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A Comparative Study on Impact of Structured Physical Activity on Self-Esteem and Self-Concept in Children

Abhishek Tushir[1], Kajal Yadav[2], Chandraraj Das[3]

[1]Swimming Coach, Mayo College, Ajmer (Rajasthan)
[2]Ph.D. scholar, Department of Health sciences, Lakshmibai National Institute of Physical Education ,Gwalior (M.P.)
[3]Swimming Coach, Mayo College, Ajmer (Rajasthan)

Abstract

Physical activity offers not only the body with physical health but also has a tremendous effect on psychological well-being especially for the child. Self-esteem and self-concept influence the confidence of children, their emotional stability and interaction among them. This study looks into how structured physical activity impacts these psychological dimensions among children aged between 8 and 12 in Gwalior India. In the 12-week intervention a total of 100 children were involved: 50 with structured physical activity sessions and 50 in control groups maintaining their usual routines. Before and after the intervention self-esteem and self-concept were assessed by Rosenberg Self-Esteem Scale (RSES) and Piers-Harri ' Children's Self-Concept Scale. It was found that there were highly significant improvements in the experimental group but not much changes occurred in control groups. This study pointed out the need for scheduled physical activity at school and community level to help children in urban India develop positive mental well-being.

Keywords- Structured Physical Activity, Self-Esteem, Self-Concept.

Introduction

The relationship between physical activity and mental well-being among children has been an increasingly popular area of research. While the benefits of exercise for physical health have been well-documented, its value on psychological factors such as self-esteem and self-concept is more recently being discussed in contemporary literature (Biddle S. J., 2011) (Ahn.. S.., 2011) (Lubans, 2016) . Ekeland e Self-esteem implies an individual's perception of his or her own worthwhile self-concept implies how children perceive their abilities and identities (Harter, 2012). Marsh These psychological attributes are vital as they shape children's confidence academic performance and social interactions (Baumeister, 2003) (Fox, 2000).

A growing body of evidence suggests that physical activity contributes positively to psychological well-being by fostering social engagement, reducing stress and improving mood (Sallis, 2000). Strong et al In India, rapid urbanization increased academic pressure and excessive screen time have contributed to increasing sedentary lifestyles among children leading to both physical and psychological health concerns (Reddy, 2018). Pat Moreover academic stress and reduced outdoor playtime are linked to declining self-esteem levels among school-going children (Singh, 2019.).

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While numerous studies in Western contexts have confirmed the positive impact of physical activity on mental health (Ahn. S., 2011) (Biddle S. J., 2011.) (Biddle S. J., 2008). There is limited research focusing on urban Indian children especially in smaller cities like Gwalior. Given the rising stress levels among children due to academic and social pressures, it is imperative to understand the role of physical activity in fostering positive psychological outcomes.

This study aims to investigate whether structured physical activity programs positively affect self-esteem and self-concept among children aged 8-12 in Gwalior India. This study provides valuable insights into the potential benefits of incorporating exercise into children's daily life by comparing an experimental group undergoing structured physical activities to a control group maintaining sedentary routine.

Study Design

This study adopted a quasi-experimental pre-test/post-test design with two groups: an experimental group that participated in structured physical activities and a control group that did not participate. The intervention lasted 12 weeks providing adequate physical activity while allowing for measurable psychological changes.

Sampling

A total of 50 children from urban schools in Gwalior have been selected using stratified random sampling technique. Participants were equally divided into experimental groups (n = 50) and control groups in the control groups. Groups experimental grouping: The inclusion criteria included children aged 8-12 years who were physically capable of participating in structured physical activities. Those children included children with pre-existing medical conditions preventing exercise participation.

Data Collection

Data collection involved pre- and post-intervention interventions using validated psychological scales: SS1 and SS2 for individuals with a history of Self-Esteem was Measured using the Rosenberg Self-Esteem Scale (RSES) a 10-item scale widely used to assess self-worth (Rosenberg, 1965) and Self-Concept was Evaluated using the Piers-Harris children' self-concept scale, an 80-item questionnaire measuring various aspects of self-perception (Piers, 1984).

Statistical Methods

To analyse the data Paired t-test was Used to analyse changes in self-esteem and self-concept within each group before and after the intervention. Independent t-test was Applied to compare post-intervention scores between experimental and control groups. For Cohen d Calculation to determine the effect size of the intervention indicating the magnitude of differences observed.

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Statistical Analysis

Table 1: Descriptive Statistics of Self-Esteem and Self-Concept Scores

Group	N	Pre-Self-Esteem (Mean ± SD)	Post-Self-Esteem (Mean ± SD)	Pre-Self-Concept (Mean ± SD)	Post-Self-Concept (Mean ± SD)
Experimental	50	17.48 ± 4.05	23.61 ± 3.12	33.58 ± 6.15	50.42 ± 5.40
Control	50	18.03 ± 3.90	18.45 ± 4.12	34.12 5.80	34.76± 5.92

Table 1- Presents the mean and standard deviation (SD) of self-esteem and self-concept scores before (pre) and after (post) the intervention for both the experimental and control groups. The **experimental group** showed a significant increase in both self-esteem (17.48 to 23.61) and self-concept (33.58 to 50.42). whereas the **control group** exhibited minimal change in both self-esteem (18.03 to 18.45) and self-concept (34.12 to 34.76).

Table 2: Paired Samples t-Test Results (Within-Group Comparisons)

Variable	Group	Mean Difference	t-Value	df	p-Value
Self-Esteem	Experimental	6.13	9.52	**49**	<0.001
Self-Esteem	Control	0.42	1.02	**49**	0.312
Self-Concept	Experimental	16.84	12.73	49	<0.001
Self-Concept	Control	0.64	1.18	49	0.238

Table 2: Compares the pre- and post-test results within each group (experimental and control) for self-esteem and self-concept using a paired t-test. **Experimental group**: Both self-esteem ($p < 0.001$) and self-concept ($p < 0.001$) show significant improvements. **Control group**: No significant changes were observed in either self-esteem ($p = 0.312$) or self-concept ($p = 0.238$), as p-values are greater than 0.05.

Table 3: Independent Samples t-Test Results (Between-Group Comparisons)

Variable	Mean Difference	t-Value	df	p-Value
Self-Esteem	5.16	7.45	98	<0.001
Self-Concept	15.66	10.82	98	<0.001

Table-3 Compares the post-test results of self-esteem and self-concept scores between the experimental and control groups using an independent t-test. Mean Difference between the experimental and control group means was 5.16 and 15.66. **t-Value** indicating whether the difference between groups is statistically significant and the values were 7.45 and 10.82 respectively. **df**: here 98 (n1 + n2 - 2, where n1 and n2 are the sample sizes of each group. Both **self-esteem** ($p < 0.001$) and **self-concept** ($p < 0.001$) show significant differences, with the experimental group demonstrating higher scores than the control group.

Table 4: Effect Size (Cohen's d) for the Experimental Group

Variable	Cohen's d	Effect Size Interpretation
Self-Esteem	1.25	Large
Self-Concept	2.03	Very Large

Table-4 Provides the effect size (Cohen's d) for the experimental group to assess the magnitude of the intervention's impact. Cohen's d measure of the effect size, interpreting how large the difference is between the pre- and post-test scores. Larger values indicate stronger effects. Self-Esteem: Cohen's d = 1.25, which is considered a large effect and Self-Concept Cohen's d = 2.03, which is considered a very large effect. Both self-esteem and self-concept improvements in the experimental group were large, suggesting the intervention had a strong impact.

Discussion of Findings

The results of the study strongly support the hypothesis that structured physical exercise builds self-esteem and self-concept in children. The experimental group demonstrated substantial psychological improvements while the control group exhibited only minor variations. The large effect sizes (Cohen d = 1.25 for self-confidence and 2.03 for self-concept) indicate that the intervention had an effective impact.

These results align with previous research emphasizing the psychological benefits of physical activity (Ahn. S., 2011). Physical activity promotes neurochemical changes such as increased endorphin levels that improve mood and confidence. Furthermore, structured physical activity enhances social interaction and skill development further contributing to enhanced self-perception. The study focuses on integrating structured exercise with school programming to address the growing concern about smoking among young people in urban India.

Conclusion

This study reinforces the importance of physical activity as a powerful tool for improving young children's self-confidence and self-confidence. The statistically significant differences observed in the experimental group highlight the potential of structured exercise interventions in enhancing psychological well-being. For young children in urban India mental well-being and psychological stress should be considered an essential component of their daily routines. Schools, policymakers and parents should collaborate to create an environment where physical activity is not just encouraged but integrated into children's education and lifestyle. Future research should aim to explore long-term effects and variations across different socio-economic groups. By prioritizing physical activity, we can foster a generation of emotionally resilient and socially confident individuals in contributing to a healthier society.

Bibliography

Ahn. S., &. F. (2011). A meta-analysis of the relationship between children's physical activity and mental health. *Journal of Pediatric Psychology, 36(4),.*, 385–397.

Ahn.. S.., &. F. (2011). A meta-analysis of the relationship between children's physical activity and mental health. *Journal of Pediatric Psychology, 36(4),*, 385–397.

Baumeister, R. F. (2003). Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles? *Psychological Science in the Public Interest, 4(1),*, 1-44.

Biddle, S. J. (2008). Psychology of physical activity:Determinants. *well-being and interventions (2nd ed.). Routledge.*

Biddle, S. J. (2011). Physical activity and mental health in children and adolescents: A review of reviews. *British Journal of Sports Medicine, 45(11)*, , 886-895.

Biddle, S. J. (2011.). Physical activity and mental health in children and adolescents: A review of reviews. *British Journal of Sports Medicine, 45(11),*, 886-895.

Fox, K. R. (2000). The effects of exercise on self-perceptions and self-esteem. *Physical activity and psychological well-being Boutcher (Eds.) Routledge.*, 88-117.

Harter, S. (2012). The construction of the self: Developmental and sociocultural foundations. *(2nd ed.). Guilford Press.*

Lubans, D. R. (2016). Physical activity for cognitive and mental health in youth: A systematic review of mechanisms. *PLOS*.

Piers, E. V. (1984). Piers-Harris Children's Self-Concept Scale: Revised manual. *Western Psychological Services.*

Reddy, K. S. (2018). Responding to the threat of chronic diseases in India. *The Lancet, 366(9498),*, 1744-1749.

Rosenberg, M. (1965). Society and the adolescent self-image. *Princeton University Press.*

Sallis, J. F. (2000). A review of correlates of physical activity of children and adolescents. . *Medicine & Science in Sports & Exercise, 32(5),* , 963-975. .

Singh, A. &. (2019.). A comparative study of urban and rural students.Impact of academic stress on self-esteem among adolescents:. *International Journal of Adolescence and Youth, 24(1),*, 63-74.

References

Ahn, S., & Fedewa, A. L. (2011). A meta-analysis of the relationship between children's physical activity and mental health. *Journal of Pediatric Psychology, 36*(4), 385–397. https://doi.org/10.1093/jpepsy/jsq107

Baumeister, R. F., Campbell, J. D., Krueger, J. I., & Vohs, K. D. (2003). Does high self-esteem cause better performance, interpersonal success, happiness, or healthier lifestyles?

Psychological Science in the Public Interest, 4(1), 1-44. https://doi.org/10.1111/1529-1006.01431

Biddle, S. J. H., & Asare, M. (2011). Physical activity and mental health in children and adolescents: A review of reviews. *British Journal of Sports Medicine, 45*(11), 886-895. https://doi.org/10.1136/bjsports-2011-090185

Biddle, S. J. H., & Mutrie, N. (2008). *Psychology of physical activity: Determinants, well-being and interventions* (2nd ed.). Routledge.

Ekeland, E., Heian, F., Hagen, K. B., Abbott, J., & Nordheim, L. (2004). Exercise to improve self-esteem in children and young people. *Cochrane Database of Systematic Reviews, 2004*(1), CD003683. https://doi.org/10.1002/14651858.CD003683.pub2

Fox, K. R. (2000). The effects of exercise on self-perceptions and self-esteem. In S. J. H. Biddle, K. R. Fox, & S. H. Boutcher (Eds.), *Physical activity and psychological well-being* (pp. 88-117). Routledge.

Gupta, N., Goel, K., Shah, P., & Misra, A. (2020). Childhood obesity in developing countries: Epidemiology, determinants, and prevention. *Endocrine Reviews, 43*(1), 48–77. https://doi.org/10.1210/er.2019-00007

Harter, S. (2012). *The construction of the self: Developmental and sociocultural foundations* (2nd ed.). Guilford Press.

Lubans, D. R., Richards, J., Hillman, C. H., Faulkner, G., Beauchamp, M. R., Nilsson, M., Kelly, P., Smith, J. J., Raine, L. B., & Biddle, S. J. H. (2016). Physical activity for cognitive and mental health in youth: A systematic review of mechanisms. *PLOS ONE, 11*(4), e0150428. https://doi.org/10.1371/journal.pone.0150428

Marsh, H. W. (1990). Influences of internal and external frames of reference on the formation of math and English self-concepts. *Journal of Educational Psychology, 82*(1), 107-116. https://doi.org/10.1037/0022-0663.82.1.107

Pate, R. R., Pratt, M., Blair, S. N., Haskell, W. L., Macera, C. A., Bouchard, C., Buchner, D., Ettinger, W., Heath, G. W., & King, A. C. (1995). Physical activity and public health: A recommendation from the Centers for Disease Control and Prevention and the American College of Sports Medicine. *JAMA, 273*(5), 402-407. https://doi.org/10.1001/jama.1995.03520290054029

Piers, E. V. (1984). *Piers-Harris Children's Self-Concept Scale: Revised manual*. Western Psychological Services.

Reddy, K. S., Shah, B., Varghese, C., & Ramadoss, A. (2018). Responding to the threat of chronic diseases in India. *The Lancet, 366*(9498), 1744-1749. https://doi.org/10.1016/S0140-6736(05)67343-6

Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton University Press.

Sallis, J. F., Prochaska, J. J., & Taylor, W. C. (2000). A review of correlates of physical activity of children and adolescents. *Medicine & Science in Sports & Exercise, 32*(5), 963-975. https://doi.org/10.1097/00005768-200005000-00014

Singh, A., & Sharma, S. (2019). Impact of academic stress on self-esteem among adolescents: A comparative study of urban and rural students. *International Journal of Adolescence and Youth, 24*(1), 63-74. https://doi.org/10.1080/02673843.2018.1524744

Strong, W. B., Malina, R. M., Blimkie, C. J., Daniels, S. R., Dishman, R. K., Gutin, B., Hergenroeder, A. C., Must, A., Nixon, P. A., & Pivarnik, J. M. (2005). Evidence-based physical activity for school-age youth. *The Journal of Pediatrics, 146*(6), 732-737. https://doi.org/10.1016/j.jpeds.2005.01.055