

## Volleyball Training Programs and Athletic Endurance among Selected Urban College Athletes of Henan, China



Zhang Wei

Graduate School, Emilio Aguinaldo College, Paco, Manila, Philippines

**ABSTRACT:** The current research examined a volleyball program at an urban college in Henan, China, including performance indicators, course content and methodologies of teaching and assessment of athletes. The assessment provided program effectiveness in terms of addressing structural barriers, utilizing mental skills training strategies, embracing digital technologies, using competition-based approaches to training methods as well as injury prevention behaviors and coaching techniques. This indicates psychological training is beneficial on the plyometric endurance and also stresses the important role of mental performance in physical tasks. However, an excessive reliance on digital technology was detrimental to sport-specific conditioning in endurance, showing a need for well-balanced training.

**KEYWORDS:** volleyball training programs, athletic endurance, Urban college athletes, Henan, China

### I. INTRODUCTION

Volleyball, a high-intensity sport requiring explosive force, agility, and endurance, is well known to call for long-term training programs exceeding traditional physical conditioning. Many factors have affected the evolution of these initiatives, including advances in sports science, the integration of psychological training, and the use of new pedagogical strategies in academic institutions (Yang, 2017).

The training in this sport has changed dramatically over the years. Now, it emphasizes more scientifically based techniques catered to the particular needs of athletes. Metropolitan campuses, where the demand for excellence in competitive sports is strong and the value of well-organized training programs is vital, exhibit especially this change. Studies show that volleyball performance depends mostly on endurance, particularly in long matches that test mental as well as physical stamina ((Li, Zhang, & Chen, 2016)). Therefore, reaching ideal athletic performance depends on the development and implementation of training programs enhancing endurance while lowering injury risk.

Volleyball training programs denote the organized and methodical strategies employed to improve diverse physical and technical facets of volleyball performance. Usually aiming at improving an athlete's performance on the court, these programs include strength training, plyometric workouts, skill drills, and conditioning routines. Good volleyball training regimens in China should, according to Gao (2008), combine physical fitness, tactical expertise, psychological resilience, and injury avoidance. This comprehensive approach ensures that athletes are fit for the demanding requirements of competitive performance.

An athlete's ability to maintain performance levels for long periods of time without significant exhaustion by means of sustained physical effort is known as athletic endurance. Because volleyball requires frequent high-intensity actions—including jumping, spiking, and fast directional shifts—typically over long bouts—endurance is crucial. Li and Zhang (2016) stress the need of endurance in volleyball since players with better endurance are more likely to maintain their performance for the course of a match, maybe spanning five sets. Thus, the study depends on the interaction of these two variables.

The correlation between these two variables is essential to the research. Jiang, Zhao, and Jin (2021) assert that including psychological training into volleyball regimens improves physical endurance and strengthens mental resilience, enabling athletes to manage competitive stress more efficiently. The simultaneous emphasis on physical and mental training is increasingly acknowledged in Chinese sports education as essential for attaining enduring athletic performance.

This study investigates the effect of volleyball training programs on athletic endurance in selected urban college athletes in Henan, aiming to offer insights that can enhance training regimens and overall volleyball performance. The results may enhance the existing knowledge in sports science and guide future training methodologies in China and elsewhere.

Furthermore, the incorporation of psychological training into volleyball regimens is acknowledged as a crucial factor in enhancing athletes' overall performance. Research demonstrates that psychological resilience and mental readiness can profoundly influence an athlete's capacity to sustain endurance under competitive duress (Jiang, Zhao, & Jin, 2021). This comprehensive methodology,

## **Volleyball Training Programs and Athletic Endurance among Selected Urban College Athletes of Henan, China**

integrating physical conditioning with mental training, is progressively being embraced by institutions throughout Henan, indicative of a wider trend in Chinese sports education.

As urban universities in Henan emphasize the cultivation of elite volleyball athletes, comprehending the correlation between training regimens and athletic endurance is essential. This study seeks to examine the effects of these training regimens on the endurance levels of specific college athletes, offering insights that may enhance future practices and promote the progress of volleyball training in China.

### **RESEARCH QUESTION**

Is there a significant correlation between assessment of the student-athletes on current state of the volleyball training program and the present level of endurance among volleyball athletes of the University?

### **II. METHODOLOGY**

The assessment of volleyball training program and athletic endurance of student-athletes at urban colleges situated in Henan, China is investigated in this paper. Using a quantitative comparative correlational approach, the study centers on a sample of three hundred college students drawn from Henan University of Urban Construction. The questionnaire was used as a method to gather participants' opinions of the volleyball training program and degrees of athletic endurance, therefore gathering quantitative information. Multiple statistical techniques like frequency counts, percentage computations, weighted averages, standard deviations, T-tests or ANOVA, and Pearson's correlation coefficient were applied in data analysis. The study used a significance level of 0.05 for statistical analysis, therefore preserving consistency and comparability among the participants. The findings provide important clarity of the relationship between endurance levels in student-athletes and training regimes.

### **III. RESULTS AND DISCUSSION**

1. The study's respondents' profile shows a varied group of student-athletes, most of them are male, which points to a little gender disparity within the volleyball program. The respondents, who mostly fall between the usual college-age range of 18–22 years, suggest that the study subjects are early on in their path of higher education. Regarding educational background, most respondents have finished high school; some are presently pursuing or have previously earned college degrees, therefore displaying a mixed intellectual development among the athletes.
2. The evaluation of the present situation of the volleyball training program exposes various important information. Although there is always room for improvement, especially with relation to infrastructure and logistical assistance, the program is seen as successful in tackling structural obstacles. Athletes who claim improved mental resilience and general performance indicate that psychological training is effectively included into the program. Although the training program makes use of digital technology, its effects on endurance vary and imply that a mixed strategy between technology use and conventional training approaches could be required. Especially for their ability to equip athletes for the demands of actual matches, competition-based training approaches are generally appreciated. Although they do not seem to have much impact on endurance levels, injury prevention strategies are regarded as crucial. Although coach development is valued, to maximize its effects it could be necessary to link more with endurance training goals.
3. The current degree of endurance among students of the volleyball program differs depending on several training aspects. Although it is thought to be less effective than other training components, concurrent strength-endurance training is scored well. A vital component of the athletes' conditioning program, plyometric exercise is quite successful especially in enhancing explosive power and general endurance. Additionally seen favorably are flexibility and mobility training, which help to increase agility and lower risk of injury. With athletes claiming improvements in their energy levels and general endurance from appropriate dietary guidance, nutritional supplementation is clearly essential.
4. Most of the correlations between the present level of endurance and the evaluation of the volleyball training program show to be not significant. A few notable correlations, though, show that some features of the training program do affect endurance. The relevance of mental resilience in improving physical performance is shown by the favorable correlation between psychological training integration and plyometric endurance. Conversely, the use of digital technologies exhibits a negative link with endurance-specific conditioning, implying that an over-reliance on technology may reduce the physical intensity needed for effective conditioning.

### **IV. CONCLUSION**

The findings of this study reflects the strengths and weaknesses in terms of the effectiveness level of volleyball training program on student-athletes. As indicated in the demographic profile, there was a gender imbalance and that respondents are early on in their academic and athletic careers which aids in context of understanding developmental needs. The results show success for the training program in developing mental fortitude and improved holistic performance, although infrastructure deficiencies and inconsistent operationalization of technology suggest that there is more work to be done. Particular elements of training — plyometrics,

## Volleyball Training Programs and Athletic Endurance among Selected Urban College Athletes of Henan, China

flexibility training and nutrition — help increase endurance, even if not all connections between program components and levels of endurance are significant. Specifically, psychological training is beneficial to endurance re-training, while a heavy reliance on digital technology may compromise specificity of the re-conditioning process. This information indicates that balance remains the key to successful program. These findings suggest that while the approach involves broad changes, especially regarding how to integrate coaching and endurance goals into an overall training program sequence (adaptation–targeted adjustments), targeted adjustments should be performed to maximize performance and/or endurance in specific situations.

### REFERENCES

- 1) Gao, Q. (2008). A review of some ideas on volleyball training in China. *Journal of Beijing Sport University*.
- 2) Jiang, W., Zhao, K., & Jin, X. (2021). Diagnosis model of volleyball skills and tactics based on artificial neural network. *Mobile Information Systems*, 2021, 7908897.
- 3) Li, Y., Zhang, T., & Chen, Q. (2016). Research on the Key Issues in the Modern Volleyball Athletic Training. In *Proceedings of the 4th International Conference on Management Science, Education Technology, Arts, Social Science and Economics 2016*. Atlantis Press. <https://doi.org/10.2991/msetasse-16.2016.421>
- 4) Yang, J. (2017). Exploration for Applying Psychological Training in Volleyball Teaching in University. In *Advances in Social Science, Education and Humanities Research: Proceedings of the 2017 International Conference on Humanities Science, Management and Education Technology (HSMET 2017)*. Atlantis Press. <https://doi.org/10.2991/hsmet-17.2017.67>



There is an Open Access article, distributed under the term of the Creative Commons Attribution – Non Commercial 4.0 International (CC BY-NC 4.0)

(<https://creativecommons.org/licenses/by-nc/4.0/>), which permits remixing, adapting and building upon the work for non-commercial use, provided the original work is properly cited.