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Improving Mental Health in Adolescents in Special Child Care Institutions Through Recreational Sports Intervention

Dinda Khoerunnisa[1], Nia Sri Ramania[1], Esther Margaritha Livida Sinsuw[2], Ahdan Abdillah Ad-Dauli[1], Bagus Winata[1]

[1] *Magister Keolahragaan, Sekolah Farmasi, Institut Teknologi Bandung, Indonesia*
[2] *Perhimpunan Dokter Spesialis Kedokteran Jiwa Indonesia, RS Bhayangkata TK. I PUSDOKKES Polri*

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Abstract

This study examines the effectiveness of recreational sports interventions in addressing mental health issues among adolescents serving sentences in Juvenile Correctional Facilities (LPKA). Adolescents in prison tend to experience significant emotional stress, which can potentially worsen their mental health conditions. Sports are considered a practical and effective intervention method as they can trigger the release of serotonin and endorphins, hormones that play a role in improving mood. The research sample consisted of 20 male juvenile inmates at LPKA Bandung, aged 15-19 years, who participated in an eight-week recreational sports program. Measurements were conducted using the DASS-42 questionnaire to evaluate levels of anxiety, stress, and depression. The analysis results showed that the sports intervention significantly reduced anxiety (p-value = 0.000) but did not have a significant effect on stress and depression (p-value > 0.05). These findings suggest that recreational sports can be an effective intervention for reducing anxiety among adolescents in correctional settings; however, additional approaches are needed to address stress and depression. This study makes an important contribution to the development of sports-based rehabilitation programs in correctional facilities.

Keywords: *mental health, recreational sports, teenager.*

INTRODUCTION

The high prevalence of mental disorders and negative emotional conditions among incarcerated adolescents is an issue that is gaining increasing attention (Ismail et al., 2024). Adolescence is a critical phase in psychological development, marked by significant changes in physical, emotional, and social aspects (Jannah, 2016). However, when adolescents face incarceration in correctional institutions,

Correspondence author: Dinda Khoerunnisa, Institut Teknologi Bandung, Indonesia.
Email: dindakhoerunnisa2014@gmail.com

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the isolated, high-pressure, and often violent environment can exacerbate their psychological condition (K.R. Kusumastuti, 2020). Incarcerated adolescents are more likely to experience high levels of anxiety, depression, and aggression. Environmental stressors, coupled with the inability to freely interact with family and peers, worsen feelings of distress and hopelessness, which can lead to self-harming behaviors or even suicidal attempts (Syifa Nuraidah & Wahid, 2023).

Additionally, the social stigma associated with adolescent incarceration adds to their emotional burden and increases their vulnerability to various mental health disorders (Asrina et al., 2020). This underscores the urgent need for effective interventions that can be implemented within prison environments to enhance the mental well-being of these youths.

One approach that has started to gain attention is the use of physical exercise interventions to help improve the mental health of incarcerated adolescents. Exercise has a direct impact on the production of mood-regulating hormones such as serotonin and endorphins, which play crucial roles in emotional regulation and generating feelings of well-being (Haruyama Shigeo, 2015). Serotonin is a neurotransmitter involved in mood control, sleep, and appetite (Anggraini, 2023). Low serotonin levels are often associated with depression and anxiety, so increasing serotonin through physical activity may help alleviate these negative symptoms (Dendy Amandyka Mahmud, 2022). On the other hand, endorphins often referred to as "happiness hormones" are known to reduce pain and induce feelings of euphoria. Research by (Palifiana et al., 2023) shows that exercise can stimulate the release of endorphins in the body, providing a sense of relaxation and improved mood.

When adolescents engage in regular physical activity, their bodies produce these hormones, which can help them cope with anxiety, depression, and hopelessness, as well as improve their ability to manage stress. In a prison context, exercise represents a practical and efficient intervention since it is relatively easy to implement, does not require expensive equipment or facilities, and can be carried out individually or in groups. Activities such as jogging, walking, aerobics, or basic strength training can offer substantial mental health benefits (Wahyuningsih, 2015).

Beyond the physiological advantages of increased serotonin and endorphin

levels, physical activity also offers opportunities for developing social skills and building self-confidence (Fefrian Rosmi, 2016). When incarcerated adolescents participate in group physical activities, they learn to cooperate, follow rules, and communicate effectively with others. These experiences help reduce feelings of isolation and improve interpersonal relationships, which are essential for successful rehabilitation. Employing physical activity as an intervention within correctional systems offers hope that adolescents can develop better coping mechanisms, enabling them to reintegrate into society with healthier and more productive lives (Putri Anisa Yuliana, 2014).

The significance of this study lies in its potential to enhance understanding of the benefits of exercise on the mental health of adolescents in high-pressure environments such as prisons. (Rahmatika, 2023) confirmed that non-pharmacological methods like physical exercise can serve as effective, side-effect-free complementary approaches to other mental health interventions. Moreover, studies specifically linking physical exercise to the mental health of incarcerated adolescents particularly focusing on serotonin and endorphin responses to structured physical activity remain limited. Therefore, this research may contribute significantly to the development of more comprehensive and holistic rehabilitation programs within correctional facilities. It can also serve as a valuable reference for policymakers in designing effective rehabilitation initiatives that improve the quality of life and mental preparedness of adolescents who will eventually return to society.

METHOD

Sample

The sample consisted of 20 male children under the care of the Bandung LPKA (age: 15-19 years) who had served a minimum of three months in detention and had never been diagnosed with a mental disorder.

Procedure

The first procedure was to determine the research sample based on the accessible population and sample size. After the sample was selected, participants were given a questionnaire on depression, anxiety, and stress (DASS-42) to collect

pre-test data. Immediately after completing the pre-test questionnaire, the researcher proceeded with the intervention, which consisted of physical exercise conducted over a period of 8 weeks, with a frequency of three sessions per week.

Instrument

The mental health assessment tool used for juvenile inmates at LPKA Bandung was the DASS-42 (Depression Anxiety Stress Scale-42), which consists of 42 items divided into three main constructs: depression, anxiety, and stress. Each construct contains 14 items aimed at evaluating specific aspects of the symptoms experienced by individuals. Sample items include: *"I couldn't seem to experience any positive feeling at all," "I felt I was close to panic,"* and *"I found it hard to wind down."* The DASS-42 uses a 4-point Likert scale for each item, with response categories as follows: 0 = Did not apply to me at all, 1 = Applied to me to some degree, or some of the time, 2 = Applied to me to a considerable degree, or a good part of the time, 3 = Applied to me very much, or most of the time. The instrument has high reliability, with Cronbach's alpha values for each subscale as follows: Depression = 0.91, Anxiety = 0.84, and Stress = 0.90.

Data Analysis

Data analysis techniques using SPSS version 26 with a Paired Sample T-Test to compare pre-test and post-test results. Recreational sports interventions were conducted for 8 weeks (3 times a week).

RESULTS

The results of the study on the impact of recreational exercise interventions on anxiety, stress, and depression revealed interesting and valuable findings, particularly in relation to mental health. Based on the research conducted, exercise interventions were found to be effective in reducing anxiety, as indicated by a significance value of 0.000, demonstrating a significant difference between the pre-test and post-test scores. However, the intervention did not have a significant impact on reducing stress and depression, with significance values of 0.083 for depression and 0.157 for stress, indicating no statistically significant difference between pre-test and post-test scores. These findings can be further analyzed by considering physiological and psychological perspectives, as well as the relationship between

the type of exercise performed and the distinct characteristics of anxiety, stress, and depression as mental health conditions.

Table 1. Pre-Test and Post-Test Comparison Results

Test Statistics[a]			
	Depresi Post Test – Depresi Pre Test	Kecemasan Post Test – Kecemasan Pre Test	Stress Post Test – Stress Pre Test
Z	-1.732[b]	-3.905[b]	-1.414[b]
Asymp. Sig. (2-tailed)	.083	.000	.157
a. Wilcoxon Signed Ranks Test b. Based on positive ranks.			

DISCUSSION

The Effectiveness of Exercise in Reducing Anxiety

Exercise has been proven to reduce anxiety through complex physiological and psychological mechanisms, particularly by increasing the levels of hormones and neurotransmitters such as endorphins and serotonin (Rahayu et al., 2024). These substances play a crucial role in enhancing mood and providing a natural relaxation effect on the body, making individuals feel calmer and more at ease after engaging in physical activity. Endorphins are often referred to as "happiness hormones" due to their ability to induce feelings of euphoria and reduce both physical and mental pain. Meanwhile, serotonin functions as a neurotransmitter that regulates mood, sleep, and appetite, thereby enhancing emotional stability and decreasing anxious thoughts (Stuart & Nanette, 2007).

From a psychological perspective, exercise can improve self-confidence and reduce stress by enhancing physical fitness (Rustiana, 2011). When individuals feel healthy and physically fit, their anxiety levels tend to decrease, as they experience a greater sense of control over themselves. Social interactions that occur during group exercise also contribute to reducing social anxiety or feelings of isolation, which often exacerbate anxiety. In a community setting, the social support gained through shared physical activities can foster a sense of belonging, which plays a

vital role in counteracting negative thoughts and anxious feelings.

Various studies have shown that engaging in regular physical activity for at least 20–30 minutes per day can significantly reduce anxiety. The positive effects of exercise can last for an extended period, and with a consistent exercise routine, individuals can achieve a more stable mental state. This highlights that exercise is an effective, practical, and affordable intervention for reducing anxiety, both in personal and professional environments (Novita Deniati et al., 2021).

Why Exercise Is Not Significant in Reducing Stress

Although many studies have demonstrated the mental health benefits of exercise, there are several reasons why physical activity does not always have a significant impact on reducing stress levels in some individuals (Aqobah et al., 2023). One of the main factors is the variation in individual characteristics and preferences regarding the type and intensity of exercise. Not everyone finds exercise enjoyable, especially if the activity does not align with their interests. Some individuals may even experience increased stress when they feel forced or burdened by an exercise routine that they find difficult or exhausting (Tian & Shi, 2022). In such cases, rather than alleviating stress, exercise can become an additional source of it.

Moreover, engaging in high-intensity or prolonged exercise can trigger physiological responses that closely resemble stress (I Made Yoga Parwata, 2015). Strenuous physical activity may lead to increased levels of stress hormones such as cortisol, especially when performed without adequate recovery or when the body is already fatigued (E. E. Hill E. et al., 2008). Elevated cortisol levels not only reduce the effectiveness of exercise in relieving stress but can also worsen feelings of anxiety and fatigue, disrupt sleep quality, and negatively impact overall mental health (Lestari & Heryani, 2020). Therefore, choosing the right type and duration of exercise is crucial to ensure it truly contributes to stress reduction.

Environmental factors and life circumstances also influence the effectiveness of exercise as a stress-reduction strategy (Nugroho & Soetjiningsih, 2023). For individuals facing intense external pressure or life burdens, exercise alone may not be sufficient. These individuals often require additional interventions such as psychological therapy or social support to manage their stressors comprehensively

(Snowden et al., 2015). Research shows that exercise is generally more effective as a supplementary intervention for mild to moderate stress, whereas in cases of severe or chronic stress, exercise alone is often inadequate (Singh et al., 2023).

Lastly, an individual's perception of exercise can also affect its efficacy in reducing stress. Those who view exercise as an enjoyable activity rather than an obligation tend to experience greater benefits. In contrast, those who see it as a chore may find it mentally taxing (Joung et al., 2023). Therefore, while exercise holds strong potential as a method for managing stress, factors such as intensity, motivation, individual perception, and life context must be taken into account to ensure that it truly helps in reducing stress.

Sports Factors That Are Ineffective in Reducing Depression

Exercise has been shown to offer numerous benefits in reducing symptoms of depression; however, it is not always effective for every individual (Rahayu et al., 2024). Several factors can contribute to the limited effectiveness of exercise in alleviating depression. First, the intensity, frequency, and type of exercise play a crucial role in determining outcomes. Research indicates that moderate-intensity exercise performed consistently is more effective in enhancing mood compared to low or very high-intensity workouts (Saufi et al., 2024). For some individuals, low-intensity exercise may not be sufficient to stimulate the release of mood-enhancing hormones such as endorphins and serotonin (Pualiliati & Sijabat, 2020).

Second, consistency is a key factor in reaping the mental health benefits of exercise. Individuals who do not engage in physical activity regularly may not experience significant improvements in depressive symptoms (Noetel et al., 2024). Third, motivation and engagement in exercise also play a significant role. For individuals who lack motivation or perceive exercise as a burden, achieving psychological benefits becomes more difficult (Li et al., 2024).

Fourth, solitary exercise may not provide the same mental health benefits as group-based activities. Studies have shown that group exercise can enhance feelings of connection and social support, which have a positive effect in reducing depression (Stevens et al., 2021). In contrast, exercising alone may feel isolating for some individuals, particularly those who derive greater benefit from social interaction.

Lastly, an individual's physical condition and overall health status also influence the effectiveness of exercise in alleviating depression. Those with certain health limitations may feel restricted in their ability to exercise, which can diminish their sense of accomplishment or self-satisfaction (Herring MP, 2012).

CONCLUSSION

These findings highlight the importance of understanding that exercise interventions may be more effective in reducing anxiety with a significance value of 0.000 compared to lowering levels of stress and depression. This may be due to the fact that for adolescents or individuals in vulnerable conditions, interventions must be tailored to meet the specific mental health needs and conditions of each individual. For example, for individuals experiencing mild anxiety, exercise can serve as an effective and easily accessible solution. However, for those dealing with severe stress or depression, a more comprehensive approach may be necessary, such as psychological counseling, behavioral therapy, or more intensive social support.

Overall, this research provides new insights into the effectiveness of exercise as a mental health intervention, particularly in managing anxiety. However, further studies are needed to explore the types of anxiety and the symptoms both physiological and psychological that may arise. Exercise can be implemented as an initial or complementary strategy to support mental well-being.

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