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Enhancing emotional intelligence and psychological well-being: assessing a blended Ryff's and Salovey-Mayer-based intervention program

Mejorando la inteligencia emocional y el bienestar psicológico: evaluación de un programa de intervención híbrido basado en los modelos de Ryff y Salovey-Mayer

Diego Rivera-Porras[1a*], Astrid Rozo-Sánchez[2b], Omar Rozo-Pérez[3c], Daniel Cepeda-Pineda[4d], Yulineth Gómez-Charris[5a], Camilo A. Silvera[6a], Sandra-Milena Carrillo-Sierra[7b], Claudia-Carolina Cabrera-Gómez[8e], Valmore Bermúdez[9f]

SUMMARY

Objective: *To evaluate the effectiveness of the experiential program HEART: Harnessing Emotional Awareness and Resilience for Transformation in strengthening emotional intelligence and psychological well-being in first-semester university students.* **Method**: *A randomized, double-blind experimental design was implemented with two groups: control (n=27) and experimental (n=27). Both groups completed the Meta-State of Mood Scale (TMMS-24) and the Ryff Psychological Well-Being Scale in two phases: pre-intervention (pretest) and post-intervention (posttest).* **Results**: *An improvement in psychological well-being was observed in both groups after the intervention, with a higher percentage of students at higher levels. No significant differences were found between the control and experimental groups in terms of improved emotional intelligence or psychological well-being.* **Conclusions**: *Both the HEART program and the conventional treatment received by the control group were effective in strengthening students' emotional intelligence and psychological well-being.*

Keywords: *Emotional Intelligence, Psychological Well-Being, Experiential Program, University Students*

ORCID:
[1*] 0000-0003-2169-3208
[2] 0000-0002-3286-7632
[3] 0000-0002-2348-2810
[4] 0009-0006-8677-2731
[5] 0000-0003-3630-3276
[6] 0000-0003-4867-2175
[7] 0000-0001-9848-2367
[8] 0000-0002-2845-9994
[9] 0000-0003-1880-8887

a Universidad de la Costa, Departamento de Productividad e Innovación, Barranquilla 080001, Atlántico, Colombia
b Universidad de Pamplona, Facultad de Salud, Pamplona 543050, Colombia
c Universidad Simón Bolívar, Facultad de Ciencias Jurídicas y Sociales, Centro de Investigación en Estudios Fronterizos, Cúcuta 540001, Colombia
d Universidad de la Sabana, Facultad de Ciencias del Comportamiento; Chía 250001, Cundinamarca, Colombia;
e Universidad Mariana, Facultad de Humanidades y Ciencias Sociales, Programa de Psicología, Pasto 520001
f Universidad Simón Bolívar, Facultad de Ciencias de la Salud, Centro de Investigaciones en Ciencias de la Vida, Barranquilla 080001, Colombia

[*]**Corresponding Author:** Diego Rivera-Porras, E-mail: drivera23@cuc.edu.co

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RESUMEN

Objetivo*: Evaluar la efectividad del programa experiencial HEART: Harnessing Emotional Awareness and Resilience for Transformation para fortalecer la inteligencia emocional y el bienestar psicológico en estudiantes universitarios de primer semestre*. **Método***: Se implementó un diseño experimental aleatorizado y doble ciego con dos grupos: control (n = 27) y experimental (n = 27). Ambos grupos completaron la Meta-State of Mood Scale (TMMS-24) y la Escala de Bienestar Psicológico de Ryff en dos fases: preintervención (pretest) y postintervención (postest)*. **Resultados***: Se observó una mejora del bienestar psicológico en ambos grupos tras la intervención, con un mayor porcentaje de estudiantes en niveles superiores. No se encontraron diferencias significativas entre los grupos control y experimental en cuanto a la mejora de la inteligencia emocional ni del bienestar psicológico*. **Conclusiones***: Tanto el programa HEART como el tratamiento convencional del grupo control demostraron ser efectivos para fortalecer la inteligencia emocional y el bienestar psicológico en los estudiantes.*

Palabras clave*: Inteligencia emocional, bienestar psicológico, programa experiencial, estudiantes universitarios*

INTRODUCTION

Since its initial conceptualization by Salovey and Mayer (1) in the 1990s, Emotional Intelligence (EI) has become a central construct for understanding human adaptation, well-being, and performance. Extensive empirical evidence indicates that low levels of EI are associated with adverse personal and social outcomes, including reduced motivation, frustration, and difficulties in achieving goals (2). In this regard, Malinauskas and Malinauskiene (3) found a positive correlation among university students between EI, perceived social support, and psychological well-being, underscoring EI's mediating role in emotional regulation and life satisfaction.

The development of emotional intelligence and psychological well-being is rooted in early life. During childhood, particularly in the first years, the family environment plays a critical role in emotional development (4). Through observing and imitating adult behavior, children learn to recognise, express, and regulate their emotions. However, when caregivers fail to manage their own emotional states effectively, children often reproduce these maladaptive patterns, which can hinder their emotional learning. This vulnerability is further amplified in stressful or traumatic environments, where exposure to intense negative emotions without adequate coping strategies may result in dysfunctional emotional responses or the onset of affective disorders (5). During adolescence, the complexity of this process increases due to hormonal, social, and emotional changes (6).

Substantial empirical evidence supports the effectiveness of interventions to enhance EI. In a meta-analysis conducted by Molero et al. (7), which included 47 studies and 8,336 participants, emotional training, emotional education, and mindfulness-based programmes were found to significantly improve academic performance, psychological well-being, and social skills. Educational emotional programmes had the greatest impact on academic achievement and wellbeing, whereas mindfulness interventions were particularly effective in strengthening social competencies (8).

In university contexts, students face multiple challenges that can lead to emotional and physical exhaustion, procrastination, and interpersonal conflicts (9). Numerous studies (3, 10-12) have established associations among EI, psychological well-being (PW), and academic performance. Students with lower levels of EI or PW often experience greater stress and anxiety, which may undermine emotional stability and academic achievement (13). Conversely, higher levels of EI and PW are associated with greater engagement, resilience, and academic success (14).

Individuals with high emotional intelligence demonstrate skills such as self-awareness, self-regulation, and empathy, which foster resilience, positive self-esteem, and healthy interpersonal relationships (15). In contrast, those with lower EI and wellbeing are more prone to depres-sion, anxiety, mood disorders, and behavioral problems (15-17). From an integrative perspective, Ryff's (17) model of psychological well-being proposes a multidimensional approach encompassing autonomy, environmental mastery, personal

growth, and positive relations with others. Along these lines, Ferrari et al. (18) conducted a systematic review and meta-analysis of digital interventions targeting psychological well-being among university students. Their results revealed small yet significant improvements, highlighting the potential of technology-based approaches in promoting mental health.

Given this evidence, educational environments should promote evidence-based psychoeducational and experiential interventions to develop emotional competencies and resilience (19,20). Over the past decade, such programmes have expanded considerably due to their demonstrated impact. For instance, Năstasă et al. (21) showed that socio-emotional training effectively enhances the ability to identify, understand, and manage one's own emotions and those of others, contributing to better social and academic adjustment.

Recent studies (22-25) further confirm that social and emotional learning interventions significantly improve EI and psychological well-being. Contemporary systematic reviews and meta-analyses recommend comparing traditional educational or training approaches (control group) with active intervention programmes (experimental group) (26,27). While traditional approaches focus on didactic instruction and cognitive restructuring, experiential interventions emphasise practical activities that enhance emotional awareness and acceptance of both positive and negative emotions (21,28.29).

Despite the growing recognition of these constructs, no randomized controlled trials (RCTs) have yet explored the effects of experiential intervention programmes on EI and psychological wellbeing among university students. To address this gap, the present study aims to evaluate the effectiveness of the "Harnessing Emotional Awareness and Resilience for Transformation" (HEART) programme, compared with traditional training or education, in first-year university students. The main hypothesis proposes that the HEART programme is more effective than traditional education in improving EI and PW. Demonstrating its efficacy could position the HEART programme as an innovative and complementary alternative to conventional education, fostering healthier, more resilient, and emotionally competent learning environments in higher education.

MATERIALS AND METHODS

This study used a Randomized Controlled Trial (RCT) design, with the main objective of comparing the effectiveness of two interventions: the standard intervention, called "Training", and the experimental intervention, called HEART, specifically designed by the researchers. To ensure comparability between groups and minimize potential bias, participants were randomly allocated to the interventions. An independent researcher, not involved in the study, selected participants at random from the registration list, ensuring random assignment to treatments and the confidentiality of the information (30).

To avoid bias in the evaluation of the results, a double-blind design was adopted. In this way, neither the participants nor the researchers responsible for implementing the interventions and evaluating the results were aware of each participant's assignment. Both interventions were administered in similar formats (training vs. experiential workshop), and the techniques used were concealed. Finally, to minimize the impact of external variables on the results, the environmental conditions during intervention implementation were controlled. Classrooms with comparable characteristics (size, lighting, furniture) were used, and the sessions were scheduled at equivalent times and durations for both groups. This ensured that implementation conditions were consistent and comparable for all participants (30).

Instruments for Participant Evaluation

Trait Meta-Mood Scale (TMMS-24)

The TMMS-24, is an instrument that assesses emotional intelligence based on the model of Salovey and Mayer (31). This questionnaire consists of 24 items divided into three dimensions: Emotional Attention (items 1-8), Emotional

Clarity (items 9-16), and Emotional Repair (items 17-24) (33). The scale is Likert-type, with response options ranging from "strongly disagree" to "strongly agree". TMMS-24 assesses emotional states and the skills that enable individuals to be aware of and regulate their own emotions (32).

Ryff's Psychological Well-being Scale (33)

Ryff's Psychological Well-being Scale (SPW), originally called the Scales of Psychological Well-being, was translated into Spanish by Díaz et al. (33). This scale, is a suitable tool for studying psychological well-being from a positive psychological perspective. SPW has undergone several modifications to improve its internal consistency while maintaining a good fit between the data and the six-dimensional theoretical model. These dimensions are: Self-Acceptance (Cronbach's $\alpha=0.78$), Positive Relationships ($\alpha=0.83$), Autonomy ($\alpha=0.69$), Environmental Mastery ($\alpha = 0.69$), Personal Growth ($\alpha=0.68$), and Purpose in Life ($\alpha=0.78$) (34). The instrument consists of 39 items divided into six dimensions: Self-acceptance (items 1, 7, 13, 19, 25 and 31), Positive Relationships (items 2, 8, 14, 20, 26 and 32), Autonomy (items 3, 4, 9, 10, 15, 21, 27 and 33), Mastery of the Environment (items 5, 11, 16, 16, 22, 28 and 39), Personal Growth (items 24, 30, 34, 35, 36, 37 and 38) and Purpose in Life (items 6, 12, 17, 18, 23 and 29) (34). The scale is Likert-type and has five response alternatives: Never (1), Rarely (2), Sometimes (3), Almost Always (4), Always (5).

Selection of participants

For the study, 54 first-semester psychology students from two private universities in the city of Cúcuta were randomly selected. The students had to meet the inclusion criteria to be chosen as participants in the study: a) be enrolled as first-semester students in the psychology program, b) be enrolled in one of the two selected universities, c) have completed the informed consent and/or assent form, d) have completed the pre-and post-assessments, and e) have participated in the planned interventions. The selection process was developed in several stages, beginning with recruitment, where contact was established with the selected universities to explain the study and request the collaboration of first-semester psychology students. Then, in the pre-selection stage, eligibility criteria were applied to students interested in participating. This process included reviewing enrollment records and applying informed consent and/or assent forms. Finally, to determine the appropriate sample size to detect changes in the dependent variables, G*Power 3.0.10 was used. A confidence level of 0.95, a power of 0.95, and an effect size of 0.25 were considered. The sample size calculation was performed "a priori", considering various input data. Applying the sample size calculation for repeatedmeasures ANOVA with within- and between-subjects effects, the resulting sample size was 54 participants across 2 groups, with a true power of 0.950077.

Allocation of interventions

Participants were randomly assigned. From a preselected group of 54 individuals who met all eligibility criteria, they were assigned to the intervention groups. To prepare for the selection, the students' names were placed in a bag, and an external researcher, unrelated to the students, randomly selected them, ensuring impartiality in the process. Once the names were selected, the students were randomly assigned to the control and experimental groups. This assignment process continued until both groups had 27 participants each.

Implementation of interventions

An experiment was designed with two groups: a control group and an experimental group (Table 1). Each group participated in six 60-minute intervention sessions, held twice a week over two weeks. Initial measurements (PRETEST) were taken to establish a baseline for each group.

Table 1. General outline of experimental design

Sample	PRETEST	Random allocation	Groups		Treatment		POS-TEST
Sample chosen	Evaluation instruments	R	A	→	X1	→	A
			B	→	X2	→	B

R: Random assignment. A: Control group. B: Experimental group. X1: Baseline intervention. X2: Experimental intervention

Then, the respective treatments were applied to each group. Finally, new measurements (POST-TEST) were performed to evaluate the effects of the treatments and identify any significant changes. To reduce bias, the interventions were administered in a masked manner, meaning both the professionals delivering the treatments and the participants were unaware of the specific treatment each participant received and the group to which they belonged.

The sessions focused on specific aspects of Emotional Intelligence (EI) and Psychological Well-Being (PW). In the control group, a coaching method was applied. The first two sessions focused on EI, addressing attention to emotions and emotional clarity, and emotional repair. The remaining four sessions focused on BP, exploring themes such as self-acceptance, autonomy, positive relationships with others, purpose in life, personal growth, mastery of the environment, positive outlook on life, joy of living, personal fulfillment, and satisfaction with life. In the experimental group, an experiential workshop was applied. As in the control group, the first two sessions focused on EI, while the remaining four sessions focused on the same aspects of PW as in the control group (Table 2).

Note: Of the 130 participants initially recruited for selection, 97 were eligible. A total of 54 participants were selected. The population was reduced to 27 individuals per group, for a total of 54 (7 males and 47 females), because the remaining individuals did not complete the treatment.

Statistical analysis

Three statistical programs, IBM SPSS version 27, PAST and RStudio, were used to analyze the results of the experiment, making initial and final measurements of the variables under study for the control and experimental groups with validated instruments; the qualitative variables were analyzed using absolute frequencies and the quantitative variables using arithmetic means and standard deviations (SD), verifying the normality of the distribution of the quantitative variables with the Shapiro-Wilk test and Q-Q graphs. Subsequently, the reliability of the instruments was validated in both phases of the study and the assumptions of normality and homogeneity of variances were verified, allowing the calculation of descriptive measures to provide an overview of the results and, finally, to determine the impact of the intervention and compare the means using the repeated measures ANOVA test, establishing a value of $p < 0.05$ as the threshold for statistical significance.

RESULTS

Sample characteristics

In the control group, most participants were female, representing 85.2% (23) of the total, while males constitute 14.8% (4). Regarding age distribution, 44% (12) were 17 years old, 25.9% (7) were 18 years old, 14.8% (4) were 19 years old, and 7.4% (2) were 16 or 20 years old. Regarding the educational institution, the participants were

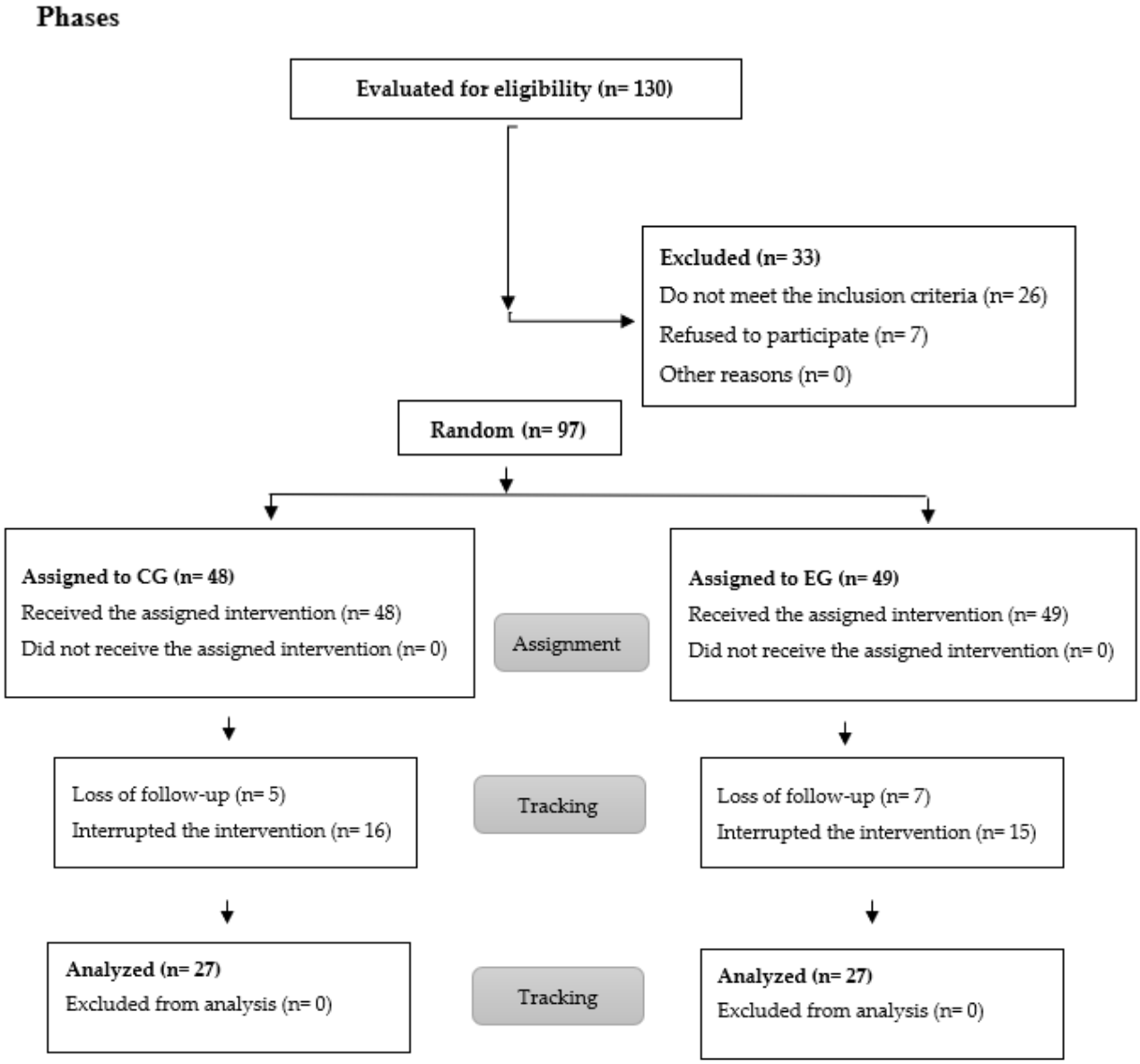
Table 2. Session design (Referral and Treatment)

Group	Meeting	Variable	Theme	Methodology	Duration
Control	Session 1	Emotional intelligence	Attention to emotions and emotional clarity	Training	60 minutes
	Session 2	Emotional intelligence	Emotional repair		
	Session 3	Psychological well-being	Self-acceptance, autonomy, and positive relationships with others		
	Session 4	Psychological well-being	Purpose in life, personal growth, and mastery of the environment		
	Session 5	Psychological well-being	Positive outlook on life and joie de vivre		
	Session 6	Psychological well-being	Personal fulfilment and life satisfaction		
Experimental	Session 1	Emotional intelligence	Attention to emotions and emotional clarity	Experiential workshop	60 minutes
	Session 2	Emotional intelligence	Emotional repair		
	Session 3	Psychological well-being	Self-acceptance, autonomy, and positive relationships with others		
	Session 4	Psychological well-being	Purpose in life, personal growth, and mastery of the environment		
	Session 5	Psychological well-being	Positive outlook on life and joie de vivre		
	Session 6	Psychological well-being	Personal fulfilment and life satisfaction		

almost equally divided between two institutions, with 48.1% (13) in one and 51.9% (14) in the other. In the experimental group, females were also in the majority, accounting for 88.9% (24) of the total, while males represented 11.1% (3). In terms of age, 55.6% (15) were 17 years old, 18.5% (5) were 18 or 19 years old, and 3.7% (1) were 21 or 40 years old. As in the control group, the participants were almost equally distributed between the two educational institutions, with 48.1% (13) in one and 51.9% (14) in the other (Table 3).

Scores of the variables studied

This study focused on the analysis of the behavior of two variables: Emotional Intelligence (EI) and Psychological Well-Being (PW), and their respective components, evaluated in two groups: the control and experimental. Qualitative variables were described using frequencies and percentages. In the case of EI, three levels of classification were established: "Needs improvement - Little", "Adequate" and "Needs improvement - Too much"; while, for PW, six



(b): Before; (a): After

levels were established: "Very low", "Low", "Moderate-low", "Moderate-high", "High" and "Very high" (Table 4). Quantitative variables were analyzed using measures of central tendency and dispersion, specifically, arithmetic means and standard deviations (SD) (Table 5).

In the initial analysis of Emotional Intelligence (EI) and Psychological Well-Being (PW) expressed as qualitative variables, it was found that in the control group, 48.10% (n=13) of the participants needed "Improvement (Little)" in EI, 40.70% (n=11) were classified as "Adequate" and 11, 10% (n=3) required "Improvement (Too Much)", while in the experimental group, a lower percentage (22.20%, n=6) needed "Improvement (Little)", a higher number (44.40%, n=12) were classified as "Adequate" in IE. There were no participants (0%) in the "Improvement (Too Much)" category. As for PW, no cases were observed in the negative categories ("Very low" or "Low") in either group and the majority of participants in both groups were in the "Moderate-high" categories (control: 48.10%, n=13; experimental: 40.70%, n=11) and "High" (control: 29.60%, n=8; experimental: 33.30%, n=9), indicating a positive level of psychological well-being, with a lower percentage of participants in both groups

Table 3. The demographic characteristics of the participants are expressed in absolute and relative frequencies

Characteristic	Control Group			Experimental Group		
	Category	n	%	Category	N	%
Sex	Female	23	85.20	Female	24	88.90
	Male	4	14.80	Male	3	11.10
Age	16	2	7.40	17	15	55.60
	17	12	44.40	18	5	18.50
	18	7	25.90	19	5	18.50
	19	4	14.80	21	1	3.70
	20	2	7.40	40	1	3.70
Educational Institution	1	13	48.10	1	13	48.10
	2	14	51.90	2	14	51.90

Table 4. Scores of the variables "Emotional intelligence" and "Psychological well-being" were expressed qualitatively

Variable		Control				Experimental			
		(b)		(a)		(b)		(a)	
		n	%	n	%	n	%	n	%
Emotional intelligence	Needs improvement (Little)	13	48.10	6	22.20	16	59.30	7	25.90
	Adequate	11	40.70	12	44.40	10	37.00	20	74.10
	Needs improvement (Too much)	3	11.10	9	33.30	1	3.70	0	0.00
	Total	27	100.00	27	100.00	27	100.00	27	100.00
Psychological well-being	Very low	0	0.00	0	0.00	0	0.00	0	0.00
	Under	0	0.00	1	3.70	0	0.00	0	0.00
	Moderate-Low	6	22.20	5	18.50	7	25.90	3	11.10
	Moderate-High	13	48.10	11	40.70	13	48.10	17	63.00
	High	8	29.60	9	33.30	7	25.90	7	25.90
	Very high	0	0.00	1	3.70	0	0.00	0	0.00
	Total	27	100.00	27	100.00	27	100.00	27	100.00

(b): Before; (a): After

Table 5. The scores for the variables "Emotional intelligence" and "Psychological well-being" were quantified

Group		$\bar{x}$	DE	n
Emotional intelligence (b)	Control	73.81	20.59	27
	Experimental	68.74	16.2	27
Emotional intelligence (a)	Control	84.70	24.78	27
	Experimental	78.00	13.77	27
Psychological well-being (b)	Control	162.00	29.27	27
	Experimental	155.67	22.38	27
Psychological well-being (a)	Control	163.44	31.58	27
	Experimental	160.85	20.79	27

(b): Before; (a): After. $\bar{x}$: Mean. SD: Standard deviation. n: Sample

classified as "Moderate-low" (control: 22.20%, n=6; experimental: 18.50%, n=5). When comparing the groups, the experimental group presented a higher percentage of participants with an "Adequate" level of EI. In terms of PW, both groups showed a similar distribution, with most participants concentrated in the "Moderate-high" and "High" categories (Table 4).

The means ($\bar{x}$) and standard deviations (SD) of the variables "Emotional Intelligence" (EI) and "Psychological Well-Being" (PW) were analyzed, considering possible changes between the initial (b) and final (a) measurements. In the initial EI measurement, the control group had a mean of 73.81 (SD=20.59), and the experimental group had a lower mean of 68.74 (SD=16.20). Still, in the final measurement, both groups experienced an increase in mean EI, with the control group reaching a mean of 84.70 (SD=24.78) and the experimental group a mean of 78.00 (SD=13.77). As for PW, no significant differences were observed in the initial means between groups, with the control at 162.00 (SD=29.27) and the experimental at 155.67 (SD=22.38), but as with EI, both groups showed a slight increase in the final mean PW, with the control at 163.44 (SD=31.58) and the experimental at 160.85 (SD=20.79) (Table 5).

The analysis of the Repeated Measures ANOVA results focused on the variables "Emotional Intelligence" (EI) and "Psychological Well-Being" (PW) across two groups: control and experimental. Both within-group differences (before and after the intervention) and between-group differences (control vs. experimental) were evaluated at both measurement moments (pre- and post-intervention) (Table 6).

Regarding Emotional Intelligence (EI), statistically significant differences were observed in both groups after the intervention. The control group showed an improvement in EI, from a mean of 73.81 (SD=20.59) to 84.70 (SD=24.78), with a p-value of 0.000108. Similarly, the experimental group also showed an increase in EI, from a mean of 68.74 (SD=16.20) to 78.00 (SD=13.77), with the same statistical significance. In the between-group analysis, no significant differences in EI were detected between groups before or after the intervention (p=0.736 in both cases). Therefore, although both groups experienced an increase in EI, no significant differences were observed between them.

Regarding Psychological Well-Being (PW), no significant changes were detected in any of the groups after the intervention. The PW means of the control group remained practically unchanged, going from 162.00 (SD=29.27) to 163.44 (SD=31.58), and the same occurred in the experimental group, which went from 155.67 (SD=22.38) to 160.85 (SD=20.79). In

Table 6. Hypothesis testing - Repeated measures ANOVA for the variables "Emotional Intelligence" and "Psychological Well-being" with intra- and inter-group comparison before and after the interventions in the control and experimental group

Variable	Type of Hypothesis	Null Hypothesis (H0)	Alternative Hypothesis (H1)
Emotional Intelligence (EI)	Intra-Group	$\mu(a) = \mu(d)$	$\mu(a) \neq \mu(d)$
Psychological Well-Being (PW)	Intra-Group	$\mu(a) = \mu(d)$	$\mu(a) \neq \mu(d)$
Emotional Intelligence (EI) (before vs. after)	Between-Groups	$\mu(a) = \mu(d)$	$\mu(a) \neq \mu(d)$
Psychological Well-Being (PW) (before vs. after)	Between-Groups	$\mu(a) = \mu(d)$	$\mu(a) \neq \mu(d)$

H0: Null hypothesis: States that there is no significant difference between the means. H1: Alternative hypothesis: States that there is a significant difference between the means. μ: Arithmetic mean. (a)Before the intervention. (d): After the intervention.

this case, the statistical significance was $p=0.16$ for both groups. As with EI, the between-group analysis of PW showed no significant differences between groups before or after the intervention, with p-values of 0.16 in both cases. This indicates that although EI improved in both groups after the intervention, no significant changes in BP or significant differences between groups were observed in either variable.

DISCUSSION

This study evaluated the effectiveness of the intervention program HEART in strengthening emotional intelligence and psychological well-being. The study was conducted with first-semester students from two private higher-education institutions. However, the results are mediated by several key characteristics of the sample. The participants are in a transitional stage of adapting to university life (34); they are in a new environment, moving from school life to a context with higher demands, where their social relationships must be modified. Some are still minors and form their personalities, during which students construct imaginaries of the new environment, and difficulties arise due to the extensive academic load (35). In addition, the transition stage following the social isolation during the COVID-19 pandemic transformed society at the social, family, work, and educational levels. In the educational context, classes were taught virtually, significantly reducing social interaction. Therefore, with the return to face-to-face teaching, there is a possibility that emotional skills may need retraining (36).

Regarding emotional intelligence, the research showed that in the control group, the dimension was slightly strengthened from before to after the assessment. In contrast, in the experimental group, the strengthening of emotional intelligence was evident in more participants. According to Ghelbash et al. (37), an EQ-based training program effectively develops social skills during adolescence. Regarding emotional attention between the groups, variability is observed, with a notable strengthening in the experimental group. Relating to emotional clarity, this dimension was fostered and strengthened in the control group, although some participants need to improve, as they have an excess of it. In the experimental group, many participants achieved adequate clarity. In addition, changes were observed in both treatments in emotional repair, with greater effectiveness in the experimental group.

In agreement with Suárez Cretton & Castro Méndez (24), a social skills program that included emotional intelligence did not yield a significant increase in the variable; rather, it showed only a slight increase in some dimensions. Similarly, Martínez-Monteagudo et al. (38) point out that the various contexts of social interaction generate multiple reactions in individuals. In addition, people respond to these situations or demands subjectively, depending on their resources. Such interaction is mediated by emotional control, self-relationships, attention, clarity, and emotional repair in each situation, thus highlighting the importance of adequate emotional intelligence. On the other hand, Gilar-Corbi et al. (39) report in their quasi-experimental study that developing an intervention on emotional intelligence for highereducation students without affecting the acquisition of specific career competencies is effective. That is, without interfering in their academic performance, but rather fostering new personal competencies that strengthen their adequate development.

In agreement with the study by Morales-Rodríguez et al. (40), after implementing a series of practical workshops, only a slight improvement in psychological well-being was observed, even when individual activities were carried out. Likewise, in the present study, psychological well-being improved in both the control and experimental groups, although the scores were slightly higher than those observed previously. In addition, a program developed by García-Álvarez et al. (41) indicates that, after applying it to two groups of educational personnel comprising teachers, students, and administrative staff, an improvement in the evaluation of their optimal functioning was observed. Therefore, they recognize that they are beings in constant development, growth, and updating, building their best version from their potential. Likewise, Kyun Lee (42), in a systematic review of multiple studies on interventions for psychological well-being, highlighted that higher levels of this variable are associated with better physical health and, in addition, reduce the risk of subsequent disorders. This behavior is because people with high levels of psychological well-being are more resilient to the changes and adversities in their daily lives.

It is important to mention that, according to Luna et al. (43), adolescents want to integrate into a social group in their new environment. There are polarized thoughts about transforming themselves to achieve integration into a group or, on the contrary, continuing their way of being and strengthening their acceptance in line with their abilities and skills. In this study, the dimension of self-acceptance in the control group was strengthened. In the experimental group, the moderate-high level was maintained, the high level increased, and the low level decreased, indicating that both types of treatment strengthened this dimension.

In addition, an improvement in the dimension of positive relationships was observed in both the control and experimental groups, from before to after the treatment, with higher percentages in the high and very high levels. According to Bi and Li (22), in their study on psychological well-being among students, students highlight the importance of belonging to a group and, to this end, maintain positive relationships with their peers. That is, in a stage of transition and adaptation, as in the first semester, it is key to foster interpersonal relationships through experiential workshops and training, since this study observed that both types of treatment contribute to strengthening positive relationships. On the other hand, Capode et al. (44) point out that autonomy obtained the lowest mean score and was the dimension most affected by university students. This observation stems from adolescents being easily influenced, sometimes struggling to make independent decisions, and often failing to express their thoughts. However, this research found that although there were movements in the control group's scores, the dimension's mean remained unchanged. In addition, a slight decrease from moderate-high to moderate-low was identified in the experimental group, and the low level was eliminated; however, the high level maintained its percentage. In other words, this dimension was among the least impactful across both treatment types.

Likewise, in the mastery-of-the-environment dimension, the control group showed slight variations between pre- and post-intervention levels. However, positive modifications were identified in the experimental group, strengthening moderate-high and high levels among participants in this dimension. Under this, García-Álvarez et al. (41) identified in their developed program that it was possible to increase the mastery of the environment through workshops. This phenomenon occurs because it increases students' perceptions of environmental management, allowing them to adapt or modify it, generating a sense of opportunity for growth, fostering their sense of independence, and increasing their competence in the new social environment. Regarding the personal growth dimension, there were variations across levels in the control group before and after the intervention. Some high levels decreased, and the moderate-high level improved. However, in the experimental group, scores were more stable, with only a slight shift from the very high to the moderate-high level. In agreement with this, Rand et al. (45) found a moderate-to-high level of psychological well-being and academic performance in this dimension. In addition, they state that the academy is responsible for providing an environment that fosters students' personal growth and enhances their optimistic acceptance of their lives through various actions.

Regarding the purpose-in-life dimension, García-Álvarez et al. (41) identified favorable levels within the educational community in their study. Similarly, in the present study, the control group showed greater improvement from before to after, as did the experimental group, which increased the percentage at the moderate-high and high levels after the intervention. This indicates that the participants have adequate life projects, a defined direction in their lives, and perceive a purpose they should work toward, considering their capabilities and the environment in which they find themselves. About the hypotheses posed for the emotional intelligence variable, the comparison of intragroup arithmetic means confirmed the alternative hypothesis for both the control and experimental groups, i.e., a statistically significant difference was observed. However, no statistically significant difference was observed in psychological well-being, confirming the null hypothesis. This indicates that although participants showed significant improvement in the emotional intelligence variable, the increase in the psychological well-being variable was not significant.

On the other hand, when comparing the intergroup arithmetic means before and after the emotional intelligence and psychological well-being variables, the null hypothesis was confirmed for both groups, i.e., no statistically significant difference was observed. Although both variables showed slight increases after the intervention, the dynamics remained unchanged, as the control group started at a higher level than the experimental group. This trend was maintained after the intervention, with both groups showing an increase. However, the control group continued to score higher. Given the above, it is relevant to note that both treatments were effective in strengthening emotional intelligence and psychological well-being, as evidenced by increased scores. However, they maintained the same tendency, suggesting that it may be necessary to increase the number of sessions to determine whether this is a predisposing factor for this result. This behavior occurs because increasing exposure time can corroborate whether adding more elements yields statistically significant differences. It should be noted that the study conducted by Cabrera-Gómez et al. (46), which focused on strengthening psychological well-being and was developed over a longer period, obtained significant results. They found that the control group entered with a higher level of well-being than the experimental group. At the end of the program, the experimental group showed a significant increase in well-being compared to the control group. However, Herpertz et al. (47) concluded that scores remained stable after 6 months of training. The authors highlighted that although emotional intelligence can be fostered through training, it is important to remember that personality traits and individual characteristics moderate the program's effectiveness.

Finally, as mentioned by Kyun Lee (42), it is important to highlight the need to continue deepening the strengthening of emotional intelligence and psychological well-being in students from the beginning of their professional training. This objective can be achieved through different designs or methodological approaches, expanding the number of participants, and collaborating with other university careers. The objective is for students to develop skills and competencies to adapt effectively to their social environment. Various studies (38,48) indicate that adolescents face problems in the social, family, academic, and personal domains, which can negatively affect their emotional health and, consequently, reduce their psychological well-being. Furthermore, Yuan-Yuan et al. (34) highlight that well-being interventions equip first-year college students with the skills to adapt to the new environment effectively. Likewise, emotion management will help them reduce the emotional distress they experience from the new academic responsibilities of the college campus.

CONCLUSIONS

A program was developed to enhance emotional intelligence and psychological well-being for first-semester students at two Higher Education Institutions in Cúcuta, Norte de Santander, Colombia. This program was based on Salovey and Mayer's Trait MetaMood Scale (TMMS-24) and Ryff's (1989) Multidimensional Model of Well-being. The intervention program HEART met the criteria set by experts for its implementation among first-semester students at two private higher education institutions.

In the pretest, both the control and experimental groups had low overall emotional intelligence scores, which increased to high scores in the post-test. Regarding psychological well-being, in the pretest, participants in the control group were distributed into moderate-low, moderate-high, and high levels. In the post-test, in addition to these levels, a small proportion were in the low and very high levels, with the moderate-high and high levels predominating. In the experimental group, participants were at the same levels in the pretest, but in the post-test, although these levels were maintained, the percentages within them varied: the high level remained, the moderate-low level decreased, and the moderate-high level increased.

The research led to the rejection of the null hypothesis when comparing the intra-group arithmetic means of the emotional intelligence variable, finding statistically significant differences in the scores obtained before and after the intervention in both groups. However, no statistically significant differences were observed for the psychological well-being variable when comparing the intra-group arithmetic means before and after the intervention. When arithmetic mean comparisons were made between groups, no statistically significant differences were found in the scores obtained before and after the intervention for either variable in either the control or the experimental groups.

It is important to note that both treatments were effective in strengthening emotional intelligence and psychological well-being, though not significantly so. In addition, the control group showed higher levels of both variables in the pretest, a trend that was maintained in the post-test. As the experimental group strengthened, the control group also increased its score. It should be noted that the population under study is in the process of adaptation, so it is relevant to continue promoting programs that strengthen emotional intelligence and psychological well-being to facilitate effective adaptation to university life and to face the challenges the context demands in a healthy way.

Author Contributions

Conceptualization: D.R.-P., A.R.-S., O.R.-P., D.C.-P., Y.G.-C., C.A.S., S.-M.C.-S., C.-C.C.-G., and V.B.; Investigation: D.R.-P., D.C.-P., and Y.G.-C.; Methodology: D.R.-P., C.-C.C.-G., and V.B.; Writing—original draft: D.R.-P., A.R.-S., O.R.-P., D.C.-P., Y.G.-C., C.A.S., S.-M.C.-S., C.-C.C.-G., and V.B.; Writing—review and editing: D.R.-P., A.R.-S.,

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Informed Consent Statement. Both adults and minors were asked to consent or to assent, as appropriate, before participating in the study. The investigators explained the research in detail and provided copies of the relevant documents so that participants and their families could make an informed decision. Confidentiality of all information provided was maintained. Although participation in the study offered no direct benefits, participants may have experienced improvements in their emotional intelligence and psychological well-being. Risks were minimal, though participants may have felt uncomfortable answering questions or participating in activities. Participants' right to withdraw from the study without incurring costs was respected.

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REFERENCES

1. Salovey P, Mayer JD. Emotional intelligence. Imagination Cogn Pers. 1990;9(3):185-211.
2. Goleman D. Inteligencia emocional. Barcelona: Kairós; 1995.
3. Malinauskas R, Malinauskiene V. The relationship between emotional intelligence and psychological well-being among male university students: the mediating role of perceived social support and perceived stress. Int J Environ Res Public Health. 2020;17(5):1605.
4. Gassman-Pines A, Ananat EO, Fitz-Henley J. COVID-19 and parent-child psychological well-being. Pediatrics. 2020;146(4):e2020007294.
5. Feng Q, Cui M. Indulgent parenting and the psychological well-being of adolescents and their parents. Children (Basel). 2023;10(3):451.
6. Frase RT, Bauldry S, Suitor JJ, Gilligan M, Ogle D. Adult children's education and mothers' psychological well-being: do adult children's problems mediate this relationship? J Gerontol B Psychol Sci Soc Sci. 2023;78(3):496-505.
7. Puertas Molero P, Zurita-Ortega F, Chacón-Cuberos R, Castro-Sánchez M, Ramírez-Granizo I, González-Valero G. Emotional intelligence in the educational field: a meta-analysis. An Psicol. 2020;36(1):84-91.
8. Budak T, Mede E. The relationship between emotional intelligence, foreign language anxiety, and demotivational factors in an English preparatory language program. Colomb Appl Linguist J. 2022;24(1):6-22.
9. Brett CE, Mathieson ML, Rowley AM. Determinants of wellbeing in university students: the role of residential status, stress, loneliness, resilience, and sense of coherence. Curr Psychol. 2023;42(23):19699-708.
10. Baradaran Bazaz S, Yaghobi Hasankala Q, Asghar Shojaee A, Unesi Z. The effects of traditional games on preschool children's social development and emotional intelligence: a two-group, pretest-post-test, randomized, controlled trial. Mod Care J. 2018;15(1):e66605.
11. Ang WHD, Lau Y. How does trait emotional intelligence predict undergraduate nursing students' resilience? A structural equation modelling approach. Nurse Educ Today. 2024;132:106132.
12. Gupta R, Singh N, Kumar R. Longitudinal predictive validity of emotional intelligence on first year medical students' perceived stress. BMC Med Educ. 2017;17:139.

13. Zhoc KC, King RB, Chung TS, Chen J. Emotionally intelligent students are more engaged and successful: examining the role of emotional intelligence in higher education. Eur J Psychol Educ. 2020;35(4):839-63.
14. Suleman Q, Hussain I, Syed MA, Parveen R, Lodhi IS, Mahmood Z. Association between emotional intelligence and academic success among undergraduates: a crosssectional study in KUST, Pakistan. PLoS One. 2019;14(7):e0219468.
15. Sánchez-Álvarez N, Extremera N, Fernández-Berrocal P. The relation between emotional intelligence and subjective well-being: a meta-analytic investigation. J Posit Psychol. 2016;11(3):276-85.
16. Duffy A, Keown-Stoneman C, Goodday S, Horrocks J, Lowe M, King N, et al. Predictors of mental health and academic outcomes in first-year university students: identifying prevention and early-intervention targets. BJPsych Open. 2020;6(3):e46.
17. Ryff CD. Happiness is everything, or is it? Explorations on the meaning of psychological well-being. J Pers Soc Psychol. 1989;57(6):1069-81.
18. Ferrari M, Allan S, Arnold C, Eleftheriadis D, Alvarez-Jimenez M, Gumley A, Gleeson JF. Digital interventions for psychological well-being in university students: systematic review and meta-analysis. J Med Internet Res. 2022;24(9):e39686.
19. Khorasani EC, Ardameh M, Sany SBT, Tehrani H, Ghavami V, Gholian-Aval M. The influence of emotional intelligence on academic stress among medical students in Neyshabur, Iran. BMC Psychiatry. 2023;23:848.
20. Cosmas G. First-year university students' psychological well-being through seven weeks of online learning during the COVID-19 pandemic. Postmodern Openings. 2022;13(1 Suppl 1):465-79.
21. Năstasă LE, Zanfirescu ȘA, Iliescu D, Farcaș AD. Improving emotional intelligence in adolescents: an experiential learning approach. Curr Psychol. 2023;42(11):9119-33.
22. Bi D, Li X. Psychological flexibility profiles, college adjustment, and subjective well-being among college students in China: a latent profile analysis. J Contextual Behav Sci. 2021;20:20-6.
23. Cantero MJ, Bañuls R, Viguer P. Effectiveness of an emotional intelligence intervention and its impact on academic performance in Spanish pre-adolescent elementary students: results from the EDI program. Int J Environ Res Public Health. 2020;17(20):7621.
24. Suárez Cretton X, Castro Méndez N. Effectiveness of a programme to stimulate socioemotional skills in first-year university students. Rev Cub Educ Super. 2022;41(2).
25. Ryff CD, Keyes CLM. The structure of psychological well-being revisited. J Pers Soc Psychol. 1995;69(4):719-27.
26. Kraiss J, Redelinghuys K, Weiss LA. The effects of psychological interventions on well-being measured with the Mental Health Continuum: a meta-analysis. J Happiness Stud. 2022;23(7):3655-89.
27. Oliveira S, Roberto MS, Pereira NS, Marques-Pinto A, Veiga-Simão AM. Impacts of social and emotional learning interventions for teachers on teachers' outcomes: a systematic review with meta-analysis. Front Psychol. 2021;12:677217.
28. Deslauriers L, McCarty LS, Miller K, Callaghan K, Kestin G. Measuring actual learning versus feeling of learning in response to being actively engaged in the classroom. Proc Natl Acad Sci U S A. 2019;116(39):19251-7.
29. Reuell P. Study shows students in 'active learning' classrooms learn more than they think. Harvard Gazette. 2019.
30. de Vocht F, Katikireddi SV, McQuire C, Tilling K, Hickman M, Craig P. Conceptualising natural and quasi experiments in public health. BMC Med Res Methodol. 2021;21:96.
31. Salovey P, Mayer J. Inteligencia emocional. Imagin Cogn Pers. 1990;9(3):185-211.
32. Sánchez-Cabrero R, Arigita-García A, Gil-Pareja D, Sánchez-Rico A, Martínez-López F, Sierra-Macarrón L. Measuring the relation between academic performance and emotional intelligence at the university level after the COVID-19 pandemic using TMMS-24. Sustainability. 2022;14(6):3142.
33. Díaz D, Rodríguez R, Blanco A, Moreno B, Gallardo I, Valle C, Dierendonck D. Adaptación española de las escalas de bienestar psicológico de Ryff. Psicothema. 2006;18(3):572-7.
34. Xu YY, Wu T, Yu YJ, Li M. A randomized controlled trial of well-being therapy to promote adaptation and alleviate emotional distress among medical freshmen. BMC Med Educ. 2019;19:182.
35. Santana-Monagas E, Nunez JL. Predicting students' basic psychological need profiles through motivational appeals: relations with grit and well-being. Learn Individ Differ. 2022;97:102162.
36. Rogowska AM, Meres H. The mediating role of job satisfaction in the relationship between emotional intelligence and life satisfaction among teachers during the COVID-19 pandemic. Eur J Investig Health Psychol Educ. 2022;12(7):666-76.
37. Ghelbash Z, Zarshenas L, Dehghan Manshadi Z. A trial of an emotional intelligence intervention in an

Iranian residential institution for adolescents. Clin Child Psychol Psychiatry. 2021;26(4):993-1002.
38. Martínez-Monteagudo MC, Inglés CJ, Suriá R, Lagos N, Delgado B, García-Fernández JM. Emotional intelligence profiles and self-concept in Chilean adolescents. Curr Psychol. 2021;40:3860-7.
39. Gilar-Corbi R, Pozo-Rico T, Pertegal-Felices ML, Sánchez B. Emotional intelligence training intervention among trainee teachers: a quasi-experimental study. Psicol Reflex Crit. 2019;31:33.
40. Morales-Rodríguez FM, Espigares-López I, Brown T, Pérez-Mármol JM. The relationship between psychological well-being and psychosocial factors in university students. Int J Environ Res Public Health. 2020;17(13):4778.
41. García-Álvarez D, Soler MJ, Achard-Braga L, Cobo-Rendón R. Program of positive psychology applied to education on the psychological wellbeing of educational actors. Rev Electr Educare. 2020;24(1):370-93.
42. Kyun Lee J. The effects of social comparison orientation on psychological well-being in social networking sites: serial mediation of perceived social support and self-esteem. Curr Psychol. 2022;41(9):6247-59.
43. Luna D, Vargas-de la Cruz I, Núñez-Gaytán ÓA, Figuerola-Escoto RP, Barrera-Hernández LF, Meneses-González F, Lezana-Fernández MA. Association between empathy, anxiety and psychological well-being in Mexican medical students. Cir Cir. 2023;91(5):685-9.
44. Capone V, Caso D, Donizzetti AR, Procentese F. University student mental well-being during COVID-19 outbreak: what are the relationships between information seeking, perceived risk and personal resources related to the academic context? Sustainability. 2020;12(17):7039.
45. Rand KL, Shanahan ML, Fischer IC, Fortney SK. Hope and optimism as predictors of academic performance and subjective well-being in college students. Learn Individ Differ. 2020;81:101906.
46. Cabrera-Gómez CC, Caldas-Luzeiro J, Rivera-Porras D, Carrillo-Sierra SM. Influencia del programa "Florece" en el bienestar psicológico de jóvenes universitarios. Arch Venez Farmacol Ter. 2019;38(5):553-62.
47. Herpertz S, Schütz A, Nezlek J. Enhancing emotion perception, a fundamental component of emotional intelligence: using multiple-group SEM to evaluate a training program. Pers Individ Dif. 2016;95:11-9.
48. Cuartero N, Tur AM. Emotional intelligence, resilience and personality traits neuroticism and extraversion: predictive capacity in perceived academic efficacy. Nurse Educ Today. 2021;102:104933.