Impact of psychoeducational intervention on nursing students' perceived self-efficacy

Impacto de intervenção psicoeducacional na autoeficácia percebida de estudantes de enfermagem

Impacto de intervención psicoeducacional en la autoeficacia percibida de estudiantes de enfermería

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ABSTRACT
Objective: to evaluate the impact of a psychoeducational program on the levels of self-efficacy, self-esteem, and anxious and depressive symptoms in students starting their undergraduate nursing program. **Method:** this quasi-experimental, multicenter, time-series type study was conducted with 82 students at two public institutions of higher education, from September 2018 to May 2019. Based on the self-efficacy construct, the psychoeducational program contemplated nursing activities of the "Strengthening self-esteem" intervention proposed by the Nursing Interventions Classification. The outcomes evaluated were self-efficacy, on the General and Perceived Self-Efficacy Scale; self-esteem, on the Rosenberg Self-Esteem Scale; and anxious and depressive symptoms, on the Hospital Anxiety and Depression Scale. **Results:** the psychoeducational intervention had a positive effect on the students' perception of general self-efficacy. Self-esteem and anxious and depressive symptoms were not influenced. **Conclusion:** the program impacted levels of self-efficacy positively.
Descriptors: Health promotion; Mental health; Self-efficacy; Nursing students.

RESUMO
Objetivo: avaliar o impacto de um programa psicoeducacional nos níveis de autoeficácia, autoestima e sintomas ansiosos e depressivos em estudantes no início da graduação em enfermagem. **Método:** pesquisa multicêntrica, quase experimental, do tipo tempo-série, desenvolvida em duas instituições de ensino superior públicas, com 82 estudantes, no período de setembro de 2018 a maio de 2019. O programa psicoeducacional foi elaborado com base no construto da autoeficácia, baseando-se nas atividades de enfermagem da intervenção "Fortalecimento da autoestima", proposta pela *Nursing Interventions Classification*. Os desfechos avaliados foram: autoeficácia, mensurada pela Escala de Autoeficácia Geral e Percebida; autoestima, mensurada pela Escala de Autoestima de Rosenberg; sintomas ansiosos e depressivos, avaliados pela Escala Hospitalar de Ansiedade e Depressão. **Resultados:** a intervenção psicoeducacional teve efeito positivo na percepção de autoeficácia geral dos estudantes. A autoestima e os sintomas ansiosos e depressivos não foram influenciados. **Conclusão**: os níveis de autoeficácia foram positivamente impactados pelo programa implementado.
Descritores: Promoção da Saúde; Saúde Mental; Autoeficácia; Estudantes de Enfermagem.

RESUMEN
Objetivo: evaluar el impacto de un programa psicoeducativo en los niveles de autoeficacia, autoestima y síntomas ansiosos y depresivos en estudiantes al inicio de sus estudios universitarios en enfermería. **Método:** investigación multicéntrica, cuasi-experimental, tipo serie temporal, desarrollada en dos instituciones públicas de educación superior, con 82 estudiantes, de septiembre de 2018 a mayo de 2019. El programa psicoeducativo se desarrolló con base en el constructo de autoeficacia y las actividades de enfermería de la intervención "Fortalecimiento de la autoestima", propuesta por la *Nursing Interventions Classification*. Los resultados evaluados fueron: autoeficacia, medida por la Escala de Autoeficacia General y Percibida; autoestima, medida por la Escala de Autoestima de Rosenberg; síntomas de ansiedad y depresión, evaluados por la Escala Hospitalaria de Ansiedad y Depresión. **Resultados:** la intervención psicoeducativa tuvo un efecto positivo sobre la percepción de autoeficacia general de los estudiantes. La autoestima y los síntomas de ansiedad y depresión no se vieron afectados. **Conclusión:** los niveles de autoeficacia fueron impactados positivamente por el programa implementado.
Descriptores: Promoción de la salud; Salud mental; Autoeficacia; Estudiantes de enfermería.

INTRODUCTION

For students, entering university represents something exciting, stimulating, challenging and the fulfillment of a dream. Despite this, the university population has been a constant concern for the academic and scientific communities worldwide[1,2].

The transition from high school to higher education coincides with a critical period of accelerated biological, psychological and social development. This transition takes place at a sensitive moment in the life cycle, commonly marked by separation from the family, development of new social connections, autonomy, responsibility and emotional changes, becoming a period of maximum risk for the onset of serious and persistent mental ailments[1].

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Within this context, the need for effective, appealing and accessible mental health care in the academic field, which seeks to optimize the construction of positive mental resources, is fundamental and urgent. Mental distress in this phase can impair the students' well-being and academic success, in addition to the possibility of irreversible consequences for the their lives and the university environment, as evidenced by the recent tragedies announced in different educational institutions in Brazil and worldwide[2].

Therefore, strengthening the pillars of mental health, with a focus on health promotion, is the key to implementing actions based on the primary prevention of mental disorders, since it enhances the necessary mental support for assertive coping in stressful situations.

In this scenario, growing evidence has shown self-efficacy as one of the main pillars of mental health support in university students, positively associated with learning levels, development of responsibility and independence, feeling of confidence, meeting the patient's need and ethical attitudes[3], in addition to being directly related to self-esteem and to the mitigation of harmful effects arising from stress[4,5] and from depressive and anxious symptoms[4,6].

In a broad search in the literature, lack of robust scientific evidence on interventions to promote mental health in university students is observed, especially with a focus on strengthening skills, and not on the improvement of diseases or distress conditions already installed. In this sense, a recent meta-analysis showed that interventions focused on promoting mental health exerted a positive effect on students' mental well-being[7]. However, the conclusion was limited due to the reduced number of studies found.

In view of this, a fundamental obstacle to implementing evidence-based strategies has been the relative lack of systematically collected data to assist the universities in developing a coordinated and comprehensive care system for the students' mental health care[2]. Thus, the need becomes evident to expand the number of research studies on these interventions that promote and strengthen the skills necessary to support the adversities of personal and academic life and, in this way, to avoid or minimize illness.

Based on these gaps, the objective of this research was to assess the impact of a psychoeducational program on the perception levels of self-efficacy, self-esteem and anxiety and depression symptoms in students at the beginning of their undergraduate Nursing training.

METHOD

A multicentric and quasi-experimental research study of the time series type, developed with undergraduate Nursing students from two Higher Education Institutions (HEIs), one in the state of São Paulo and the other in Goiás. The choice of these HEIs was due to their divergent geographic locations, ease of data collection, and mental vulnerability identified daily in these students, revealed by the significant search for psychological support services offered by the aforementioned HEIs, for reasons that mainly include stress, low tolerance to frustrations, anxiety, depression, low academic performance, suicidal ideation and attempted suicide.

The population consisted of all the students enrolled in 1st year of the undergraduate Nursing course at HEI 1 (n=60) and HEI 2 (n=30). The preference for freshmen was justified for this being a period of cycle transition, characterized by changes in the environment, friends, routines and increased responsibilities and autonomy.

The inclusion criteria established were as follows: being enrolled in 1st year of the undergraduate Nursing course at HEI 1 or HEI 2, being 18 years old or more, and being present at the intervention and data collection dates. Students who had not entered the current year were excluded (failing or returning after the enrollment period was closed). Figure 1 shows the selection and sampling process for the participants.

To verify the participants' profile, a Sociodemographic Characterization Questionnaire[8] was applied, with variables related to family relationship, socioeconomic status, satisfaction with the course, profession and overload of academic activities, in addition to age, gender and marital status.

The outcomes were assessed before and after the psychoeducational program: I) perception of self-efficacy, assessed by means of the General Perceived Self-Efficacy Scale (GPSES); II) self-esteem, assessed with the Rosenberg Self-Esteem Scale (RSES), and III) anxiety and depression symptoms, determined by means of the Hospital Anxiety and Depression Scale (HAD-S).

The GPSES consists of 10 items, with Likert-type answers ranging from one to five. These items portray the achievement of goals and the individual's perception of success in a given situation. The value of the scale varies from 10 to 50. Higher scores indicate better perception of self-efficacy. The psychometric properties of the General Perceived Self-Efficacy Scale are satisfactory in its original version (Cronbach's alpha of 0.84) and in the validated version for Brazil (Cronbach's alpha of 0.81), conducted among university students[9].
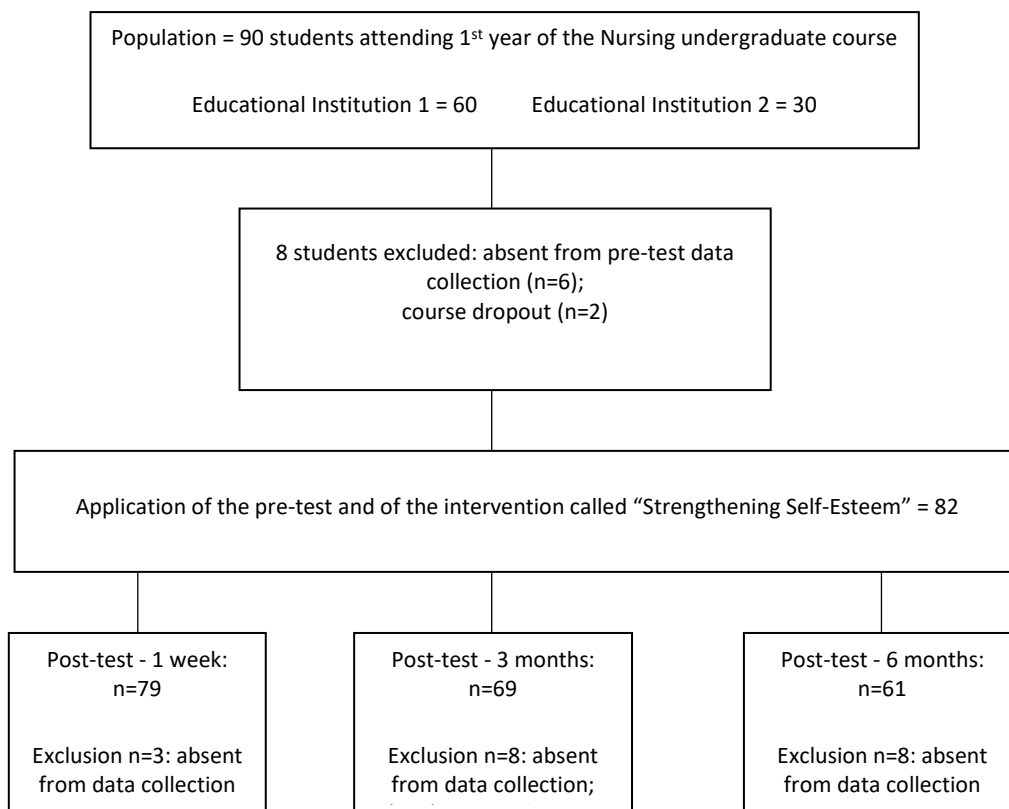
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FIGURE 1: Selection and sampling process for the participants. São José do Rio Preto, SP, Jataí, GO, Brazil, 2019.

RSES, validated for Brazil, has 10 items with 4-point Likert answers. The self-esteem measure is obtained by the sum of the values of the answers to the items and can vary from 10 to 40. Self-esteem is classified as high or satisfactory (more than 30 points), medium (from 20 to 30 points) and low or unsatisfactory (less than 20 points). It presents high internal consistency values (Cronbach's alpha: 0.90)[10] and has been one of the most employed instruments in the national and international literature to assess self-esteem.

HADS was designed to assess anxious and depressive symptoms in a clinical hospital but it later began to be used in other out-of-hospital settings, including healthy people and higher education students[11,12]. This scale has 14 questions interspersed with anxious and depressive symptoms and presents good sensitivity (70.8% to 80.6%) and specificity (69.6% to 90.9%) when compared to the Beck Anxiety Scale and the Beck Depression Scale, both considered to be the gold standard[13]. Each item on the scale includes four answers from 0 to 3, totaling a maximum score of 21 points for each subscale. Anxious and depressive symptoms were considered to be those whose scores varied from 0 to 8 points, in each subscale. The participants with scores ≥ 9 were classified as with anxiety and depression symptoms[13].

The psychoeducational program aimed at improving the perception of personal efficacy and self-esteem of undergraduate students. It was elaborated based on the self-efficacy construct, present in Bandura's Social Cognitive Theory[14]. This program was based on the Nursing activities of the intervention called "Strengthening self-esteem", proposed by the Nursing Interventions Classification (NIC). The NIC defines strengthening self-esteem as assisting the individual to enhance their personal judgment of their own value[15].

The program was structured in eight sessions, according to the objectives to be attained:

1. Self-knowledge and self-esteem: Encourage self-knowledge, the identification of strengths and weaknesses, the verbalization of positive statements about oneself, and the monitoring of self-negativity feelings.

2. Overcoming self-criticism, guilt and insecurity: Assist the student in attaining self-acceptance, avoid criticism and identify the impact of the group on their self-worth feelings; explore the reasons for self-criticism.

3. Self-confidence and self-esteem: Assist the student in determining their self-confidence; reinforce positive points and avoid criticism.

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4. You as the protagonist of your own life: Encourage greater responsibility for oneself; assist in assessing their own behavior, and monitoring the lack of follow-up in attaining goals; encourage the student to accept new challenges.

5. Planning of goals and of small challenges: Assist the student in establishing realistic goals; encouragement to assess their own behavior, accept new challenges and take greater responsibility for oneself and one's goals; recall successful experiences that enhance autonomy.

6. Creating a good view of oneself: Assist in reassessing negative self-perception and self-acceptance; teach the strategy of rewarding and praising progress towards the goals attained; encourage the identification of strengths and the locus of control.

7. Avoid comparisons: Assist in overcoming provocations and assessing their own behavior; convey confidence in the ability to deal with situations.

8. Positive and essential thinking: Assist in identifying positive responses from other people; explore achievements and convey confidence in the ability to deal with situations.

The program was carried out in person, in groups and through the education in health strategy. The activities were conducted in a classroom by the researchers themselves and lasted 40 minutes. The content was based on positive messages, reflective texts and life stories. The main strategy used was verbal persuasion, in which the participants were led, by means of suggestions, to believe that they are able to overcome their difficulties and modify their behavior. For this, the moderator used motivational words and phrases (examples: challenges, opportunities, facing, confidence and goals, among others). The word "you" was often used as a trigger to activate persuasion, as it puts the person at the heart of the situation.

Two reinforcements were offered (the first after the 4th session and the second after the 8th session), whose objectives were to clarify doubts, reinforce guidelines received in the interventions and motivate the students to carry out the activities proposed. In this stage, in addition to persuasion, direct experience of mastery (by recalling situations experienced at other moments and encouraging future experiences), vicarious experience (by listening to reports from other participants) and physiological feedback (by identifying stressful situations and helping to manage them) were used[14].

The interventions and reinforcements were conducted at one-week intervals between meetings, totaling 10 weeks. The number of sessions and periodicity were established from other studies that also tested interventions to improve mental health in Nursing students[4,16].

The data collection procedures and Nursing interventions were conducted by the researchers in their respective educational institutions, from September 2018 to May 2019. The content covered was constructed together and the researchers conducted theoretical and practical training to ensure uniformity in the execution of the activities to be developed.

The data were collected in the classroom and the participants answered the instruments in their portfolio, without the influence of the professors or researchers, and with an approximate length of 25 minutes. After filling out, the answered questionnaires were placed in a closed envelope. Post-test measurements were taken at two moments: one week and three months after the second reinforcement.

The data were processed and analyzed in the Minitab 17 program (Minitab Inc.). Descriptive analyses were performed for the sample characterization variables. To analyze the associations of self-esteem and anxious and depressive symptoms before and after the intervention, Fisher's Exact Test for two proportions was applied. The Kruskal-Wallis test with subsequent Dunn multiple comparison test was employed to verify the difference in self-efficacy in the periods before and after the psychoeducational program. The Anderson-Darling test was applied to assess data normality. The significance level applied for the tests was 0.05, or 5%.

The research protocol was approved by the Research Ethics Committees of the institutions involved, according to what is set forth in Resolution No. 466/2012.

RESULTS

A total of 82 students attending 1st year of the Nursing undergraduate course participated in this study. A significant percentage was female (71; 86.59%), had no partner (76; 92.68%) and belonged to HEI 1 (52; 63.41%). Most of the students reported living with their parents (39; 47.56%), having a harmonious family relationship (70; 85.37%) and having sufficient financial resources for their livelihood (50; 60.98%).

Most of the participants stated that the Nursing profession was not their first choice for college at the entrance exam (48; 59.26%); and, of these 48 students, 36 (73.47%) would have liked to have studied Medicine. The majority

states being satisfied with the profession (76; 92.68%) and with the course (76; 92.68%) and does not think about dropping out (49; 59.76%). Of the total of 82 students, the majority is overloaded with the undergraduate activities (70; 85.37%) and has no paid work (76; 92.68%).

The mean age of the 82 students assessed was 19.89 years old, with a standard deviation of 3.94 years old and a median of 19.00 years old. The minimum and maximum ages observed were 18.0 and 39.0 years old, respectively.

The intervention proposed exerted an impact on the self-efficacy scores up to three months after the intervention, as shown in Table 1.

TABLE 1: Descriptive statistics of self-efficacy according to the analysis periods (N=61). São José do Rio Preto-SP/Jataí-GO, Brazil, 2019.

Perceived self-efficacy	Mean±Standard Deviation	Median[2]	p-value[1]
Pre-intervention	31.75±7.54	32.00 [b]	
Post-intervention (1 week)	34.93±7.07	35.00 [ab]	0.021
Post-intervention (3 months)	36.08±6.47	36.00 [a]	

[1]p-value referring to the Kruskal-Wallis at $p<0.05$. [2]Different letters in the same column indicate significant differences by Dunn's multiple comparison test at $p<0.05$.

However, this effect was not verified in the students' self-esteem levels: comparison of the pre-test phase with the post-test after one week (p=1.000) and post-test after three months (p=1.000). It is noted that there was no statistically significant difference in the perception of self-efficacy scores between the participants from HEI 1 and HEI 2 (p=0.453).

Table 2 presents the scores of anxiety and depression symptoms comparing the periods assessed in the study.

TABLE 2: Percentages of the test of two proportions for the comparisons between the scores of the students' anxiety and depression symptoms, according to the pre- and post-intervention periods. São José do Rio Preto-SP/Jataí-GO, Brazil, 2019.

Periods assessed	Presence		Absence		p-value[1]
	N	%	N	%	
Anxiety Symptom (HADS-A)					
Pre-intervention	42	68.85	19	31.15	
Post-intervention (1 week)	33	54.10	28	45.90	0.136
Post-intervention (3 months)	33	54.10	28	45.90	0.136
Depression Symptom (HADS-D)					
Pre-intervention	18	29.51	43	70.49	
Post-intervention (1 week)	17	27.87	44	72.13	1.000
Post-intervention (3 months)	12	19.67	49	80.33	0.293

[1]p-value referring to Fisher's exact test for two proportions at $p<0.05$.

The results indicate a reduction in the anxiety and depression symptoms in the post-intervention periods, evidencing a clinical improvement in these symptoms. Despite this, comparative tests for two proportions showed that they were not impacted by the tested intervention (p>0.05).

DISCUSSION

The results of this study showed that the psychoeducational intervention had a positive effect on the perception of general self-efficacy of Nursing students, up to three months after its implementation. On the other hand, the anxiety and depression symptoms were not influenced by the intervention. The literature on programs or actions that promote, strengthen or improve self-esteem and self-efficacy is scarce, limiting comparisons.

This fact can be evidenced by the recent publication of a systematic review that showed the need for more studies that explore actions to manage the mental health of Nursing students. The researchers only identified 12 studies addressing this theme, which represent 651 participants. Most of the interventions are targeted at anxiety, depression and stress. The study also concluded that there no research studies were found that promoted self-efficacy in this population[17].

However, some clinical studies with positive results in relation to the self-efficacy levels of university students after interventions were identified. One of these studies verified the effects of a stress management program, based on

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the Cognitive Behavioral Therapy, in group and for 10 weeks. When compared to the controls, the Nursing students in the intervention group obtained higher self-efficacy and self-esteem scores after the program and in the assessment after one year[4].

A similar study, conducted with first-year medical students (n=42), tested an intervention for stress management, structured in the construction of relaxation, coping and nutrition skills, and lasting eight weeks. After the intervention, reduced anxiety levels and high personal efficacy were observed, when compared to the pre-test scores[16].

A group positive psychotherapy program, conducted to improve personal effectiveness and depression, lasting eight weeks, was tested on Nursing students with mild and moderate depression (n=76). The results revealed a relationship between the variables, suggesting that positive psychotherapy can optimize self-efficacy and, therefore, relieve the depressive symptoms, being recommended as a psychological support method[6].

Through a number of studies, it was verified that undergraduate students with stress could benefit from interventions to strengthen mental health[5] and that self-efficacy emerged as one of the most important predictors in the control and management of this problem[4,6,16].

This inverse relationship between stress and self-efficacy can also be evidenced in research studies in the professional and academic spheres. In this sense, a recent Italian study proved that positivity, school grades and citizenship behaviors were mediated by self-efficacy beliefs[18]. In addition to that, positive thoughts about the individual's confidence in their own ability contributed to maintaining optimum self-esteem levels, since individuals feel that they have greater capacity to cope with stressful situations, their approach in mental health programs being of utmost importance[19].

Self-efficacy is considered a personal construct, classified as a powerful antecedent for academic and work engagement and performance, as well as a buffer against Burnout[18]. These findings suggest that interventions focused on self-efficacy and other emotional skills, during undergraduation, can protect future nurses from physical and emotional exhaustion, in addition to providing greater safety and involvement at work.

Contrary to some previous studies, anxious[16,20] and depressive symptoms[6,20,21] were not impacted by the intervention conducted. However, they showed a reduction in both measures after the intervention. Although these fluctuations were not significant, they reflect a clinical improvement of these symptoms after the students' exposure to the program implemented: nine students who had previously been classified as with anxiety symptoms and six with depressive symptoms presented improvements. Likewise, the students in the sample showed predominantly moderate self-esteem, which did not change after the intervention conducted, diverging from some research studies found[4,8,22].

A factor that may have interfered with these results refers to the one-dimensional nature of the intervention implemented. Given the multiplicity of factors that influence an individual's mental structure, there is a need for more global programs, with different methodologies and with a greater chance of reaching several psychological aspects simultaneously[23]. Allied to this, it was possible to observe that the reduced number of individuals that made up the intervention groups, as well as the maintenance of exercises after the completion of the program by the other researchers, can partially explain the positive results in relation to the levels of self-esteem[4], anxiety[16] and depression[6] of the university students.

A recent meta-analytic review gathered evidence that pointed to positive effects of the non-pharmacological approaches on depressive symptoms and depression in Nursing students, suggesting that these interventions can serve as complementary and promising alternatives in the reduction of these clinical conditions. The analyses pointed out short-term interventions (one to eight weeks), mindfulness and stress control programs as common and effective strategies to improve these conditions[21]. Therefore, the inclusion of stress, anxiety and depression management interventions is indispensable for the positive achievement of these conditions, which, if adopted in this study, could have generated more satisfactory results in HADS.

It is also noted that, although there is a limited number of studies, self-efficacy was improved in this and in other programs aimed at promoting mental health, suggesting that this emotional resource is more vulnerable to brief interventions than other constructs, such as self-esteem, and clinical symptoms, such as anxiety and depression, which can be more rooted, suffering influences from elements that are outside the academic scope, such as traumas experienced since intrauterine life, and from precarious social and family conditions to occasional stressful and very harmful situations, such as major losses.

Although with limitations, the results of this research add scientific data to the repertoire of possible interventions that can be implemented by the academic community, being of an unprecedented nature at the national level. It suggests a psychoeducational program, based on a NIC intervention, which has shown validity in strengthening the perception of self-efficacy, an essential construct in the construction of psychological resources, since it prepares the young person to assertively cope with personal and academic stress, in addition to buffering the negative effects of depression and anxiety.

The implications of this study also include an advance in the context of primary prevention, since it encompasses positive emotional resources, especially self-efficacy, that are essential to prevent the installation of negative mental clinical conditions, to the detriment of the predominance of studies aimed at students with depression and anxiety already installed.

Finally, the tested psychoeducational program can support the planning of preventive strategies adopted by the Universities, and can be implemented every semester, not occasionally, but in a constant manner throughout the entire undergraduate course.

Study limitations

Some limitations must be considered. Although recruited from two centers, the sample was restricted and, therefore, the results cannot be generalized. The variables related to mental health were collected using a self-report instrument, which can cause untrue answers by the participants. Another significant point was the non-use of a motivational interview or scale that would assess readiness for change in the researched sample. Such measures could have guided the researchers in choosing different strategies to be employed.

Thus, it is recommended that future research studies include training of other skills, such as stress, anxiety and depression management, interpersonal relationships and coping, as well as other more objective parameters to assess mental health.

CONCLUSION

This study showed the positive impact of a psychoeducational program on the perception levels of self-efficacy in students at the beginning of their undergraduate Nursing training. The self-esteem levels, as well as the anxiety and depression symptoms, did not present significant changes after the intervention tested.

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