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**Influence of Organized Recreational Sport Program Participation on Resilience of Child Offenders in Rehabilitation Schools in Kenya**



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**Abstract**

**Purpose:** Participation in organized sports has been increasingly recognized as a valuable intervention for enhancing psychosocial outcomes among at-risk youth, including child offenders. This study examined the influence of an eight-week organized recreational sport program on resilience among child offenders in Kenyan rehabilitation schools.

**Methodology:** Utilizing a quasi-experimental one-group pretest-posttest design, the research involved 188 participants (boys and girls aged 11–18 years) selected through quota sampling from five government rehabilitation institutions: three boys' schools (Getathuru, Wamumu, Kabete, Othaya) and two girls' schools (Kirigiti, Dagoretti). Resilience was measured using the validated Child and Youth Resilience Measure-Revised (CYRM-R). Data were collected via structured questionnaires before and immediately after the intervention period. Attendance was monitored through checklists to ensure program fidelity. Quantitative analysis was performed using SPSS version 24. Descriptive statistics summarized participant demographics and resilience scores, while paired-sample inferential tests assessed pre-post changes in resilience levels.

**Findings:** Quantitative analysis revealed a statistically significant increase in resilience following the eight-week intervention ( $p < 0.001$ ). Pre-intervention mean and standard deviation resilience score was  $30.82 \pm 5.78$ , rising substantially to  $44.82 \pm 3.53$  post-intervention. The Mann-Whitney U test confirmed large effect size differences ( $Z = -12.857, p < 0.001$ ). Resilience category distribution shifted dramatically: low resilience dropped from 42 to 0 participants, while high resilience rose from 16 to 126 participants, indicating the organized recreational sport program markedly enhanced participants' adaptive coping, sense of belonging, and psychological strength.

**Unique Contribution to Theory, Practice and Policy:** These findings provide empirical support for the integration of structured recreational sports into juvenile rehabilitation programs in Kenya. Organized team-based activities appear to foster key resilience factors, such as adaptive coping, sense of belonging, and positive social connections, which are critical for successful reintegration into society. The study recommends that policymakers and rehabilitation school administrators prioritize gender-responsive sports programming, allocate resources for facilities and coaching, and incorporate regular physical activity as a core component of psychosocial rehabilitation strategies. Future research should explore long-term effects, comparative designs with control groups, and the mechanisms underlying sport-induced resilience gains in this population.

**Keywords:** *Organized Recreational Sports, Child Offenders, Resilience, Rehabilitation Schools, Psychosocial Well-Being*

**JEL Codes:** *L83, K42, Z13, I28, K42*

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## INTRODUCTION

Sports are widely recognized as the most prevalent extracurricular activities for adolescents, effectively combating obesity and related health issues (Dumith et al., 2011). Conversely, non-participation in physical activity (PA), including sports, has been linked to elevated cholesterol levels, psychological disorders such as low self-worth, and diminished psychological well-being, including anxiety and depression (Bassett et al., 2015). These issues often emerge during puberty and intensify throughout life. Engagement in sports and organized physical activities fosters teamwork, social skills, and a sense of belonging, ultimately contributing to overall well-being (McMahon et al., 2017). Furthermore, regular physical activity is associated with enhancements in physical health, psychological well-being, and social functioning among adolescents (Freire & Ferreira, 2018).

Youth delinquency represents a complex phenomenon influenced by individual, familial, and societal factors (Spruit et al., 2018a). Sports-based youth development programs have emerged as interventions to support at-risk youth and prevent involvement in delinquency (Spruit et al., 2018b). Physical activity and sport can complement other strategies to reduce crime within specific populations and communities (Berdychevsky et al., 2019). Similarly, sports programs are suggested to prevent lawbreaking, curb delinquency, and lower recidivism rates (Jugl et al., 2023). Youth sports are frequently viewed as a key mechanism for delinquency prevention, predicated on the idea that young people form prosocial bonds with coaches and teammates (Haugan et al., 2021; Jugl et al., 2021). The benefits of sport are particularly amplified in team-oriented environments compared to individual pursuits (McKiernan, 2016). Research indicates that at-risk youth participating in sports programs experience lower school dropout rates and improved job-seeking behaviors (Walsh et al., 2010). This underscores how physical activity and sport (PAS) can help mitigate the damage from Adverse Childhood Experiences (ACEs) and avert further harm tied to criminal behavior by promoting life skills development.

A systematic review by Piggott et al. (2024) on sport and physical activity interventions for life skills development and delinquency reduction in youth found that PAS-based programs bolster life skills among those at risk of or engaged in delinquency. These initiatives are likely to foster personal character growth and social connections in young people. Psychosocial well-being encompasses psychological, social, and communal dimensions (Martikainen et al., 2002), involving happiness, purpose, fulfillment, and positive emotions (Yoo & Ryff, 2019). It is achieved through a balance of challenging and rewarding life events (Dodge et al., 2012). Social well-being includes the ability to fulfill socially acceptable roles, linked to feeling valued by family and community. Sports participation shapes a child's psychosocial health, influenced by social, economic, and physical factors, enriching well-being through increased resilience, self-esteem, social networks, and reduced deviant behavior, thereby strengthening social bonds (Ehsani et al., 2012; Rodríguez-Bravo et al., 2020).

Resilience, in particular, exerts independent effects on psychological well-being (Zeng et al., 2016), serving as a protective factor against adverse outcomes and aiding in the maintenance of physical and mental health (Connor & Davidson, 2003). Sports provide resilience-building elements, such as feelings of worthiness and trust, addressing the recovery needs of child offenders (Norris & Norris, 2021). Studies like Şahin and Hepsöğütü (2018) found no significant differences

in psychological resilience based on gender, income, education, or parental marital status among senior school learners. However, other research suggests resilience increases with age and education level (Blanco-García et al., 2019). Low social cohesion is associated with heightened depressive symptoms in adults (Urzua et al., 2019), and it may protect against depression by discouraging unhealthy behaviors. Recreational activities contribute psychologically and socially, promoting healthy temperament, positive relationships, and emotional strength in youth undergoing social and psychological development (Kozak & Doğantan, 2016). Core sport values like fair play, cooperation, sharing, and respect align with principles for growth and peace.

Existing literature demonstrates that sports serve as a rehabilitative tool in general populations to reduce crime and enhance resilience, self-esteem, and social connections. Yet, evidence on sports and crime reduction for adolescent psychosocial well-being remains inconclusive. Thus, this study examines the influence of organized recreational sport program participation on the resilience of child offenders in Kenyan rehabilitation schools. In Kenya, child offenders in rehabilitation often exhibit low self-esteem due to living conditions (Kithaka & Kariuki, 2018), and recreational activities have been employed to develop skills like resilience (Mucemi, 2010). Kenyan rehabilitation schools integrate sports with academics, as per U.N. rules for juvenile protection and UNESCO declarations emphasizing physical activity rights (Mucemi, 2010; UNESCO, 2013). Ndaita (2017) confirms games aid in building delinquents' social and psychological well-being. However, empirical evidence on recreational activities' contributions to resilience in Kenyan delinquents is lacking, justifying this investigation.

### **Statement of the Problem**

The juvenile justice system in rehabilitation schools aims to support young offenders' rehabilitation through programs including education, counseling, vocational training, and community involvement. These initiatives seek to help youth overcome offending behaviors, address histories of trauma or abuse, facilitate personal growth, enable smooth societal reintegration, and equip them with employable skills for post-release life (Homan & Ziedenberg, 2016; Kinyanjui & Darani, 2021). Many children in Kenyan rehabilitation schools grapple with deep-seated emotional and psychological challenges that contribute to their delinquent tendencies, underscoring the need for effective psychosocial interventions within these settings (Kinyanjui & Darani, 2021).

Growing evidence indicates that regular participation in physical activities and organized sports can significantly enhance self-esteem, resilience, emotional regulation, social bonding, and problem-solving skills among youth in rehabilitative environments (Norris & Norris, 2021). Adolescents engaged in physical activity and sports often show faster rehabilitation progress and reduced delinquent behaviors compared to non-participants (Spruit et al., 2016). Organized sports, particularly when supervised by supportive adults, promote prosocial interactions that help decrease antisocial conduct (Caldwell & Smith, 2006).

Despite extensive research on Kenyan rehabilitation schools covering topics such as juvenile offenses, delinquent behavior, emotional intelligence, program benefits, intervention strategies, challenges, and factors affecting rehabilitation (Kariuki et al., 2019; Kavita, 2013; Kinyua et al., 2014; Mbiriri et al., 2017; Mwanza et al., 2020) there remains a notable gap. Although recreational sports and games are commonly incorporated as rehabilitative tools (Kinyanjui & Darani, 2021),

no rigorous, controlled intervention studies have specifically examined the effects of organized recreational sports participation on psychosocial outcomes, particularly resilience, among child offenders in these Kenyan institutions. This empirical void justifies the present investigation into how structured recreational sport programs influence resilience in this vulnerable population.

### **Purpose of the Study**

The purpose of the study was to assess the effect of participating in organized recreational sport on the resilience of child offenders in Kenyan rehabilitation schools.

### **Hypothesis**

The following hypothesis was formulated for testing;

**H<sub>0</sub>:** There is no significant difference in resilience among the child offenders in rehabilitation schools in Kenya after of participating in an organized recreational sport program.

### **Theoretical Framework**

#### **Independent Variables**

- Participation in organized recreational sports

#### **Dependent Variable**

- Resilience

*Figure 1: Theoretical Framework*

## **LITERATURE REVIEW**

### **History and Overview of Child Offence in Kenya**

In Kenya, the juvenile rehabilitation centers as well as children's department were drawn during the colonial era during the formation of juvenile correctional institutions (Kwallah, 2001). Between 1910 and 1912, the concept of child offence led the building of Kabete approved school to provide for the youth and especially the males who were confined for not complying with the self-registration and failed to be in possession of an identity card (Kipande) (Kwallah, 2001).

Throughout the Second World War, the youth from Kabete approved school were relocated to Dagoretti rehabilitation school in 1945 and once more, the school was chosen as an improvement center for youth and juveniles (Kwallah, 2001). The government of Kenya has continued to introduce numerous rehabilitation schools to assist as modification centres for child offenders that would last for a period of three years due to high increase of delinquent cases in the country (Gachara & Wasanga, 2011). Upon conclusion of their tenure, they are ferried back home and reunified with their parents or guardians (Kinnyanjui & Darani, 2021).

These rehabilitation schools include eight male juvenile rehabilitation schools; Getathuru, Kabete, Kakamega, Kericho, Kisumu, Likoni, Othaya, Wamumu and only two female juvenile rehabilitation schools; Dagoretti and Kirigiti. The rehabilitation programs comprise of educational, recreation, spiritual, vocational, and medical programs to enhance social expansion and impart skills to aid the rehabilitated delinquents. This is done with the expectation that the adolescents were less delinquent (Government of Kenya, 2001; 2010; 2012).

### **Influence of Recreational Sport Participation on Resilience**

Masten (2014) postulates that resilience is not a disposition attribute, but the way persons cope with substantial increasing adversity. Therefore, resilience is the ability of child offenders to endure hardship and recuperate swiftly from hard moments they encounter to be repositioned in society. Popham et al. (2021) indicate that resilience comprises of various arrangements, requires exploration at various levels of investigation, desires to be considered through numerous extents of constructive version, and is a long lived procedure that is affected by progressive practices.

Research has addressed the association of sports participation and resilience among the adolescents and the child offenders. For example, Johnson (2015) using causal –comparative, non-experimental study to investigate the resilience levels of adolescents (n=276) who were engaged in recreational sports and those who were not, revealed that those in team sports within the latter year was significantly greater than their counterparts in resilience. Further, a constructive association among the number of sports activities performed and enhanced resilience up to four sports was unveiled. The study involved the general adolescence group while the current study focused on the child offenders.

Super et al. (2018) disclosed that partaking in sports was positively connected to one's capacity to manage traumatic incidents among the vulnerable youth. Ozkara et al. (2016) study on how physical activity effect the psychological resilience of final year education student teachers (n=331) at Karadeniz Technical University in Northeast Turkey showed association between psychological resilience and physical activities. This was in tandem with Naemikia et al. (2021) study that reveals that partaking in recreational sport program resulted to a considerable influence on the resilience and self-efficacy of the physical education teachers in addition to the physical activity experience of forthcoming teachers. The findings from both studies designates that sport have strong influence on resilience of the participants, it is therefore in favor of these results that the current study tries to support the conclusions by investigating the effects of recreational sports on resilience of child offenders in Kenyan rehabilitation schools.

Kivrak and Akandere (2019) examined the resilience levels of women and men who attend gym for sports. The study discovered no considerable disparity between the average values of resilience deviations dependent on age factor. This was in tandem with Aslan (2018) study on university students that stated the level of resilience of the participants was not influenced by the age groups. Nevertheless, the two studies did feature age as a plausible variable that could relate engagement in recreational sports and resilience. Hence, the current study attempted to evaluate the possible effect of age on the impact of involvement in organized recreational sports on resilience of child offenders in rehabilitation schools in Kenya.

Killgore et al. (2020) identified issues that might result to intensified psychological resilience over the initial weeks of the nation-wide COVID-19 lockdown attempts among the USA adults. It revealed that staying outdoors and exposure to sunshine momentarily every day as well as being engaged in exercise were both linked with more resilience. Additionally, Sañudo et al. (2024) recommends the use of psychosocial sports and play programs to offer significant chances for competent sports personnel to assist improve teenagers' resilience. While there have been research studies examining the psychosocial benefits of sports participation to the adolescence and adults, paucity of study investigating the precise effects of sport participation on resilience among the juvenile delinquency exist and this forms the basis for the current study.

## **METHODOLOGY**

The study employed a quasi-experimental one-group pretest-posttest design to evaluate the influence of participation in an organized recreational sport program on resilience among child offenders in Kenyan rehabilitation schools. The target population included 352 children (boys and girls) aged 11–18 years enrolled in ten government-run rehabilitation institutions. A quota sampling technique selected 188 participants from five schools: three boys' schools (Getathuru, Wamumu, Kabete, Othaya) and two girls' schools (Kirigiti, Dagoretti). Inclusion required participants to be juvenile offenders aged 11–18 years and willing to engage; exclusion applied to those with severe physical or mental conditions preventing sport involvement.

The eight-week intervention involved organized recreational soccer (boys) and netball (girls), delivered three times weekly for one hour per session under qualified coaches. Resilience was assessed using the validated Child and Youth Resilience Measure-Revised (CYRM-R), a 17-item instrument with a 3-point response scale (No = 1, Sometimes = 2, Yes = 3). Pre- and post-intervention data were collected via structured questionnaires, with attendance tracked through checklists to verify fidelity.

Data analysis utilized SPSS version 24. Descriptive statistics (means, standard deviations, frequencies, percentages) described participant profiles and resilience levels. Pre-post changes in resilience were examined using appropriate inferential tests (paired t-test or Wilcoxon signed-rank test, based on normality), with significance set at  $p < 0.05$ . Ethical clearance was secured from Kenyatta University's Ethical Review Committee. Informed assent was obtained from participants, parental/guardian consent where required, and permission from school administrators. Confidentiality, anonymity, and voluntary participation were strictly maintained

## **DATA ANALYSIS AND PRESENTATION**

### **Response Rate**

The study attained a response rate of 129 participants from the sample of 188. All 129 respondents participated in the pre-test, providing baseline data on resilience. Following the recreational sports intervention, the same 129 participants completed the post-test, allowing for the evaluation of changes in resilience. This made up a 68.6% percent response rate. The non-participation of the 59 juveniles was primarily due to absences from the intervention sessions, withdrawal/refusal during the study period and those whose questionnaires were unusable. According to the coaches and facility administrators, these cases stemmed from disciplinary issues, medical reasons, or voluntary opt-out after initial briefing. However, the response rate of 68.6% was considered

sufficient. In social science and psychological research, response or completion rates above 60% are generally viewed as acceptable for supporting the validity of findings (Fincham, 2008).

### **Impact of an Organized Recreational Sport Program on Resilience**

The study aimed to examine the effect of an organized recreational sport program on the resilience of child offenders in rehabilitation schools in Kenya. The Child & Youth Resilience Measure-Revised (CYRM-R) scale was used to assess resilience levels before (pre-intervention) and after (post-intervention) the program.

### **Descriptive Statistics on the Resilience of the Participants**

Descriptive statistics were calculated to summarize the resilience scores before and after the intervention, as shown in Table 1.

The resilience scores ranged from 21 to 50, with a mean and standard deviation ( $30.82 \pm 5.78$ ). This suggests that before the program, the participants had a broad range of resilience scores, with some participants exhibiting lower resilience and others showing higher resilience. After the intervention, the resilience scores ranged from 28 to 51, with a mean and standard deviation ( $44.82 \pm 3.53$ ). The increase in the mean score and the reduction in the standard deviation indicate that the intervention had a positive effect, with most participants showing higher resilience and less variation in scores after the program.

**Table 1 Descriptive Statistics for Resilience Scores (n=129)**

		<b>N</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Std. Deviation</b>
Resilience Composite	Pre-intervention	129	21	50	30.82	5.78
	Post-intervention	129	28	51	44.82	3.53

### **Comparison of Resilience Scores before and after Intervention**

The resilience scores were categorized into three levels: low resilience, moderate resilience, and high resilience. The distribution of participants across these categories before and after the intervention is presented in Table 2.

Prior to the intervention, 42 participants were categorized as having low resilience, while 71 participants had moderate resilience, and 16 had high resilience. However, after the intervention, the distribution shifted significantly. None of participants were categorized as having low resilience, while 3 participants had moderate resilience, and 126 participants had high resilience. These findings suggest that the intervention led to a significant increase in the number of participants with high resilience.

**Table 2: Pre- and Post-Intervention Mean Resilience Scores of the Participants (n=129)**

		<b>Category</b>		
		<b>Pre-intervention</b>	<b>Post-intervention</b>	<b>Percentage</b>
Resilience Composite	Lower Resilience	42	0	16.3%
	Moderate Resilience	71	3	28.7%
	High Resilience	16	126	55.0%

### Testing Hypothesis – Paired Comparison of Resilience

The hypothesis ( $H_{01}$ : There is no significant difference in resilience among the child offenders in rehabilitation schools in Kenya after an organized recreational sport program) was tested using the Mann-Whitney U test. The results are presented in Table 3.

The mean rank for resilience scores in the pre-intervention group was 69.84, with a sum of ranks of 9010. The mean rank for resilience scores in the post-intervention group was 189.16, with a sum of ranks of 24401. The Mann-Whitney U statistic was 625. The Z-value was -12.857, and the Asymptotic Significance (p-value) was 0.000. Since the p-value is less than 0.05, we reject the null hypothesis ( $H_{01}$ ), indicating that there is a significant difference in resilience between the pre- and post-intervention groups.

**Table 3: Mann-Whitney U Test Results on the Pre-and Post-Test Scores on Resilience of the Participants (n=129)**

	Category	N	Mean Rank	Sum of Ranks			
Resilience	Pre-intervention	129	69.84	9010	Mann-Whitney U	625	
	Post-intervention	129	189.16	24401	Z	-12.857	
						Asymp. Sig. (2-tailed)	0.000
						a Grouping Variable:	
						Category	

### Discussion

The findings of this study clearly demonstrate that the organized recreational sport program had a significant positive impact on the resilience of child offenders in rehabilitation schools in Kenya. Participants showed notable improvements in their ability to adapt to challenges and stressors following the intervention. This aligns with existing literature that emphasizes the importance of structured interventions, such as recreational sports, in promoting resilience, particularly among vulnerable populations like child offenders (Berdychevsky et al., 2019; Son & Berdychevsky, 2022).

The significant improvement in resilience observed after the intervention supports the growing body of evidence suggesting that participation in structured recreational activities can enhance psychological strength and adaptive coping mechanisms. The reasons for these improvements include the program's provision of repeated opportunities for participants to experience manageable challenges (for instance, learning new skills, facing competition, or overcoming setbacks in games), which built self-efficacy and problem-solving abilities. Additionally, team-based activities fostered social connections and a sense of belonging, while physical exertion contributed to better emotional regulation through endorphin release and improved physical self-perception. These elements created a supportive environment where participants could practice coping strategies in a safe, non-stigmatizing setting.

According to previous research, resilience is not a fixed trait but can be developed and strengthened through positive experiences and supportive environments (Masten & Barnes, 2018). Structured programs like the recreational sport program used in this study offer participants opportunities for

success, social connection, and emotional growth, all of which contribute to increased resilience. Such programs are particularly beneficial for youth facing adversity, as they provide a safe and constructive environment for personal development.

The shift in resilience categories, with a significant increase in the number of participants classified as having high resilience post-intervention, further supports the idea that structured sports programs can lead to meaningful changes in resilience. These findings corroborate existing studies that have shown that recreational and physical activity interventions can increase resilience by promoting social cohesion, improving self-efficacy, and fostering a sense of achievement (Gartland et al., 2019; Ungar, 2021).

The strong positive correlation between participation in the program and increased resilience further corroborates the effectiveness of the intervention. A positive relationship between structured program participation and resilience outcomes is well-documented in the literature. Previous studies have shown that engaging in organized activities, particularly those that involve physical exercise and social interaction, enhances psychological well-being and resilience (Camiré et al., 2022; Ostaszewski, 2020).

Specific studies conducted among deviant or at-risk youth populations in other countries have reported similar positive findings. For instance, the United Nations Office on Drugs and Crime (UNODC) “Line Up Live Up” sport-based life skills programme, piloted with at-risk and institutionalized youth in countries across Latin America (Brazil, Colombia, Peru), Africa (South Africa, Uganda), Central Asia, and the Middle East, demonstrated improvements in resilience-related skills such as emotional regulation, critical thinking, and resistance to negative peer pressure. Sport-based youth development (SBYD) programmes in the United States have also shown positive effects on resilience among racially and economically marginalized youth, helping participants better manage adversity through enhanced coping and perseverance (Bopp et al., 2021). In Europe and other contexts, structured sports interventions for at-risk youth have been linked to the development of life skills that buffer against offence and support adaptive functioning (Piggott, 2025; Godor, 2025).

The findings align with the Positive Youth Development (PYD) framework, which emphasizes the importance of providing young people with opportunities to engage in meaningful activities that promote personal growth, social connections, and resilience (Bruner et al., 2024). PYD models suggest that when youth participate in structured, supportive activities such as sports, they develop a range of competencies, including problem-solving skills, emotional regulation, and interpersonal skills, all of which contribute to resilience (Bowers et al., 2021). The structured nature of the recreational sport program, coupled with the sense of achievement and belonging it provided, likely contributed to the observed improvements.

The significant improvements in resilience observed in this study have important implications for juvenile rehabilitation programs. Given the effectiveness of the recreational sport program in fostering resilience, it is recommended that rehabilitation centres for child offenders enhance existing sports activities with structured programmes specifically designed to develop psychosocial skills and resilience, rather than relying solely on general participation. Such programmes can provide more than physical benefits; they also serve as a practical tool for

addressing emotional and psychological challenges, helping at-risk youth develop coping strategies, improve social functioning, and potentially reduce recidivism rates.

Additionally, the findings suggest that resilience-building interventions, such as recreational sports, should be an integral part of rehabilitation programmes, as they help young people build the psychological resources necessary for successful reintegration into society. In the context of juvenile justice, these programmes can play a critical role in transforming the lives of young people, helping them transition from negative behaviours and experiences toward positive outcomes.

## **CONCLUSION AND RECOMMENDATIONS**

### **Conclusion**

The study concluded that the organized recreational sport program significantly improved resilience among child offenders in Kenyan rehabilitation schools. Resilience increased, reflecting better adaptive coping and emotional regulation. Overall, the findings confirm that structured recreational sports serve as an effective psychosocial intervention for at-risk youth in rehabilitation settings.

### **Recommendations**

The Ministry of Labour and Social Protection, together with the Department of Children Services, should integrate structured recreational sport programs (such as soccer for boys and netball for girls) into the core rehabilitation curriculum of all Kenyan juvenile rehabilitation schools. Adequate funding should be allocated for sports facilities, equipment, and qualified coaches. Gender-sensitive approaches are recommended to maximize psychosocial benefits, particularly resilience, among female participants. Regular monitoring and follow-up evaluations should assess long-term impacts on reintegration outcomes.

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