

Research Paper

Effect of Echium Amoenum on the Anxiety of College Students



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ABSTRACT

Objective Humans always have faced with the phenomenon of anxiety and have tried to find solutions to overcome this problem by various methods. The aim of this study was to determine the effect of echium amoenum on the anxiety of college students.

Methods This is a clinical trial study. Participants were 40 nursing students in Kerman, Iran who were randomly assigned into two groups of intervention (n=20) and control (n=20). The data collection tools were a demographic form and Cattle's anxiety questionnaire. First, the baseline assessment was conducted in both groups. Then, the intervention group received 1 g echium amoenum powder in 250cc boiling water daily. After a month, both groups were assessed again. Data analysis was performed in SPSS V. 20 software using descriptive and inferential statistics (mean, standard deviation, chi-square test, paired t-test, independent t-test, Mann-Witney U test).

Results At baseline, there was no significant difference between the two groups. After consumption of echium amoenum, the overall anxiety score decreased from 40.4±6.31 to 38.65±3.39 in the intervention group and increased from 39.7±9.29 to 41.75±9.91 in the control group; however, these differences were not statistically significant.

Conclusion Echium amoenum could reduce anxiety in the students, but its effect was not significant maybe due to the short duration of its use or small sample size. Hence, further studies with a larger sample size are recommended.

Extended Abstract

1. Introduction

Humans always have faced with the phenomenon of anxiety and have tried to find solutions to overcome this problem [1]. In one study, anxiety disorders were estimated to be 20-70%; social anxiety disorder, 50%; fear disorder, 48%; and post-traumatic stress disorder, 43% [3]. Low anxiety is necessary for everyday life; increased

anxiety can cause negative effects on the physical/mental conditions, social relationships, job and education [1]. Numerous interventions have been proposed to control anxiety, including the use of herbs [7]. Echium amoenum is used as a medicinal plant with different effects, especially to reduce anxiety and nervous system problems [8]. This plant is rich in compounds such as flavonoids, which have moderate sedative and anti-anxiety effects [10]. The flowers of this plant among the Iranian people are considered as a treatment for anxiety, depression, cough, pneumonia [12]. According to the evidence in the traditional books regarding the anti-anxi-

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ety effects of echium amoenum, this study was conducted to determine its effect on treating the anxiety of students.

2. Materials and Methods

This is a clinical trial study. 40 students were randomly selected based on inclusion criteria and were divided into two groups of 20 people (control and intervention) by drawing. Inclusion criteria were: willingness to participate in the study, age >19 years, no history of specific physical illness and mental health problems (acute or chronic), no use of supplements, no pregnancy, indigenously, no history of smoking or substance abuse, non-use of any drug within two weeks before the start of research, no any medication within two weeks before the start of the study, no history of divorce or death of family members and a stressful event, and having a high score on anxiety in the Cattle's anxiety questionnaire. On the other hand, the exclusion criteria were: unwillingness to continue participation, risk of physical and psychological problems during the study, and planning to become pregnant. For collecting data, a demographic form and Cattle's anxiety questionnaire were used.

By observing all the ethical principles and obtaining informed consent from participants in both groups, the level of baseline anxiety was first measured. For intervention, 1 g echium amoenum powder was poured into 250 cc boiling water and after 10 minutes, the solution was taken orally daily for one month. None of the students had a specific dietary regime, and a SMS was sent for samples each day to remind them to drink the solution. At the end of the first, second and third weeks, the samples were evaluated and at the end of the fourth week, the second measurement phase was performed.

3. Results

There was no significant difference between the two groups of intervention and control in terms of age, gender, marital status, housing status and number of family members; hence, the two groups were homogeneous. The mean overall anxiety score before treatment in intervention and control groups was 40.4 ± 6.31 and 39.7 ± 9.02 , respectively. After treatment, the score in the intervention group decreased, but it was increased in the control group. Regarding the dimensions of anxiety, the mean pretest hidden anxiety scores of students in intervention and control groups were 20.45 ± 4.78 and 21.05 ± 4.48 , respectively which changed to 20.64 ± 3.82 and 21.2 ± 3.72 after intervention. Moreover, the mean pretest manifest anxiety scores of students in intervention and control groups were 20.45 ± 4.78 and 21.05 ± 4.48 , respectively which changed to 20.64 ± 3.82 and 21.2 ± 3.72 after intervention (Table 1).

4. Discussion

The study found that students' anxiety in both groups was almost the same at baseline and there was no significant difference. However, after intervention, only the mean of manifest anxiety in the intervention group was significantly reduced. This indicates positive effect of echium amoenum on reducing manifest anxiety. In this regard, some studies have shown that echium amoenum extract in rats reduces their anxiety-like behaviors [6, 12, 15]. In the study by Sai-iah et al., the symptoms of anxiety in rats also decreased after using echium amoenum [6]. Another studies found that aqueous extract of echium amoenum reduced blood pressure, heart rate [16] and obsessive-compulsive disorder.

Table 1. Comparing the mean scores of anxiety in students before and after intervention

Anxiety Dimensions		Test	Mean±SD	Mean Difference	P
Manifest anxiety	Intervention group	Pre-test	19.95±3.72	-1.95±3.68	0.12
		Post-test	18.0±2.71		
	Control group	Pre-test	19.63±4.7	1.16±9.12	
		Post-test	20.55±8.13		
Hidden anxiety	Intervention group	Pre-test	20.45±4.78	0.2±3.92	0.60
		Post-test	20.65±3.82		
	Control group	Pre-test	21.5±4.48	0.15±5.82	
		Post-test	21.2±3.72		
Total	Intervention group	Pre-test	40.4±6.31	-1.75±5.38	0.1
		Post-test	38.65±5.39		
	Control group	Pre-test	39.7±9.02	2.05±12.71	
		Post-test	41.75±9.91		

der [8], and improved Kidney function in people with functional disorders [17]. Hosseini et al. showed that echium amoenum methanolic extract had an effect on rat seizures and stated that it has anticonvulsant properties [18]. Findings from other studies have also shown the effectiveness of other herbs in reducing anxiety. For example, Erfani et al. showed the effect of hypiran on reducing anxiety among students [19]. Rezaei et al. reported the sedative and anxiolytic effects of the hypericum perforatum [20]. Stanley et al. showed the effects of lavender aromatherapy on preoperative anxiety in cataract surgery patients [21]. Kuchta et al. showed the efficacy of an ethanolic kava extract for the treatment of anxiety in elderly patients [22].

Regarding the hidden anxiety, there was no significant difference between the two groups after the intervention and echium amoenum had no effect on changing the state and trait of students. Hidden anxiety is a chronic and persistent response and a kind of personality trait and requires behavioral therapy [23]. In overall, there was no significant difference in overall anxiety between the two groups, meaning that echium amoenum did not reduce overall anxiety.

5. Conclusion

Consumption of echium amoenum can reduce anxiety, but its reduction is not significant. There was a low number of studies conducted on echium amoenum to be used to analyze and compare their results with our findings. It is suggested that more studies with larger sample sizes be performed in different groups in order to further determine the effects of this plant.

Ethical Considerations

Compliance with ethical guidelines

This study obtained its ethical approval from the Research Ethics Committee of Kerman University of Medical Sciences (Code: IR.KMU.REC.1397.499) and is a clinical trial registered by Iranian Registry of Clinical Trials (Code: IRCT20130615013677N3).

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Authors' contributions

All authors contributed equally in preparing this paper.

Conflicts of interest

The authors declare no conflict of interest.