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COMPETITIVE EXPERIENCE AND TALENT IN ELITE AMERICAN TAEKWONDO ATHLETES

EXPERIENCIA COMPETITIVA Y TALENTO EN ATLETAS DE TAEKWONDO DE ÉLITE ESTADOUNIDENSES

Guillermo Andrés Sáez Abello[1]; Andrés Mauricio Ariza Viviescas[2]; Paul Sebastián Once Saca[3]; Felipe Andrés Rosas Treuque[4]

1. Dirección electrónica: investigacionesaez@hotmail.com Filiación institucional: Centro de investigación y capacitación EducaTKD Grado académico: PhD en educación ORCID: https://orcid.org/0000-0003-2711-4190
2. Dirección electrónica: andrecio1@hotmail.com Filiación institucional: Centro de investigación y capacitación EDUCATKD Grado académico: Msc (c) en ciencias del deporte ORCID: https://orcid.org/0000-0002-3157-9575
3. Dirección electrónica: paul11@gmail.com Filiación institucional: Centro de Entrenamiento e Investigación Educatkd. Grado académico: MSc en Educación Física y Entrenamiento Deportivo, ORCID: https://orcid.org/0009-0007-6615-0684
4. Dirección electrónica: Feliperosastreuqe@gmail.com Filiación institucional: Centro de Entrenamiento e Investigación Educatkd. Grado académico: Técnico Superior en Preparación Física. ORCID: https://orcid.org/0009-0004-2021-9162

ABSTRACT

Introduction: Prolonged participation in sports competitions is significantly associated with improvements in athletic performance and skills. **Objective:** To determine the relationship between competitive experience and athletic talent in elite taekwondo athletes. **Methodology:** A quantitative, observational study with a quasi-experimental design and a descriptive-correlational scope was conducted. The sample included elite taekwondo athletes who participated in training camps organized by the national federation USA Taekwondo (USAT) during the year 2023. Competitive experience was defined as the total number of competitions in which an athlete had participated throughout their sports career. Athletic talent, on the other hand, was assessed based on each athlete's position in the USAT national ranking. **Results:** Pearson's correlation analysis revealed a statistically significant and inversely proportional relationship between competitive experience and athletic talent ($p < 0.000$), suggesting that a higher number of competitions is associated with a better ranking (closer to the 1st position) in the USAT system. **Conclusion:** A statistically significant relationship was found between competitive experience and athletic talent. The evidence suggests that greater experience in competitions enhances competitive success and

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technical skill development in this discipline. Participation in competitions provides taekwondo athletes with opportunities to receive direct feedback on their performance, allowing them to adjust and refine their skills over time.

Keywords: Competitive experience, athletic talent, taekwondo, elite athletes

RESUMEN

Introducción: La participación prolongada en competencias deportivas se asocia de manera significativa con mejoras en el rendimiento y las habilidades atléticas. **Objetivo:** Determinar la relación entre la experiencia en competiciones y el talento deportivo en deportistas élite de taekwondo. **Metodología:** e llevó a cabo un estudio cuantitativo, observacional, con diseño cuasi-experimental y alcance descriptivo-correlacional. La muestra incluyó atletas élite de taekwondo que participaron en campamentos organizados por la federación nacional USA Taekwondo (USAT) durante el año 2023. La experiencia competitiva fue tenida en cuenta como el número de competencias deportivas participadas durante toda la carrera deportiva del atleta. El talento deportivo por su parte fue considerado como la posición del ranking nacional de la USAT. **Resultados:** Después del análisis de correlación de Pearson de las variables clave de este estudio se pudo determinar, una correlación inversamente proporcional y estadísticamente significativa entre la experiencia competitiva y el talento deportivo p>0,000 lo que sugiere que una mayor experiencia competitiva (mayor número de participación en competencias) se relaciona con una posición más baja (cercana a la 1° posición) en el ranking de la USAT. **Conclusión:** Finalmente se pudo determinar una relación significativa entre la experiencia competitiva y el talento deportivo, la evidencia sugiere que una mayor experiencia en competiciones favorece el éxito competitivo y un mayor nivel de habilidad técnica en esta disciplina ya que través de la participación en competiciones, los taekwondistas tienen la oportunidad de recibir retroalimentación directa sobre su desempeño, lo que les permite ajustar y perfeccionar sus habilidades.

Palabras clave: Experiencia competitiva, talento deportivo, taekwondistas, atletas de elite

INTRODUCTION

In sports, there exists a hierarchy or systematic classification known as the sports ranking, which is used to determine and order

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teams, players, or individual competitors based on their performance in a specific season, event, or competition. The primary objective of sports ranking is to provide an objective and comparative measure of participants' performance (Müller, 2018). The ranking is established using various criteria such as the number of wins, losses, draws, scores, or times, depending on the specific sport. These criteria are weighted and used to calculate each athlete's relative position in the ranking (Müller, 2018; Spiegelman, 2015).

in addition, rankings are a fundamental tool for evaluating the relative success of teams or athletes and determining their position in comparison to other competitors (spiegelman, 2015). they also help establish a hierarchy among athletes or teams based on their level of competence, identifying top performers and fostering competitiveness. according to johnson (2017), sports rankings play a crucial role in the structure of sport, as they allow both fans and participants to understand who the best performers are. furthermore, rankings influence athlete selection for tournaments, access to high-performance competitions, and even sponsorship opportunities, making them a key factor in an athlete's professional development (johnson, 2017; hanton et al., 2008).

In taekwondo in the United States, various organizations and associations oversee and maintain athletes' rankings. For example, the United States National Taekwondo Association (USA Taekwondo) is the recognized national organization for taekwondo in the country. According to USA Taekwondo, the ranking is determined through a points system accumulated by athletes in nationally and internationally recognized competitions. These points are earned based on competition results and the weight category in which athletes compete. Those achieving good results in high-level events accumulate more points and ascend in the ranking (Usa Taekwondo, s.f.). It should be emphasized that rankings may vary according to the organization and division (such as age, gender, and weight). Some associations also have their own ranking systems and criteria for determining rankings (Usa Taekwondo, s.f.). Across different countries and sports, the structure of ranking systems varies some prioritize recent performance, others emphasize long-term consistency, and certain systems, such as in

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tennis or judo, include rolling-point systems or performance tiers. (Müller, 2018)

Comparative perspectives also reveal that sports like athletics, swimming, or tennis have classification models different from taekwondo. For instance, global federations like World Athletics use qualifying standards and seasonal bests, while the ATP in tennis uses a 52-week rolling points system. These contrasts highlight that while rankings aim to reflect performance, the methods differ in how they weight competitions and consistency, which can shape athletes' career trajectories differently depending on the sport. (Müller, 2018)

Competitive experience plays a fundamental role in the development and performance of athletes, contributing to improvements in their rankings. Previous studies have shown that participation in sports competitions over time is associated with significant enhancements in athletic performance and ability (Smith, 2019). These improvements are attributed to repeated exposure to various competitive environments, which allows athletes to develop specific skills and learn to manage stress and competitive pressure. Furthermore, the literature has shown that competitive experience is related to greater development of psychological skills such as motivation, self-confidence, and resilience. A study by Junli et al. (2021) found that athletes with more competition experience exhibited higher levels of intrinsic motivation and self-confidence, enabling them to face competitive challenges more effectively. In this sense, continued participation in sports competitions provides athletes with the opportunity to improve performance, develop sport-specific skills, and strengthen their competitive mindset (Junli et al., 2021).

The association between competitive experience and athletic performance has been widely studied. Participation in sports competitions over time has been consistently linked to outstanding athletic performance (Macnamara et al., 2016). This is attributed to the fact that repeated exposure to competitive situations provides athletes with the opportunity to develop the technical, tactical, and mental skills needed to overcome challenges that arise during competitions (Macnamara et al., 2016). Furthermore, several studies support this relationship. For example, Warner and Dixon (2015) found that athletes with greater competitive experience demonstrated stronger performance compared to those with less

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experience. In addition, a study by Macalta and Hopkins (2014) identified that athletes who had participated in a greater number of sports competitions achieved better results in terms of scores and overall performance. This body of evidence highlights the importance of competitive experience in enhancing athletic performance and, consequently, improving athletes' rankings (Macalta & Hopkins, 2014).

Through competition, athletes experience pressure, stress, and unpredictable situations, which allow them to develop their ability to face these circumstances and make effective decisions at the right moment. Competing also provides athletes with valuable feedback on their current performance, helping them identify their strengths and areas for improvement (Gonzalez et al., 2017; Barajona & Ójeda, 2019). This aligns with the findings of Weinberg et al. (1993), who state that participating in sports competitions allows athletes to assess their performance in comparison to other competitors, identify gaps in their performance, and set goals for future development. This constant feedback and learning from competition contribute to the growth and continuous improvement of athletic performance (Weinberg et al., 1993).

On the other hand, it is common for less experienced athletes to be ranked lower in sports rankings. This is because rankings are based on the past and present performance of participants, and those with less experience generally have fewer opportunities to accumulate wins or notable achievements that would allow them to climb the rankings. As athletes gain more experience and participate in more competitions, they have the opportunity to achieve better results and improve their ranking position. Over time, if they demonstrate consistent performance and achieve good results, they are likely to move up in the rankings and reach higher positions (Spiegelman, 2015; Pifer et al., 2019).

It is important to note that an athlete's ranking position is not determined solely by experience. Other factors, such as individual athletic talent, dedication to the sport, training, and competitive ability, also influence a competitor's standing in the rankings. However, it should be noted that each sport and ranking system may have its own unique characteristics and specific classification criteria. Some ranking systems

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may consider long-term performance history, while others may focus more on recent results (Spiegelman, 2015; USA Taekwondo, n.d.; Gonzales, 2021). Additionally, certain sports may have separate categories or divisions for athletes with different levels of experience (García et al., 2018). Considering all of the above, the purpose of this study was to determine the relationship between competitive experience and athletic talent in elite taekwondo athletes.

METHODOLOGY

Design

A quantitative study was conducted using a quasi-experimental, cross-sectional observational design to identify and establish relationships among a group of high-level taekwondo practitioners. The purpose of the study was to describe and analyze correlations in participants who attended sports camps organized by the United States Taekwondo Association (USAT) during the second semester of 2023.

Population and Sample

The research included taekwondo athletes from different competitive categories. A non-probabilistic convenience sampling method was employed, meaning the participants were selected based on their availability and willingness to participate. While this approach facilitated access to a large number of athletes, it also limits the generalizability of the results to the broader taekwondo population. Inclusion criteria required athletes to be volunteers, affiliated with USAT, and to have completed all study procedures. Informed consent was obtained from legal guardians, and assent was secured from underage athletes through signed documentation. The final sample included 470 taekwondo athletes. Participants varied in age, competition level, and ranking category; however, a detailed distribution by these characteristics was not used as an inclusion filter.

Measurement Instruments

To assess sports talent, each athlete's position in the USAT national ranking was used, considering their specific category. Athletes ranked closer to the top were considered to

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demonstrate higher levels of talent. For competitive experience, the total number of official competitions or events in which the athlete had participated throughout their career was recorded.

Procedure

Data collection began after receiving formal authorization via letters sent to the directors of the taekwondo camps and the corresponding technical committee. Once permission was granted, participants were invited to an informative session where the study's goals, procedures, and expected outcomes were explained. Informed consent and assent forms were provided and signed. Sociodemographic data such as age, sex, and competition category were collected at this stage.

Measurements took place during morning hours at each camp, specifically during training periods when athletes were not engaged in competition. Sports talent data were collected through the most recent national ranking results provided by coaches affiliated with USAT. For competitive experience, athletes were asked to report the number of competitions they had participated in over their career. To reduce bias due to self-reporting, this information was validated with their respective coaches and compared, when possible, with available participation records. All participants had the opportunity to ask questions and received support during the process to ensure clear and accurate data collection. The information was later compiled into a secure database for analysis.

Ethical Considerations

The research was conducted in strict compliance with the ethical guidelines established by the Declaration of Helsinki (World Medical Association, 2013). Prior to their involvement, all participants received comprehensive information regarding the study's purpose, procedures, and their rights as research subjects, including voluntary participation and data protection measures. Written informed consent was obtained from each participant following this disclosure. To ensure confidentiality, all collected data were anonymized through the use of identification codes rather than personal identifiers throughout the research documentation.

Statistical Analysis

All data were initially recorded in Excel and later processed in SPSS Version 25.

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Categorical variables were described using frequencies and percentages. The Kolmogorov-Smirnov test was applied to verify the normality of distribution for samples larger than 50. Variables with a normal distribution were reported using means and standard deviations; non-normally distributed variables were reported using medians and interquartile ranges. To examine relationships between variables, Pearson's correlation coefficient was used, with statistical significance set at $p \leq 0.05$.

RESULTS

The sample consisted of 470 athletes affiliated with USAT, distributed across cadet (n=153), junior (n=149), and senior (n=168) categories. Regarding gender, there were 265 males (56.38%) and 205 females (43.62%), with a mean age of 15.28 ± 3.75 years (Table 1).

Table 1. *Sociodemographic characteristics*

Characteristics	N	%
Athletes' Gender		
Male	265	56,38
Female	205	43,62
Total	470	100
Athletes' Category		
Cadet	153	32,55
Junior	149	31,7
Senior	168	35,74
Total	470	100
	M	**SD**
Age of Athletes	15,28	±3,75

***Note**: M = mean; SD = standard deviation*

According to the results presented in Table 2, it can be observed that the key variables of this study exhibited a non-normal distribution, as their significance was $p<0.005$. Therefore, we reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1). Additionally, in graph 1, it can be observed through the histogram that the fundamental variables do not follow a normal distribution or a Gaussian bell-shaped curve.

Table 2. *Kolmogorov-Smirnov test*

Characteristics	N	Test Statistic	Significance
Sport talent	470	0,203	0,000
Competitive experience	470	0,093	0,000

The Kolmogorov-Smirnov normality test applied to the key variables revealed a non-normal distribution ($p < 0.001$ for both),

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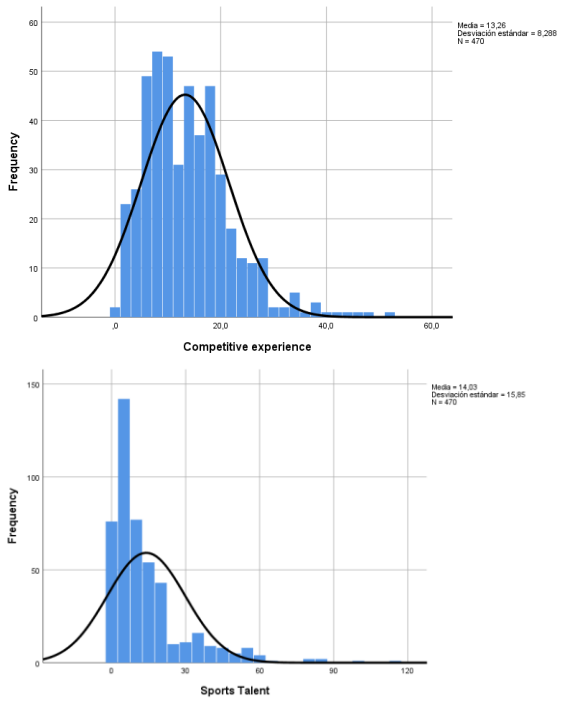
which was visually confirmed through histograms (Figure 1).

Figure 1. *Normality histograms*



Note: *Frequency distribution of competitive experience and sport talent. Both variables show a right-skewed distribution, indicating that most athletes have participated in few competitions and hold lower national rankings, while only a few exhibits extensive experience or top-level rankings.*

Measures of central tendency and dispersion showed that athletes had a median competitive experience of 12 events (IQR = 7.00–18.00) and a median sport talent score of 8.00 (IQR = 4.00–18.00), indicating a tendency toward high performance levels (Table 3).

Table 3. *Measures of central tendency and dispersion*

Characteristics	N	M	SD	ME	IQR
Sport talent	470	14,0	±15,85	8,00	P25=4,00; P75=18,00
Competitive experience	470	13,2	±8,23	12,00	P25= 7,00; P75=18,00

***Note**: M = mean; ME = median; SD = standard deviation; IQR = interquartile range; P25 = 25th percentile; P75 = 75th percentile.*

Pearson's correlation analysis revealed a significant negative relationship between competitive experience and sport talent ($r = -0.259$; $p < 0.000$), suggesting that a greater number of competitions is associated with better national rankings (Figure 2). Although this relationship is statistically significant, the coefficient of determination ($R^2 = 0.067$) indicates that competitive experience accounts for only 6.7% of the variability in sport talent.

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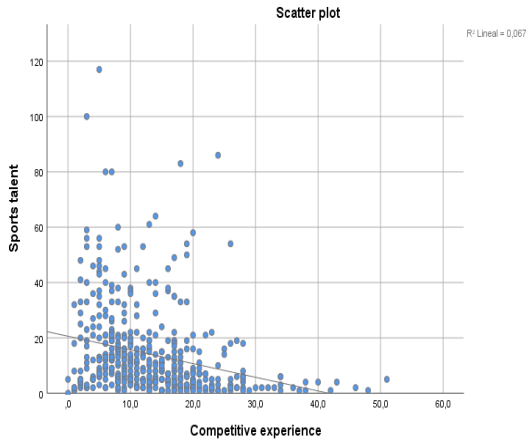
Table 4. *Pearson Correlation*

Characteristics	Sport Talent	
	Pearson's r Coefficient	P value
Competitive experience	-0,259	0,000*

Figure 2. *Scatter plot*



Note: *Scatter plot between competitive experience and sport talent. A mild but significant inverse relationship is observed (r = -0.259, p < 0.000)*

DISCUSSION

The purpose of this study was to determine the relationship between competitive experience and sports talent in elite taekwondo athletes. According to the findings, an inversely proportional and statistically significant relationship between these two variables was identified. In other words, the greater the competitive experience, the better the athlete's position in the ranking, with a better ranking understood as being closer to the top positions. Furthermore, the relationship between competitive experience and sports performance has been a topic studied in the scientific literature, and some researchers have examined how the accumulation of competition experience influences athletes' performance. (Laurin, et al., 2021, Kazemi, 2012, Zhang & Liu, 2022, Williams & Hodges, 2004). The findings of these studies provide strong evidence that greater competition experience is positively associated with better athletic talent. For example, a study conducted by Williams and Hodges (2004) found that athletes with greater competitive experience achieved better results in terms of sports performance compared to those with less experience. These results are consistent with the theory of learning and skill acquisition, which suggests that practice and experience are fundamental for the development and improvement of sports skills (Murayama & Elliot, 2012). Furthermore, research conducted by Ericsson et al. (1993) supports this relationship, indicating that athletes with more competition experience showed a higher level of skill

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automation, allowing them to execute movements more efficiently and accurately, resulting in better performance in competitions. (Ericcson, et al., 1993).

On the other hand, a notable study was carried out by Downs et al. (2014), who examined the relationship between competitive experience and sports performance in a sample of high-performance athletes. Their results showed that athletes with a more extensive competitive trajectory achieved significantly superior performance compared to those with less experience. This study, along with the others previously mentioned, supports the idea that greater competition experience is related to greater athletic talent. Repeated practice and exposure to competitive situations provide athletes with the opportunity to acquire and refine specific skills, as well as to develop effective strategies to face challenges and manage competitive pressure (Downs et al., 2014).

Taking into account all the points previously mentioned, it is evident that competitive experience is a crucial factor for the development and performance of taekwondo athletes (Casas et al., 2016). The relationship between these two constructs in taekwondo can be explained and summarized by various factors. Firstly, competitive experience gives taekwondo athletes the opportunity to face opponents of different levels and fighting styles, allowing them to develop effective strategies and acquire important tactical knowledge (Howells et al., 2017). Additionally, competition experience provides taekwondo athletes with greater familiarity with competitive circumstances, which can help them better manage the pressure and stress associated with competitions (Montalvo & González, 2014; Antiss et al., 2020). Taekwondo athletes gain in-depth knowledge of competition rules and norms, as well as a greater awareness of their strengths and areas for improvement (Hanton, et al., 2008). Through participation in competitions, taekwondo athletes have the opportunity to receive direct feedback on their performance, allowing them to adjust and refine their skills.

Limitations

One key limitation of this study lies in its purely descriptive-correlational approach, as it focused on presenting results without seeking to establish causal or cause-and-effect relationships among the findings. Despite this limitation, the study has a considerable sample of evaluated

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participants; however, it is recommended that future research be conducted on probabilistic samples to avoid compromising the external validity of the study. It is also suggested that future investigations adopt an explanatory approach seeking to establish causality between findings and include a comparison of experimental and control groups.

Practical Implications

From a practical standpoint, the results of this study highlight the importance of systematically increasing competitive exposure in the developmental pathways of taekwondo athletes. Coaches and sports organizations can use these insights to design training plans that include progressively challenging competition experiences. Federations and talent development programs should prioritize early and consistent competitive participation to enhance skill acquisition and psychological readiness. Furthermore, monitoring athletes' competitive histories can serve as a valuable tool for identifying potential talent and designing individualized development plans that align with long-term performance goals.

CONCLUSION

This study identified a significant relationship between the variables of competitive experience and sports talent in elite taekwondo athletes. The evidence suggests that greater exposure to competition is positively associated with greater technical proficiency and greater competitive success. These findings reinforce the importance of sustained practice and accumulated experience as key factors in sports development and performance optimization.

From a practical standpoint, these results underscore the need for coaches and sports institutions to intentionally incorporate competitive experiences into athletes' development plans. Structured exposure to diverse competitive environments can accelerate tactical learning, psychological readiness, and performance adaptation in taekwondo athletes.

While the findings are valuable, the study's descriptive-correlational nature limits causal inference. Future research should consider longitudinal or experimental designs to further explore the mechanisms linking competition experience with performance outcomes. Additionally, investigating this

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relationship across different levels of expertise, age groups, or cultural contexts could provide a more comprehensive understanding of how experience shapes sports talent.

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Conflicts of Interest

The authors declare that there are no conflicts of interest.