler questionnaire during the pre-test. The independent variable (PERMA model education) was applied to the intervention group, with each session lasting for 90 minutes over 3 weeks (two sessions per week). The control group did not receive any education. At the end of the educational sessions, all subjects in both groups completed the post-test (PERMA-Profiler questionnaire) under the same conditions. Finally, 45 days after the end of the educational sessions, the

subjects completed the questionnaires again as part of the follow-up step.

### Study participants and sampling

The participants were 64 undergraduate and graduate university students from the Educational and Psychology Department of the Azad University of Isfahan (Khorasgan) Branch Iran, with ages ranging from 21 to 27 years ( $M = 24.23$ ).

### Data collection tool and technique

Demographic information of participants was collected, including gender, marital status, field of study, educational level, well-being status, and job. Additionally, all participants completed a consent form.

### PERMA-Profler questionnaire

The questionnaire has 23 questions and includes five well-being components: positive emotion, engagement, relationships, meaning, and accomplishment, as well as negative emotion scales, physical health, and overall well-being. It is in the form of a Likert scale from 0 to 10 for each question, where a score of 0 indicates not at all and a score of 10 indicates most of the time.<sup>[34]</sup> The psychometric properties have been investigated in several countries. Internal consistency was measured using Cronbach's alpha for flourishing Butler and Kern (2016); in this study, Cronbach's alphas for positive emotion, engagement, meaning, relationship, and accomplishment were 0.89, 0.70, 0.91, 0.66, 0.76, respectively and a Total of 0.9. In the present study.<sup>[34]</sup> The statistical methods used in this study included Kolmogorov–Smirnov, Levin, independent t-test, paired t-test, analysis of covariance, and analysis of variance with repeated measures. All data analyses were performed using Excel software version 2010 and the Statistical Package for the Social Sciences (SPSS) software version 23, and  $P \leq 0.05$  was considered statistically significant.

### Ethical consideration

The study was approved by the appropriate institutional review board and the ethical committee of the Educational and Psychology Department of Azad University of Isfahan (Khorasgan) Branch. The research identification number is 23820701952053.

## Results

The results indicate that the mean age of students in the intervention and control groups was  $M = 23.72 \pm 3.28$  and  $24.75 \pm 3.25$  years, respectively. There was no significant difference in age between the two groups ( $P = 0.11$ ). The Kolmogorov–Smirnov test for normality and the Levin test for homogeneity of variances were performed before conducting the desired test, and all items had normality

and variance homogeneity. The statistical distributions of gender, marital status, and field of study, educational level, well-being status, and job were evaluated. Both groups had equal numbers of students ( $P = 1.00$ ), and there was no significant difference in terms of marriage ( $P = 0.46$ ). Quality of well-being was evaluated, and the majority of people in both groups had an average condition with no significant difference in distribution ( $P = 0.91$ ).

According to the results, the mean  $\pm$  (SD) of the age of the students in the intervention and control groups was  $M = 23.72 \pm 3.28$  and  $24.75 \pm 3.25$  years, respectively; in general, there was no significant difference between the two groups in terms of age ( $P = 0.11$ ). The requirement of using the aforementioned tests is the normality of the data obtained as Seligman as the homogeneity of the variances in both groups. Therefore, it should be mentioned that before performing the desired test, the Kolmogorov–Smirnov test for normality and the Levin test for homogeneity of variances were performed. According to the significance levels obtained from both tests, all items had normality and variance homogeneity. The statistical distributions of gender, marital status, and field of study, educational level, well-being status, and job were evaluated. The control and intervention groups were equal in terms of the number of students ( $P = 1.00$ ). In addition, the number of married people in both groups was evaluated; however, the two groups did not show a significant difference in terms of marriage ( $P = 0.46$ ). Therefore, this factor was controlled for in subsequent analyses. In addition, in both groups, the quality of well-being of the majority of people was on average. However, the distribution was the same in both the ps ( $P = 0.91$ ).

The results of the PERMA model education on the five components of well-being in the control and intervention groups showed a significant difference between the two groups in the pre-test, post-test, and follow-up, after controlling for factors. In the post-test, there was a significant difference between the two groups, with higher scores in the intervention group. The follow-up also showed a significant difference in favor of the intervention group, indicating a significant relationship between PERMA model education (well-being) and each component of well-being ( $P \leq 0.05$ ) [Table 1].

Based on, the time series analysis of the data while controlling for the effect of the pre-test showed significant differences between the control and intervention groups for all five components [Table 2].

The result shows that there was no significant difference between the control and intervention groups in the pre-test. However, in the post-test, a significant

**Table 1: Examining the effect of PERMA research model education on five components of well-being by the study group at different time series**

Variable	Time series analysis	Intervention SD±M	Control SD±M	Test	Value	P
Positive emotion	Pre-test	16.87±4.97	6.85±20.93	Independent sample t-test	1.91	0.06
	Post-test	4.39±23.31	6.64±21.06	ANOVA	63.75	0.04
	Follow-up	4.22±39.31	6.47±21.00	ANOVA	79.63	<0.001
Meaning	Pre-test	5.28±16.75	5.90±21.81	Independent sample t-test	2.55	0.01
	Post-test	4.65±22.93	4.67±21.93	ANOVA	120.13	<0.001
	Follow-up	4.54±21.97	4.77±21.87	ANOVA	50.69	<0.001
Engagement	Pre-test	5.69±15.87	4.01±19.31	Independent sample t-test	0.61	0.058
	Post-test	4.81±22.12	3.74±19.43	ANOVA	45.05	<0.001
	Follow-up	4.89±20.56	3.82±19.31	ANOVA	96.59	<0.001
Positive relationships	Pre-test	6.15±20.18	4.45±22.00	Independent sample t-test	0.95	0.34
	Post-test	5.23±23.62	4.70±22.00	ANOVA	128.83	0.01
	Follow-up	5.15±22.81	4.21±21.93	ANOVA	71.93	0.08
Accomplishment	Pre-test	4.61±17.37	4.62±19/81	Independent sample t-test	1.49	0.14
	Post-test	4.27±21.62	4.92±20.00	ANOVA	47.87	<0.001
	Follow-up	4.20±21.63	4.43±19.81	ANOVA	88.33	<0.001

**Table 2: Investigating the effect of PERMA model education on five components of well-being in time repetition**

Components	Time series analysis	SST	df	MSB	f	P	η <sup>2</sup>	G*Power
Positive emotion	Adjusting the pre-test effect	1716.04	1	1716.04	486.46	<0.001	0.94	0.99
	Intergroup	343.29	1	343.29	97/31	<0.001	0.77	0.99
	Error	102.30	62	3.52				
meaning	Adjusting the pre-test effect	1475.32	1	1475.32	365.32	<0.001	0.92	0.65
	Intergroup	326.01	1	326.01	80.72	<0.001	0.74	0.91
	Error	117/12	62	4.04				
Engagement	Adjusting the pre-test effect	1031.16	1	1031.16	415.04	<0.001	0.93	0.83
	Intergroup	334.88	1	334.88	134.79	<0.001	0.78	0.99
	Error	72.05	62	2.48				
Positive relationships	Adjusting the pre-test effect	1325.72	1	1325.72	594.06	<0.001	0.95	0.95
	Intergroup	124.84	1	124.84	55.94	<0.001	0.70	1.00
	Error	67.72	62	2.23				
Accomplishment	Adjusting the pre-test effect	1115.20	1	1115.20	382.65	<0.001	0.93	0.90
	Intergroup	237.54	1	237.54	81.51	<0.001	0.74	0.85
	Error	84.51	62	2.91				

improvement was observed in the intervention group compared with the control group. The follow-up also showed a significant difference between the two groups. These results suggest that education in the PERMA model has a positive effect on PERMA features and increases them among students [Table 3].

The analysis of the total data [Table 4], due to the series of times and by controlling for the pre-test effect, indicates that a significant difference was observed between the control and intervention groups. The power value of the test was also reported, which indicates the adequacy of the sample size; therefore, it can be concluded that PERMA model education significantly increased the well-being of students.

### Discussion

The study's findings suggest that education based on the PERMA model can significantly improve the well-being

of university students. The results of this study are in agreement with those of the previous studies by Roth *et al.*,<sup>[31]</sup> Kern *et al.*,<sup>[35]</sup> Shaghaghi *et al.*,<sup>[9]</sup> Morgan and Simmons,<sup>[4]</sup> and de Carvalho *et al.*<sup>[27]</sup> The findings of these studies indicate that a positive intervention (PERMA) increases well-being among students and individuals. This study aimed to evaluate the effects of PERMA model education on the components of well-being. According to our second result, we found that increasing all five components, particularly training in this protocol, increased the mean of engagement and positive relationship among students compared to other components, which is consistent with Gray *et al.*,<sup>[36]</sup> Tan,<sup>[33]</sup> Prasath *et al.*,<sup>[28]</sup> and Wibowo *et al.*<sup>[37]</sup> The findings showed that PERMA model education increased the positive emotion component of the experimental group, which is in line with the results of several other studies. Studies have shown that an increase in positive emotions creates many physical, learning, and psychological

**Table 3: Study of the education of the PERMA model of research on the overall well-being according to the study group in time series**

Time series analysis	Control SD±M	Intervention SD±M	Test	Value	P
Pre-test	27.42±151.00	34.48±136.50	Independent t-test	1.31	0.19
Post-test	27.66±151.25	31.35±171.56	ANOVA	96.25	0.03
Follow-up	26.61±151.56	29.31±164.56	ANOVA	161.52	0.001

**Table 4: Examining the points obtained from training the PERMA model of research on overall well-being over time**

Time series analysis	SST	df	MSB	f	P	η <sup>2</sup>	G*Power
Adjusting the pre-test effect	46490.33	1	46490.33	496.01	<0.001	0.94	1.00
Intergroup	13263.85	1	13263.85	142.37	<0.001	0.83	1.00
Error	93.16	62	3.21				

benefits for people, which have a significant effect on the other component's level of well-being.<sup>[17,18,29,36,38,39]</sup> As the findings showed, PERMA model education has increased the engagement component of students, which is close to the research on engagement that verified that it can increase well-being and skills and make a sense of purpose.<sup>[40-42]</sup> Moreover, it promotes personality abilities, enthusiasm, and passion for life. In addition, the maximum states of flow are related to the reduction of anxiety and depression levels,<sup>[30]</sup> and according to the results, PERMA model education has increased the positive relationship component of students, which is in line with other studies. Good relationships are essential for well-being and increased happiness. People who are in good relationships consciously take care of others, and they also found that good social relationships predict people's mental well-being and that it is the source of well-being. Good relationships are also the best predictors of life satisfaction.<sup>[31,32,42]</sup> The result indicates that PERMA model education has increased the meaning component of students, which is in agreement with other studies that mentioned that sense of purpose increases health and well-being. Meaning and purpose vary among individuals. Some find this in their work, while others join groups such as politics, religion, or sports. Studies suggest that having a life goal leads to longer and more satisfying lives, with fewer health issues.<sup>[33,43]</sup> Moreover, the results demonstrated that PERMA model education increased the accomplishment component in students, which is similar to some studies that indicated that education on well-being improves accomplishment and feelings of achievement; students who have courage and perseverance not only finish what they started but also show perseverance and determination to achieve long-term goals over time. Various research has shown that achieving goals increases people's well-being over time.<sup>[18,26,30,37]</sup> Teaching the PERMA model can lead to greater happiness, fulfillment, and overall well-being for individuals, ultimately contributing to a more flourishing society, as suggested by the results of this research.

### Limitations and recommendation

The study had time limitations and only used a questionnaire for evaluation; so, results should be interpreted with caution. It was conducted only in the education and psychology departments; so, generalization should be conducted carefully. Future studies should consider other universities, departments, and cultures. The effect of PERMA model education on other personality components should also be measured. Additionally, using the PERMA model to teach different groups of society can show the effects of well-being on various aspects of people's lives. Individuals can experience greater happiness and fulfillment, which can ultimately lead to a more prosperous and thriving society.

### Conclusion

The study found that education in the PERMA model increased students' well-being and its components, specifically in positive relationships and engagement components, which can improve mental health, psychological well-being, and life satisfaction. The practical implication of this study is that attending to teaching well-being theory (PERMA) would be beneficial for students. It is recommended that universities and education systems use this method to improve students' well-being and prevent mental health problems. Students with a high degree of well-being may adapt when faced with unpleasant difficulties and can easily cope with problems, making them beneficial for society.

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## Conflicts of interest

There are no conflicts of interest.

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