# INTERNATIONAL GRADUATE COLLOQUIUM *j*-SPEAK2025

SPORTS AND PHYSICAL EXERCISE ASSEMBLY OF KNOWLEDGE SHARING

COLLOQUIUM PROCEEDINGS

## EXTENDED ABSTRACT

EDITOR ADAM LINOBY

### HEXAGONAL OBSTACLE DRILLS ENHANCE EXPLOSIVE POWER AND AGILITY IN MARTIAL ARTS ATHLETES

Muhamad Syafiq, Adam Linoby, Razif Sazali, Yusandra Md Yusoff, Amrun Haziq, & Muhammad Zulqarnain\* Faculty of Sports Science and Recreation, Universiti Teknologi MARA, Negeri Sembilan Branch, Seremban Campus, Negeri Sembilan, MALAYSIA \*Corresponding author: zulqarnain9837@uitm.edu.my

Keywords: Hexagon Obstacle Drill, Martial arts performance, Power, Agility, Combat sports training, Athletic development

#### I. INTRODUCTION

This study investigates the effects of Hexagon Obstacle Drills (HOD) on explosive power and agility among martial arts student-athletes. Addressing gaps in combat sports research, it explores HOD's potential to enhance lateral movement, agility, and power development, offering tailored, evidence-based training insights [1].

#### II. Methods

This experimental study employed pre- and post-tests with 20 martial arts student-athletes divided into control and experimental groups. The HOD was implemented with intensity and complexity tailored to participants. Explosive power and agility were measured using Vertical Jump and T-Tests, respectively. Data were analyzed using independent T-tests to evaluate HOD's effectiveness on martial arts performance [2].

#### III. RESULTS AND DISCUSSION

#### A. Power

The experimental group showed a significant improvement in vertical jump performance  $(3.30 \pm 1.42, p < 0.001)$  compared to the control group  $(0.80 \pm 0.79)$ . This indicates that the HOD effectively enhanced explosive power (Figure 1).



Fig. 1 Comparison of Power Scores Between Experimental and Control Groups.

#### B. Agility

The experimental group demonstrated a significant improvement in agility (mean change score = -1.3760, SD = 0.96189, p = 0.001) compared to the control group (mean change score = 0.1120, SD = 0.57677). These findings confirm that HOD training resulted in meaningful improvements in agility (Figure 2).



Fig. 2 Comparison of Agility Scores Between Experimental and Control Groups.

#### IV. CONCLUSIONS

Hexagonal Obstacle Drills (HOD) significantly enhanced explosive power and agility among martial arts student-athletes. The results highlight its effectiveness as a sport-specific training method, emphasizing its potential for optimizing key athletic attributes in martial arts.

#### ACKNOWLEDGMENT

The authors gratefully acknowledge martial arts student-athletes of UiTM Seremban 3, and colleagues; Amirah, Dina, and Ameer for their support.

#### References

- Saputra, A. A., & Muzaffar, A. (2019). The Effects of Plyometric Training and Age on The Agility of Silat Fighters. Advances in Social Science, Education and Humanities Research, 278, 443-446..
- [2] Milanović, Z., Sporiš, G., Trajković, N., James, N., & Šamija, K. (2013). The relationship between agility, linear sprinting, and vertical jump performance in young and professional soccer players. Journal of Strength and Conditioning Research, 27(12), 3497-3503.

M., Syafiq, et al., Proceedings of the International Graduate Colloquium: Sports and Physical Exercise Assembly of Knowledge Sharing, i-SPEAK, 2025, 05th–06th February, Malaysia.