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## EFFECTS OF INDOOR AND OUTDOOR SPORTS BASED ON THEIR LEISURE ACTIVITY TO REDUCE AGGRESSION FOR JUVENILE OFFENDERS

**PUNITHA P<sup>1</sup>, SURYA<sup>2</sup>, KIRTHIKA VELINANI<sup>2</sup>, GOMATHI. R<sup>2</sup>, SHERLINE  
RANCY P<sup>2</sup> AND SRINITHI J<sup>2</sup>**

**1:** Associate Professor, Saveetha College of Occupational Therapy, Saveetha Institute of Medical and Technical Science (SIMATS), Saveetha Nagar Thandalam, Chennai, Tamil Nadu, India

**2:** Occupational Therapist, Saveetha College of Occupational Therapy, Saveetha Institute of Medical and Technical Science (SIMATS), Saveetha Nagar Thandalam, Chennai, Tamil Nadu, India

**\*Corresponding Author: Mr. Arun Kumar: E Mail: [arunbot@rediffmail.com](mailto:arunbot@rediffmail.com)**

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### ABSTRACT

This study aimed to examine the effects of indoor and outdoor leisure activities on reducing aggression in juvenile prisoners. Aggressive behavior among participants was assessed using the Modified Overt Aggression Scale (MOAS). The study involved 30 juvenile prisoners, all under the age of 18, who were identified as having aggressive tendencies. The participants were randomly divided into two groups: a control group (n=15) and an experimental group (n=15). The control group participated in indoor activities (Carrom), while the experimental group engaged in outdoor activities (Football). The intervention lasted for three months, comprising 30 sessions conducted three times a week. The Pre- and post-intervention aggression levels were measured using the MOAS. Statistical analysis revealed significant reductions in aggression levels in the experimental group following the intervention. The findings suggest that outdoor activities, particularly football, are more effective in reducing aggression among juvenile prisoners compared to indoor activities. This study highlights the role of occupational therapists in incorporating leisure-based interventions as part of the treatment strategy for managing aggression in juvenile correctional settings.

**Keywords: Aggression, Leisure Activity, Indoor and Outdoor Sports**

## INTRODUCTION

Occupational therapists who work in mental health are under increased pressure to incorporate evidence-informed approaches into their practice; however, few resources are available to guide them. This pressure primarily comes from mental health care policymakers and clinical managers responsible for service planning. Clinical OTs have also expressed a strong interest in identifying effective interventions. A review of occupational therapy interventions highlighted a paucity of evidence in the field. Since then, a few systematic reviews have specifically focused on OT in mental health settings. Some of these reviews have examined OT interventions aimed at supporting education and employment. The findings provided evidence for the effectiveness of supported employment (SE), particularly the Individual Placement and Support (IPS) model. Interventions that combined the IPS model with cognitive or social skills training demonstrated the most significant positive outcomes [1].

Aggression encompasses a spectrum of behaviors that can inflict physical or psychological harm on oneself, others, or the environment. It is primarily characterized by an intent to cause harm to others, either physically or mentally. When aggression becomes pervasive or extreme, it may indicate an underlying mental health

condition, substance use disorder, or another medical issue.

Aggression can manifest in several forms:

- **Physical aggression** involves direct actions such as hitting, kicking, beating, or damaging property.
- **Verbal aggression** includes behaviors like mocking, name-calling, or yelling.
- **Passive-aggressive** behavior is more subtle and indirect, such as ignoring someone at a social event or giving backhanded compliments, with the intent to harm indirectly rather than through confrontation.

There are no clearly defined or singular causes of excessive or inappropriate aggression, as it typically results from a complex interplay of biological, psychological, and environmental factors. The prevalence of aggressive behavior among individuals with problematic substance use was 301 out of 795, accounting for 37.9% (95% CI: 34.5%–41.3%). Among the different domains of aggressive behavior, verbal aggression was the most prevalent, reported in 80 individuals (26.6%), while auto-aggression was the least common, observed in 55 individuals (18.3%). Physical aggression was reported by 73 individuals (24.3%), and

aggression against property was noted in 62 individuals (20.6%) [2].

Occupational therapists use both informal and formal assessment tools to identify motor, sensory, cognitive, and social-emotional factors that contribute to a child's aggressive behavior. This comprehensive evaluation allows the school team to develop effective, individualized strategies. The goal of these tailored interventions is to enhance the child's functional participation while addressing and reducing aggressive behaviors. Examples of such interventions include: Sensory integration strategies such as calming activities, role-playing to explore the consequences of behaviour, allowing additional processing time, providing small group instruction, encouraging breaks and downtime, reducing environmental noise, implementing structured routines, recommending lifestyle modifications, facilitating social participation opportunities, and Teaching coping and self-regulation techniques [3].

Youth in secure juvenile justice settings have often experienced multiple forms of traumatic stressors, including victimization, life-threatening accidents or disasters, and interpersonal losses. Aggressive acts differ in their function—either as proactive attempts to harm or control or as reactive efforts to cope or protect oneself or others—and in their form, being overt. The risk of aggression may arise from various

mechanisms. Alterations in the central (brain) and peripheral (autonomic) nervous systems, associated with childhood exposure to maltreatment and violence, are likely to increase stress reactivity, anger, and impulsivity. At the same time, these changes may impair the youth's ability to inhibit such reactions and engage in effective problem-solving [4].

Sports-based interventions are perceived as non-stigmatizing programs that positively influence youth development. Today, local governments and institutions around the world are offering youth sports activities to help prevent juvenile aggression. Additionally, sports participation and adolescent development are key research topics in sociology and psychology, as they are closely linked to socialization in schools. Sport is a fundamental social component of politics, the economy, and culture. Moreover, physical activity, including sports, is increasingly recognized as an important factor in preventing health and psychological problems [5].

## METHODOLOGY

### Study design

A Quasi-experimental study design was used in the study to find out the effects of indoor and outdoor sports based on their leisure activity to reduce aggression for juvenile offenders. A convenient sampling technique was used. A total of 30 subjects were selected and divided into two groups

15 in the control group and 15 in the experimental group. Samples were collected in the Directorate of Social Defence, Juvenile Justice Board, and Government Observation Home, Purasaiwakkam, Chennai.

### Participants

Participants were selected according to the inclusion and exclusion criteria. Persons diagnosed with aggression, aged between 14 to 17 years, only male offenders were included. Persons diagnosed offenders with medium or mild aggression, Substance Abuse, and other Psychological conditions were excluded.

### Instruments

The Modified Overt Aggression Scale (MOAS) has been used for aggression. This study aims to assess the discriminant validity of the MOAS for use in this region, specifically among psychiatric patients. The Modified Overt Aggression Scale (MOAS) is a clinical tool used to quantify and assess aggressive behavior, particularly in psychiatric populations. It was developed as a modification of the original Overt Aggression Scale to provide a more structured, reliable, and standardized way of rating different types of aggression.

### Procedure

A total of 30 juvenile offenders were selected based on specific inclusion criteria. The level of aggression among these offenders was assessed using the Modern

Overt Aggression Scale. Participants were divided into two groups: a control group and an experimental group. Both groups underwent pre-test and post-test evaluations to measure changes in aggression levels. The participants in the experimental group engaged in a structured program consisting of 36 activity sessions. To explore effective methods for reducing aggression in juvenile offenders, the experimental group participated in a structured program involving both indoor and outdoor activities. These activities were designed to be not only beneficial in managing aggressive behavior but also engaging for the participants.

### Duration:

- The duration of the intervention was for 3 months
- 3 sessions per week
- 45 minutes per session
- 36 sessions totally.

### Intervention

**Control group-** Carrom

**Experimental Group-** Football

### DATA ANALYSIS AND RESULTS

In **Table 1**, the p-value of 0.001 is lower than 0.05, the null hypothesis is rejected, and the alternative hypothesis is accepted. Therefore, there is a statistically significant difference between the pre-test and post-test scores in the Control Group of the MOAS. This suggests that the control group showed

significant improvement, possibly due to the intervention received.

In **Table 2**, the Experimental Group, since the p-value of 0.001 is lower than 0.05, the null hypothesis is rejected and the alternative hypothesis is accepted. Therefore, there is a statistically significant difference between the pre-test and post-test scores on the MOAS in the Experimental Group. This suggests that the intervention received by the Experimental Group led to significant improvement.

In **Table 3**, the p-value of 0.005 is less than 0.05, the null hypothesis is rejected and the alternative hypothesis is accepted. Therefore, there is a statistically significant difference in post-test scores between the Experimental and Control Groups on the MOAS. This suggests that the intervention received by the Experimental Group led to greater improvement compared to the Control Group.

**Table 1: Statistical Analysis of Pre- Test and Post- Test in Control Group**

| Test       | Mean    | SD      | N  | Z value | p value |
|------------|---------|---------|----|---------|---------|
| Cntr1_Pre  | 30.6    | 2.22967 | 15 | -3.416  | 0.001*  |
| Cntr1_Post | 15.6667 | 3.24404 | 15 |         |         |

\* Significant at 5% alpha level

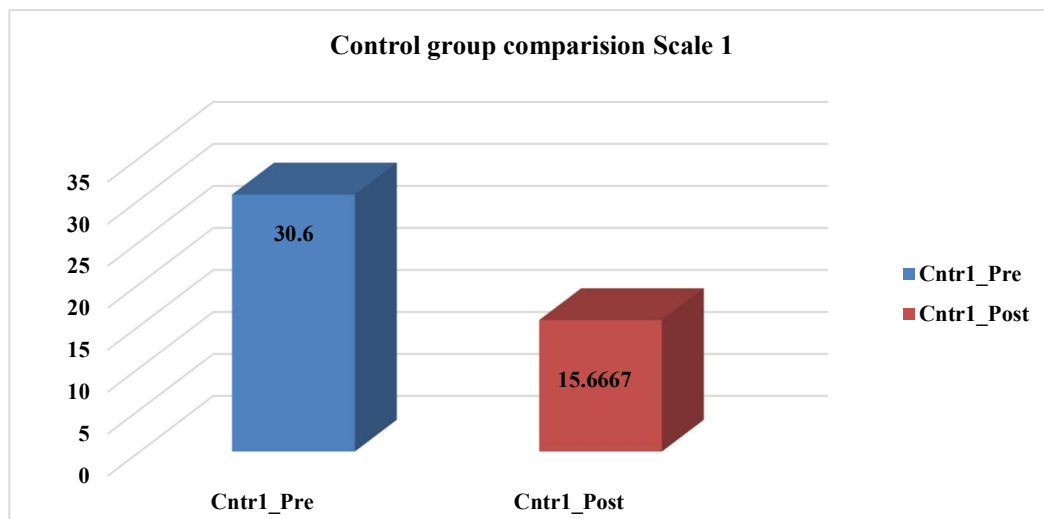


**Figure 1: Difference between Pre and Post Test scores of control group**

**Table 2: Statistical Analysis of Pre- Test and Post- Test in Experimental Group**

| Test       | Mean    | SD      | N  | Z value | p value |
|------------|---------|---------|----|---------|---------|
| Expt1 Pre  | 32.5333 | 3.50238 | 15 | -3.411  | 0.001*  |
| Expt1 Post | 12.4    | 2.35433 | 15 |         |         |

\* Significant at 5% alpha level

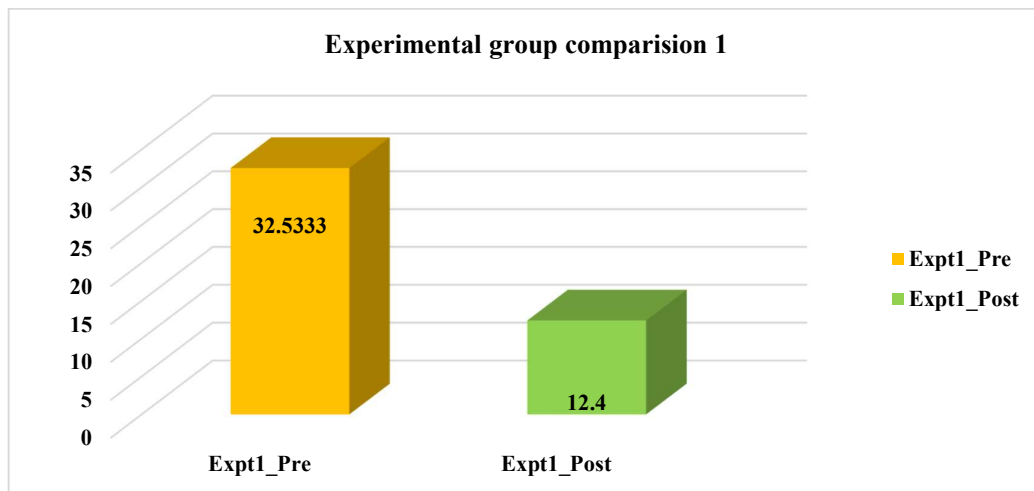


Figure 2: Difference between Pre and Post Test scores of Experimental Group

Table 3: Statistical analysis between the post- test scores of Control and Experimental group

| Group      | Mean    | SD      | N  | Z value | p value |
|------------|---------|---------|----|---------|---------|
| Cntr1_Post | 15.6667 | 3.24404 | 15 | 2.758   | 0.005*  |
| Expt1_Post | 12.4    | 2.35433 | 15 |         |         |

\*Significant at 5% alpha level

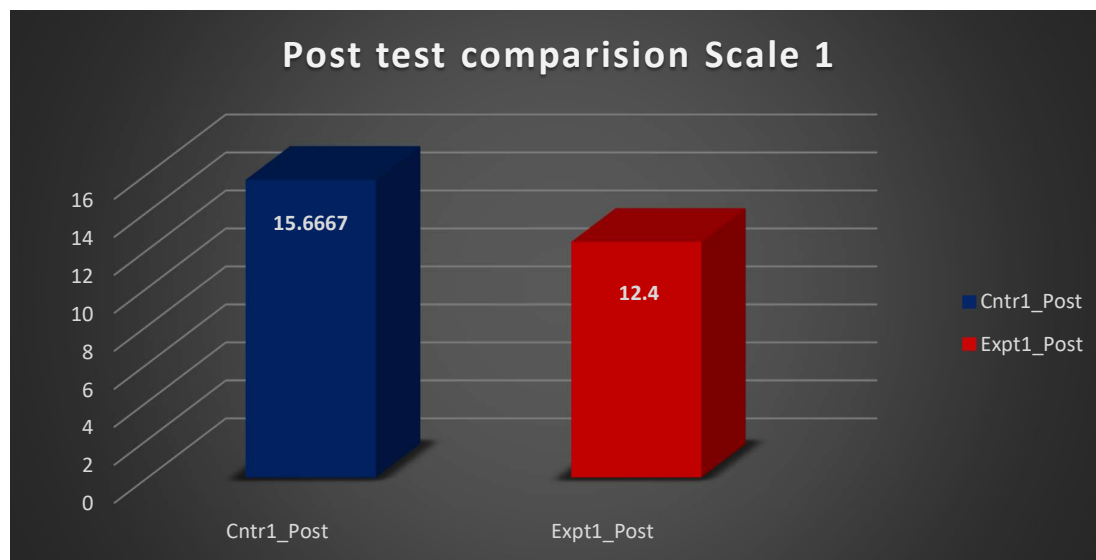


Figure 3: Comparison Between the Post-Test Scores of Control and Experimental Group

## DISCUSSIONS

Previous studies have indicated that juvenile prisoners often experience problems with aggression, which can impact their ability to perform functional tasks and participate in everyday activities. The main purpose of this study was to determine the effects of

indoor and outdoor sports-based leisure activities on reducing aggression among juvenile offenders. The results revealed significant decreases in aggression levels among participants following a training program that included aggression management.

In this study, the distribution of assessment scores for both the control and experimental groups was similar at baseline, and no significant differences were observed between the groups initially. However, participants demonstrated improvement in sleep quality following the intervention.

**Table 1 and Figure 1** present the statistical analysis of pre-test and post-test scores on the Pittsburgh Sleep Quality Index (PSQI) in the control group. The mean pre-test score was 15.13, and the post-test score was 11.8. The Z value was -3.471, and the p-value was 0.001. Since the p-value is less than 0.05, this indicates a statistically significant improvement in sleep quality in the control group following participation in indoor and outdoor activities.

**Table 2 and Figure 2** present the statistical analysis of pre-test and post-test PSQI scores in the experimental group. The mean pre-test score was 16.0, and the post-test score was 8.6. The Z value was -3.482, and the p-value was 0.001. Since the p-value is less than 0.05, there is a highly significant improvement in the experimental group's sleep quality. This suggests that indoor and outdoor sports can contribute to reduced aggression and improved sleep.

**Table 3 and Figure 3** show the statistical comparison of post-test PSQI scores between the control and experimental groups. The mean score for the control group was 11.8, while the experimental

group's mean was 8.6. The Z value was 2.592, and the p-value was 0.01. Since the p-value is less than 0.05, this indicates a statistically significant improvement in the experimental group compared to the control group. This finding suggests that the intervention based on proactive coping through structured sports activities led to greater improvement than conventional occupational therapy programs.

## CONCLUSION

This study was conducted over a period of three months and involved a total of 30 juvenile prisoners. The participants were divided into two groups: 15 in the control group and 15 in the experimental group. Both groups underwent pre-test and post-test assessments using the Modified Overt Aggression Scale (MOAS). The experimental group participated in outdoor sports activities—specifically football—in addition to receiving conventional occupational therapy, while the control group received only conventional occupational therapy. The results indicated a highly significant improvement in aggression levels in the experimental group ( $p = 0.001$ ) compared to the control group ( $p = 0.001$ ). These findings demonstrate that incorporating structured indoor and outdoor sports as part of leisure activities is effective in reducing aggression among juvenile offenders.

## LIMITATIONS AND RECOMMENDATIONS

The duration of the study was relatively short, which may have limited the ability to observe more substantial changes in aggression levels. The study involved a small sample size of juvenile prisoners, which restricts the generalizability of the findings.

The same study can be replicated with a larger sample size and across different settings to enhance the generalizability of the results. A task-oriented approach can be applied to other psychiatric conditions to evaluate its broader therapeutic benefits. Future studies should be conducted over a longer duration to better assess the long-term effects of the intervention. Instead of using convenience sampling, a randomized controlled trial (RCT) design is recommended to improve the validity and reliability of the findings.

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