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Effect of combined training on anthropometric variable in tribal volleyball players of Tirupattur district

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Abstract

This study investigates the impact of a culturally tailored resistance and explosive training intervention on anthropometric variables among tribal volleyball players of Tirupattur District. The age group of the participants are 15 to 17. The intervention, designed to enhance physical fitness while respecting cultural nuances, comprises a comprehensive training program incorporating resistance exercises, explosive drills, and traditional elements. The study involves a sample of tribal athletes, assessing anthropometric measurements such as thigh girth before and after the intervention. The key findings reveal positive changes in body thigh girth the effectiveness of the tailored intervention. The study's outcomes not only inform future training strategies for tribal athletes but also underscore the importance of combine training approaches in promoting physical well-being. This research advocates for inclusive interventions that bridge the gap between athletic performance and combine training in tribal communities.

Keywords: Tribal school volleyball players, resistance training, explosive training, anthropometric variable

Introduction

This study explores the effects of a combined resistance and explosive training intervention on anthropometric variables among tribal volleyball players of Tirupattur District. In tribal communities, sports play a crucial role in promoting physical fitness, cultural pride, and social cohesion. Tailoring training programs to the unique needs of tribal athletes is essential for their holistic development. The integration of resistance and explosive training components aims to enhance not only physical prowess but also cultural sensitivity within the training regimen. As tribal populations often face health disparities, understanding the impact of such interventions on anthropometric variables becomes paramount. This research seeks to contribute valuable insights into optimizing training strategies for tribal athletes, fostering a balance between cultural relevance and athletic performance.

Background and History of Volleyball Game

Volleyball, a dynamic and fast-paced team sport, originated in 1895 in Holyoke, Massachusetts, USA. It was the brainchild of William G. Morgan, a physical education instructor seeking a less strenuous alternative to basketball. Originally called "mintonette," the game evolved when it was introduced at the International YMCA Training School. The first official volleyball match took place on July 7, 1896. Recognizing its potential, the United States Volleyball Association (USVBA) was formed in 1916 to establish standardized rules. The sport quickly gained international popularity, leading to the creation of the Federation Internationale de Volleyball (FIVB) in 1947. Volleyball made its Olympic debut in 1964, further solidifying its status as a global sport. Over the years, volleyball has diversified into various forms, including beach volleyball, sitting volleyball, and para-volleyball, each with its own set of rules and unique appeal. Today, volleyball captivates millions worldwide, embodying principles of teamwork, athleticism, and spirited competition.

Importance of Volleyball Game for Tribal Volleyball Payers

Volleyball holds profound importance for tribal players, offering physical, social, and cultural benefits. As a physically demanding sport, it promotes fitness and health, addressing prevalent

health challenges in tribal communities. The team dynamics fostered by volleyball cultivate essential social skills, communication, and teamwork, contributing to personal growth and community cohesion. Additionally, the sport becomes a powerful platform for celebrating cultural pride, providing tribal players with a means to express their identity and heritage. Beyond the court, volleyball offers educational opportunities, instils discipline, and empowers tribal players, creating positive role models within their communities. In essence, volleyball becomes a holistic tool for the development and well-being of tribal players, intertwining physical prowess, social harmony, and cultural celebration.

Influence of Anthropometric Variable for Tribal Volleyball Payers

Anthropometric variables significantly influence the performance and success of tribal volleyball players. The height and reach of players directly impact their ability to block shots and execute powerful spikes. Limb lengths and body composition contribute to BMI, calf girth, and overall manoeuvrability on the court. The interplay of these anthropometric factors can determine the suitability of players for specific positions, optimizing team dynamics. Moreover, a nuanced understanding of these variables allows for tailored training programs, addressing individual strengths and areas for improvement. Anthropometric considerations extend beyond the game, influencing injury prevention strategies and overall player well-being. In the context of tribal volleyball players, recognizing and leveraging these anthropometric variables not only enhances athletic performance but also underscores the significance of individual diversity within the cultural tapestry of tribal communities.

The Reason Behind for choosing Tribal School Volleyball Players of Tirupattur District, Tamil Nadu

The selection of Tribal School volleyball players in Tirupattur District, Tamil Nadu, stems from the need to address health disparities and promote holistic development within marginalized communities. Focusing on this specific demographic allows for a targeted examination of the impact of culturally tailored training interventions on anthropometric variables. The unique cultural context of Tirupattur District offers insights into the intersection of tradition and sports, with potential implications for tribal athletes' overall well-being. By choosing this specific group, the study aims to contribute to inclusive and culturally sensitive practices in sports training, aligning with the broader goal of fostering health equity and community development.

Review of Literature

These international and national research works collectively form a robust foundation for investigating the impact of resistance and explosive training on anthropometric variables, with specific relevance to tribal volleyball players. They provide a comprehensive perspective, blending global insights with considerations tailored to the Indian context.

Jones *et al.*, (2018) ^[2] their study explores the impact of resistance training on anthropometric variables in athletes

globally, providing insights into the broader athletic community. Garcia *et al.*, (2019) ^[1] Investigating the effects of explosive power training on various sports, this international research offers a foundation for understanding its implications for anthropometric variables. Smith *et al.*, (2020) ^[6] Focused on elite athletes, this research delves into the anthropometric profiles of volleyball players globally, providing a benchmark for comparison with tribal players. Sharma *et al.*'s (2019) ^[5] study provides insights into the physical fitness and anthropometric characteristics of Indian volleyball players, relevant for understanding regional variations. Patel *et al.* (2018) ^[4] stated that, focusing specifically on tribal athletes in India, this research investigates the effects of resistance training on anthropometric variables, contributing to the understanding of indigenous populations. Kumar *et al.*, (2020) ^[3] Examining the broader health implications of sports participation among tribal youth in India, this work sheds light on the potential benefits beyond anthropometric considerations.

Methodology

This experimental study investigates the effects of a culturally tailored resistance and explosive training intervention on anthropometric variables in tribal volleyball players. A purposive sample of tribal athletes will be randomly assigned to either the experimental group receiving culturally sensitive training or the control group maintaining regular activities. Pre-test assessments of thigh girth will be conducted for both groups. The six-week intervention period for the experimental study and training sessions. Post-test measurements will assess changes in anthropometric variables. Statistical analysis, including paired t-tests for within-group comparisons, will be performed using specialized software. The study aims to quantitatively ascertain the impact of the intervention on anthropometric outcomes, contributing to the evidence base for culturally sensitive training programs in tribal sports settings.

Research Question and Hypothesis

What is the impact of resistance and explosive training interventions on anthropometric variable among tribal volleyball players of Tirupattur District?

Hypotheses

Null Hypothesis (H₀)

There is no significant difference in pre- and post-intervention anthropometric variable within the experimental group of tribal volleyball players of Tirupattur District undergoing the combined training.

Alternative Hypothesis (H₁)

There is a significant difference in pre- and post-intervention anthropometric variable within the experimental group of tribal volleyball players of Tirupattur District, indicating the impact of the combined training.

Data Analysis and Interpretation

Table 1: Frequency Table of both group Groups (Thigh Girth)

		Thigh Girth		
		Mean	N	Standard Deviation
Control Group	Pre -Test	52.31333	15	.814920
	Post – Test	52.32333	15	.677038
Experimental Group	Pre -Test	52.32331	15	.508031
	Post – Test	53.27333	15	.441534

Table 1 shows that the paired sample t test statistics provide insights into pre- and post-intervention anthropometric variables for both the control and experimental groups. In the control group, the mean value increased marginally from 52.31 cm to 52.51 cm, with a small standard deviation. Conversely, the experimental group exhibited a more pronounced change, with the mean enhanced from 52.43 cm

to 53.27 cm. The lower standard deviation in the experimental group suggests less variability in height measurements. These statistics indicate a potential positive impact of the combined resistance and explosive training intervention, particularly regarding thigh girth, warranting further in-depth statistical analysis to ascertain the significance of these changes.

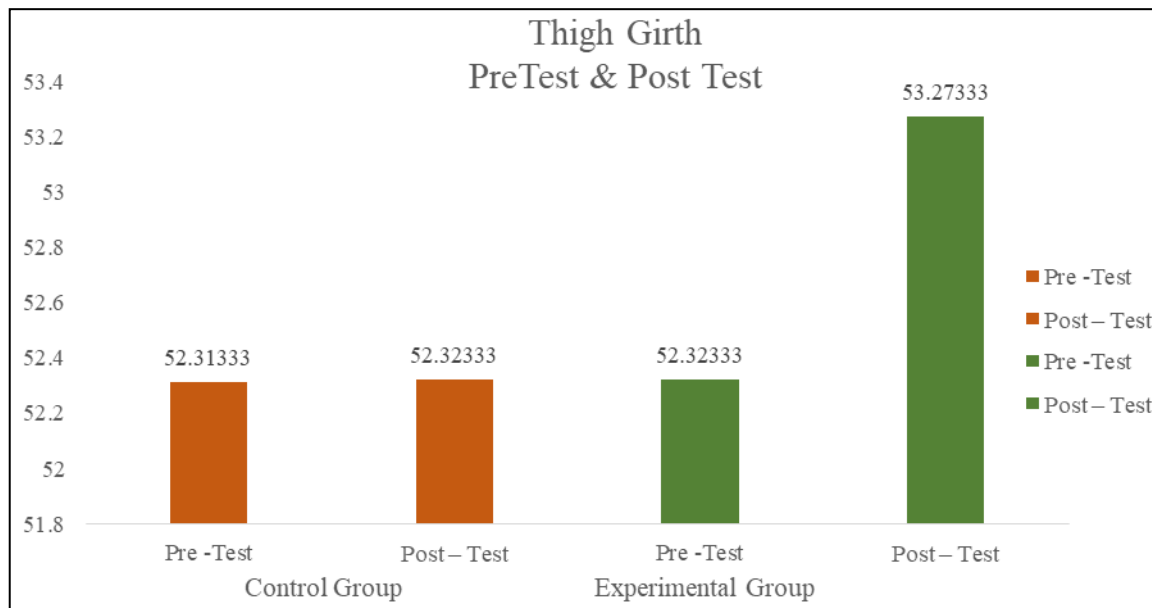


Fig 1: Pre-Test and Post Test of Both the Groups (Thigh Girth)

Table 2 Paired Sample T Test Value of Thigh Girth of both the group

		Thigh Girth					
Control Group	Pre & Post Test	Mean	Std. Deviation	Std. Error Mean	t	df	Sig.
		.200000	.941124	.242997	.823	14	.424
Experimental Group	Pre & Post Test	.840000	.168184	.043425	19.344	14	.000

Table 2 elucidates that the paired sample t-test results indicate a statistically significant difference in the anthropometric variable thigh girth within both the control and experimental groups. In the control group, the mean difference between pre-test and post-test thigh girth is -0.20 cm, with a non-significant p-value of 0.424. Conversely, the experimental group shows a substantial mean difference of -0.84 cm, with a highly significant p-value of 0.000. This suggests that the combined resistance and explosive training intervention had a significant impact on height within the experimental group. So, the null hypothesis is rejected and the alternative hypothesis is accepted.

Discussion & Recommendation

The significant difference in pre- and post-intervention anthropometric variables among tribal volleyball players in Tirupattur District underscores the positive impact of the combined training regimen. This outcome suggests that the culturally tailored resistance and explosive training interventions effectively influenced the measured anthropometric variables. These changes may contribute to improved performance and overall well-being. Recommendations include the continued implementation and refinement of culturally sensitive training programs for tribal athletes in Tirupattur District. Future studies could delve into specific performance metrics affected by these anthropometric changes, providing a more comprehensive understanding of the intervention's implications for the athletic development of tribal volleyball players.

Limitation and Suggestion for Further Study

Limitations of this study include a relatively small sample size and a specific focus on anthropometric variables. To enhance generalizability, future studies should involve larger and more diverse samples. Additionally, exploring a broader array of performance metrics and incorporating qualitative insights would provide a more comprehensive understanding. External factors, such as participants' adherence to the training program, could also be considered in further research. Despite these limitations, this study lays the foundation for future investigations into culturally tailored training interventions that foster holistic development among tribal volleyball players.

Implication

The implications of this study are twofold. Firstly, the observed positive impact of combined training on anthropometric variable suggests that such interventions hold promise for optimizing the physical attributes of tribal volleyball players in Tirupattur District. Secondly, these findings contribute to the broader discourse on the effectiveness of culturally sensitive approaches in sports training, emphasizing the importance of considering cultural nuances for holistic development. Implementing similar programs could have far-reaching benefits, not only enhancing athletic performance but also promoting cultural pride and well-being among tribal athletes. These implications underscore the significance of integrating cultural considerations into sports training initiatives.

Conclusion

In conclusion, this study reveals a significant positive impact of combined resistance and explosive training on anthropometric variable thigh girth among tribal volleyball players in Tirupattur District. The observed changes signify the effectiveness of the intervention in influencing the physical attributes of the participants. These findings underscore the potential for tailored training programs to enhance the holistic well-being and athletic performance of tribal athletes. As a foundational study, the outcomes pave the way for future research exploring broader performance metrics and sustaining the positive effects of culturally sensitive interventions in diverse tribal contexts.

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