

Outdoor education program reduces anxiety levels in Indonesian sports college students Un programa de educación al aire libre reduce los niveles de ansiedad en estudiantes universitarios de deportes de Indonesia

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Abstract. This study aims to evaluate the impact of the Outdoor Education Program on the anxiety levels of sports students in Indonesia. Using a quantitative approach with an experimental pretest-posttest design, the research included 120 participants, both male and female, aged 18 to 20 years, from sports faculties at the State University of Surabaya, the State University of Yogyakarta, and the Indonesian University of Education. Data collection to assess anxiety levels was conducted through a questionnaire. Validity testing showed all statements were valid, with Pearson Correlation values greater than 0.05, and reliability testing indicated that all items were reliable, with Cronbach's Alpha values exceeding 0.6. Questionnaires were administered via Google Forms before and after the outdoor education program. Data analysis was carried out using SPSS 25. The Wilcoxon test results showed a Sig value greater than 0.05, and the mean posttest score (34.58) was lower than the pretest score (55.66). The study concluded that the Outdoor Education Program significantly reduces anxiety levels in sports students in Indonesia. Further research is recommended to explore the program's effects on students' self-confidence, motivation, responsibility, and discipline.

Keywords: Anxiety, Outdoor Education Program, Sports College Students, Indonesia

Resumen. Este estudio tiene como objetivo evaluar el impacto del Programa de Educación al Aire Libre en los niveles de ansiedad de los estudiantes de deportes en Indonesia. Utilizando un enfoque cuantitativo con un diseño experimental pretest-postest, la investigación incluyó a 120 participantes, tanto hombres como mujeres, de 18 a 20 años, de las facultades de deportes de la Universidad Estatal de Surabaya, la Universidad Estatal de Yogyakarta y la Universidad de Educación de Indonesia. La recopilación de datos para evaluar los niveles de ansiedad se realizó a través de un cuestionario. Las pruebas de validez mostraron que todas las afirmaciones eran válidas, con valores de correlación de Pearson superiores a 0,05, y las pruebas de fiabilidad indicaron que todos los elementos eran fiables, con valores de alfa de Cronbach superiores a 0,6. Los cuestionarios se administraron a través de Google Forms antes y después del programa de educación al aire libre. El análisis de datos se llevó a cabo utilizando SPSS 25. Los resultados de la prueba de Wilcoxon mostraron un valor Sig superior a 0,05, y la puntuación media de la prueba posterior (34,58) fue inferior a la puntuación de la prueba previa (55,66). El estudio concluyó que el Programa de Educación al Aire Libre reduce significativamente los niveles de ansiedad en los estudiantes de deportes en Indonesia. Se recomienda realizar más investigaciones para explorar los efectos del programa en la confianza en sí mismos, la motivación, la responsabilidad y la disciplina de los estudiantes.

Palabras clave: Ansiedad, Programa de educación al aire libre, Estudiantes universitarios de deportes, Indonesia

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Introduction

Many college students experience anxiety, which has emerged as the most common and significant problem among this demographic (Gao, Ping, & Liu, 2020). Anxiety disorders impact over 200 million people, representing 3.6% of the global population. Additionally, 4.4% of the world's population, or 322 million people, experience depression, with approximately half of these individuals residing in Southeast Asia and the Western Pacific (Anggiani, Pebriyani, Ladyani, & Lestari, 2023). Anxiety can have serious psychological impacts (Sari, Nugroho, & Iskandar, 2021) and studying it presents a complex challenge due to its multifaceted nature (Pihkala, 2020). Given the importance of addressing student anxiety, it is crucial to discuss this issue.

Students frequently encounter various demands in their daily lives (Romero-Naranjo, Sayago-Martínez, Baldomero Jiménez-Molina, & Arnau-Mollá, 2023). These demands are evaluated subjectively; some perceive them as challenges, while others see them as threats that could result in

conflict (Kurnia, Winarni, Sujarwo, & Friskawati, 2024). Changes in a person's circumstances can trigger feelings of anxiety, fear, worry, and unease due to perceived threats from both internal and external sources (Sugiharno, Ari Susanto, & Wospakrik, 2022). Anxiety is characterized by neurotic helplessness, insecurity, fear, immaturity, and an inability to handle the demands of reality and the pressures of everyday life (Ardan, Rahman, & Geroda, 2020). It is marked by feelings of tension and agitation and can cause physiological changes (Tafari, Martinez-Roig, Susanto, Setyawan, & Latino, 2024) such as elevated blood pressure, sweating, trembling, dizziness, or palpitations (Devi, Purborini, & Chang, 2021). Anxiety is one of the negative emotions, alongside worry and fear (Soleh & Hakim, 2019), and is linked to significant variations in brain structure and function (Knowles & Olatunji, 2020). College students' anxiety can be caused by intrinsic and extrinsic factors, with internal factors originating within the individual and external factors influenced by the environment (Wakhyudin, Dwi, & Putri, 2020). Existing literature identifies several sources of anxiety, stress, and depression commonly seen among

college students, which can be categorized into four major aspects: personality, lifestyle, family background, and academic performance (Khoshaim et al., 2020; Saniah et al., 2024). First, students' personalities significantly influence their attitudes towards difficulties and their willingness to express negative feelings. Extroverts are more likely to be optimistic and confident in their abilities, whereas students with introverted personalities appear to be at a higher risk of physical and psychological health problems. Second, college students' lifestyles play a vital role in their emotional well-being, affecting their susceptibility to anxiety and stress (Gao, Ping, & Liu, 2019). Therefore, the right strategies must be implemented to overcome anxiety levels.

One effective strategy for reducing student anxiety is participation in the Outdoor Education Program (Taisy De Araujo Vasconcelos et al., 2024). Participation in outdoor education is increasing in the United States (Bolliger, McCoy, Kilty, & Shepherd, 2021). Outdoor Education is an essential activity in the implementation of education (W.-T. Fang, Hassan, & LePage, 2023). Outdoor learning in natural environments is an emerging approach within the educational sector (Mann et al., 2021). It broadly refers to structured learning experiences conducted in outdoor settings (Asfeldt, Purc-Stephenson, Rawleigh, & Thackeray, 2021). Recent data shows that outdoor education programs in several universities have become an integral part of the curriculum with an increasing number of participants (Barroso, Melero, Montilla, & Román, 2024).

Many studies explore the outcomes and advantages of outdoor education, which include lifelong learning, environmental literacy, outdoor skills development, personal and social skills development, building a sense of community, holistic integrated learning, and improved relationships with nature (Samsudin, Kamalden, Aziz, Ismail, & Ujang, 2019); (Remmen & Iversen, 2023a). Assessing the efficacy of outdoor education programs in attaining specified learning objectives, such as interpersonal skills and student independence, is important (Fang et al., 2021). Students enrolled in these programs report significant improvements in collaboration skills, conflict resolution, and creativity (Yıldırım & Akamca, 2017). They also exhibit higher levels of academic engagement, better attendance, and higher success rates in task completion (Wistoft, 2013). Outdoor education programs can develop leadership skills, improve decision-making abilities, team management, and initiative (Nariya, Sangtani, Shah, & Patel, 2019). Previous research has shown that students participating in these programs tend to develop leadership, teamwork, and resilience (Cortinez-O'Ryan, Albagli, Sadarangani, & Aguilar-Farias, 2017). However, outdoor education programs are not easily accessible to all students, particularly those with physical or economic limitations (Barbosa et al., 2020). Some research also suggests that these programs do not always significantly impact academic achievement (Kljajević et al., 2022). However, other studies associate outdoor education participation with improved psychological well-being, including decreased stress levels and increased happiness

(Zhou & Lau, 2022). While outdoor education programs have been implemented for several weeks in various studies (Avci & Gümüş, 2020, Görkem AVCI, 2020). The specific impact on anxiety levels after participation is not yet fully understood.

This research aims to address this gap by examining the anxiety levels of sports students in Indonesia after participating in an outdoor education program. Given the importance of addressing anxiety among final semester students in Indonesia, this study seeks to explore outdoor education as a potential solution. Therefore, the research aims to determine the effect of outdoor education programs on the anxiety levels of sports students in Indonesia.

Method

Participants

This research uses a quantitative approach with the type of experimental research pretest-posttest design (Purwoto et al., 2024). The population in this research was the Outdoor Education Program participants totaling 120 college students. The sampling technique in this study used total sampling so that the entire population was sampled (Syahza, 2021). The sample size for this study was 120 participants, consisting of male and female respondents aged 18 to 20 years. These participants were enrolled in outdoor education courses from various sports faculties across Indonesia, including the State University of Surabaya, the State University of Yogyakarta, and the Indonesian University of Education. Specifically, 32 participants (26.70%) were from the Indonesian University of Education, 51 participants (42.50%) were from the State University of Surabaya, and 37 participants (30.80%) were from the State University of Yogyakarta. The sample included 38 students (31.70%) from Sports Education, 42 students (35%) from Coaching Education, and 40 students (33.30%) from Sports Science. Of the 120 participants, 92 were male (76.70%) and 28 were female (23.30%). Age distribution was as follows: 20 students (16.70%) were 18 years old, 88 students (73.30%) were 19 years old, and 12 students (10%) were 20 years old. Regarding academic standing, 20 students (16.70%) were in their 5th semester, 88 students (73.30%) were in their 7th semester, and 12 students (10%) were in their 9th semester.

Research Instruments and Procedures

In this study, participants underwent an outdoor education program. To evaluate students' anxiety levels, researchers developed a questionnaire that required validation and reliability testing before use. The questionnaire featured four response options: never (1), sometimes (2), often (3), and always (4), and included 18 statements (Table 1). Validity testing showed that all statements were valid, with Pearson Correlation values greater than 0.05 (Table 2). Reliability testing indicated that all items were reliable, with Cronbach's Alpha values exceeding 0.6 (Table 2). The questionnaires were administered before and after the

outdoor education program using Google Forms. The week-long program included various traditional sports, recreational activities such as rafting, tourism studies, and coaching systems within the Recreational Sports Study Program. Participants completed a pre-test questionnaire before starting the program and a post-test questionnaire after its completion to assess the outcomes of the treatment.

Table 1. Questionnaire

No	Statement	Never (1)	Sometimes (2)	Often (3)	Always (4)
1	I feel more nervous and anxious than usual				
2	I felt scared without explanation				
3	I get angry or panic easily				
4	I felt like I was falling apart				
5	I felt that everything was fine and nothing bad would happen				
6	My arms and legs were shaking				
7	I am bothered by pain in the head, neck and back				
8	I feel weak and get tired easily				
9	I felt my heart beating fast				
10	I felt disturbed because I had a headache				
11	I lost consciousness and felt like fainting				
12	I felt tingling and numbness in my fingers and toes				
13	I had stomach ache and indigestion				
14	I urinate frequently				
15	My hands usually feel dry and warm				
16	My face felt hot and red				
17	I fall asleep easily and rest well at night				
18	I had a bad dream				

Table 2. Validity & Reliability

Items	Validity		Reliability	
	Pearson Correlation	Description	Cronbach's Alpha if Item Deleted	Description
P1	0,84	Valid	0,973	Reliable
P2	0,77	Valid	0,973	Reliable
P3	0,65	Valid	0,974	Reliable
P4	0,82	Valid	0,974	Reliable
P5	0,76	Valid	0,975	Reliable
P6	0,66	Valid	0,973	Reliable
P7	0,71	Valid	0,975	Reliable
P8	0,88	Valid	0,973	Reliable
P9	0,68	Valid	0,976	Reliable
P10	0,81	Valid	0,973	Reliable
P11	0,77	Valid	0,973	Reliable
P12	0,81	Valid	0,974	Reliable
P13	0,74	Valid	0,974	Reliable
P14	0,77	Valid	0,973	Reliable
P15	0,69	Valid	0,975	Reliable
P16	0,67	Valid	0,973	Reliable
P17	0,66	Valid	0,973	Reliable
P18	0,72	Valid	0,976	Reliable

According to the table above, the questionnaire used as an instrument is both valid and reliable, making it suitable for research. The results of the validity and reliability test indicate that all 18 statements are both valid and reliable.

Statistic analysis

This study utilizes SPSS 20 to perform data analysis (Jatmiko, Kusnanik, Nurhasan, Muhammad, & Purwoto, 2024), encompassing descriptive statistics, normality tests, and hypothesis tests (Purwoto et al., 2024). Descriptive statistics determine the mean, median, standard deviation, and frequency distribution for anxiety levels measured before and after the intervention. The normality test, conducted using the Kolmogorov-Smirnov method, verifies the normal distribution of the data. For hypothesis testing, the Wilcoxon Signed Ranks Test is employed to compare anxiety scores from the pre-test and post-test.

Result

Based on the results of the data analysis carried out below, the results of the descriptive data, the Wilcoxon test and the difference between the mean pre-test and post-test will be displayed.

Table 3. Descriptive Statistics

	Descriptive Statistics				
	N	Mean	Std. Deviation	Minimum	Maximum
Pre Test Anxiety	120	55,66	2,324	54	69
Post Test Anxiety	120	34,58	1,633	30	37

The descriptive test results showed that the pre-test mean was higher than the post-test, the pre-test standard deviation was higher than the post-test, the minimum pre-test score was higher than the post-test, and the maximum pre-test score was higher than the post-test.

Table 4. Kolmogorov-Smirnov

Variable	Statistic	Df	Sig
Pretest Anxiety	0,278	120	0,000
Post test Anxiety	0,478	120	0,000

The normality test results indicate a significance value of 0.000, which is less than 0.05, suggesting that the data does not follow a normal distribution. Consequently, the analysis will proceed with the non-parametric Wilcoxon Signed Ranks Test.

Table 5. Wilcoxon Signed Ranks Test

Variable	N	Sig
Pre Test Anxiety – Post test Anxiety	120	0,000

To determine the difference in results between the pre-test and post-test, this study used the Wilcoxon test because the data distribution was not normal. So the results of the Wilcoxon test show that the Sig value is > 0.05 , indicating that there is a significant difference.

Based on the diagram above, the post test score is lower than the post test. This shows that there has been a decrease in the anxiety level of sports students. The diagram's results indicate that the average anxiety level before receiving outdoor education was 55.56, which dropped to 34.58 afterward. This demonstrates a significant reduction of 20.98 in

anxiety levels, highlighting that outdoor education was effective in reducing college students' anxiety.



Figure 1. Anxiety Outcome Chart

Discussion

The research results show that the Outdoor Education Program can reduce anxiety levels. Research results indicate that participation in outdoor education programs has favorable effects on the psycho-physical well-being, connection to nature, and pro-social behavior of students in the intervention group when compared to those in the control group (Pirchio, Passiatore, Panno, Cipparone, & Carrus, 2021). Previous research also found that Outdoor Education activities have enhanced students' personal and social responsibility as well as their physical fitness (Rimasa, Nugraha, & Nasution, 2023). Previous research has shown that the Outdoor Education Program can influence student's physical fitness motivation (Murdiono, 2022). Outdoor education is not a specific method or approach but, rather, includes a variety of pedagogical approaches and practices, depending on the purpose and philosophies of learning outside the classroom (Remmen & Iversen, 2023b). One of the causes of anxiety experienced by students is psychosocial stressors. Psychosocial stressors cause the student concerned to be forced to adapt or overcome the stressors that arise. Psychosocial stress factors include work or academic pressure; financial problems; interpersonal conflict; significant life changes; health issues; lack of social support; poor work environment; uncertainty about the future; excessive responsibility; feelings of helplessness or lack of control; work-life balance issues; social stigma; economic and political uncertainty; and trauma and violence (Kurniawan, Nopembri, & Purnomo, 2023; Lauria, Lobo, Melo, Pereira, & Bicalho, 2023). Changes in the learning environment are also a factor that triggers anxiety in students. Anxiety can affect student learning outcomes, because anxiety tends to produce confusion and distortion of perception. These distortions can interfere with learning by reducing the ability to focus attention, decreasing memory power, interfering with the ability to connect one thing with another (Sari et al., 2021).

The level of anxiety decreased possibly due to the sense possessed by the Outdoor Education Program. Outdoor education is a learning process based on experiences that

engage multiple senses (six senses). It encompasses cognitive, affective, and dynamic areas and involves interactions between nature and humans, humans and society, and interpersonal relationships. It can be categorized into two main areas: environmental education and adventure education (Avci & Gümüş, 2020). Apart from that, outdoor education is considered beneficial for children's physical and mental health. Primarily, resilience to stress has been linked to nature experiences (Samsudin et al., 2019); (Remmen & Iversen, 2023a). It is also possible that because of this, anxiety can decrease (Dettweiler, Gerchen, Mall, Simon, & Kirsch, 2023). However, the impact on students in each course is different (Gao et al., 2019; Mirza, Baig, Beyari, Halawani, & Mirza, 2021).

Outdoor education represents an innovative approach that is gaining increasing recognition in the educational field due to its numerous benefits (Mañanas-Iglesias, Galán-Arroyo, Rojo-Ramos, & Adsuar, 2023). Cases found by (Chow, Chang, & Fang, 2021) showed that these programs are not well integrated with academic curriculum. Therefore, implementing the Outdoor Education Program is very important, but in the future must pay attention to supporting aspects (Buldur, Bursal, Yalcin Erik, & Yucel, 2020).

Conclusion

The research concluded that the Outdoor Education Program significantly reduces anxiety levels in sports college students in Indonesia. However, the study's limitation lies in its focus on sports students from only four universities in Indonesia. These outdoor education programs, which lasted for one week, included a variety of traditional sports, recreational activities like white water rafting, tourism studies, and coaching systems within the Recreational Sports Study Program.

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