

# Sleep for the Gold Medal: A Metaphorical Approach to Sleep and the Olympics in Elite Athletes: A Qualitative Study

Sueño para la medalla de oro: Una aproximación metafórica al sueño y los Juegos Olímpicos en atletas de élite: un estudio cualitativo

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## Ethics statement

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## Data availability

All data supporting the findings of this study are available within the article. For additional details, please contact the corresponding author.

## Abstract

**Introduction.** Elite athletes face unique sport-specific sleep demands critical for recovery and performance.

**Objective.** Understanding subjective sleep perceptions alongside pivotal motivational constructs like Olympic goals is essential for holistic athlete development. This study examined the metaphorical approaches of elite male artistic gymnasts to the topics of sleep and the Olympics within the framework of conceptual metaphor theory.

**Method.** This qualitative study used a phenomenological framework and thematic analysis, following COREQ guidelines. Forty-four male athletes (23 juniors, 21 seniors) from the Turkish national artistic gymnastics team were selected via purposive sampling during the 2025 training camps. Data were collected through semi-structured metaphor elicitation interviews (“Sleep/Olympics are like... because...”). Reliability was ensured through inter-coder reliability ( $\kappa = 0.94$  for sleep,  $\kappa = 0.90$  for Olympics).

**Results.** Analysis revealed four sleep-related experiences (Harmony, Retrofit, Essential, and Healthcare) and Olympic experiences (Summit, Existence, and Challenge). Marked developmental differences emerged: juniors predominantly used functional sleep metaphors while seniors employed holistic conceptualizations. Olympic metaphors diverged with juniors emphasizing Challenge and seniors focusing on Existence.

**Conclusion.** This study revealed that elite athletes’ perceptions of the Olympics and sleep diverge based on career stage. Olympic metaphors were conceptualized as Challenge for juniors and Existence for seniors, while sleep perception followed a developmental trajectory between functional and holistic poles. These findings demonstrate the value of metaphor analysis in uncovering implicit beliefs about performance and recovery within achievement goal theory. The study proposes implementing career-stage-specific interventions addressing both motivational and

#### Author Contributions

**Semih Karaman:** conceptualization, data curation, formal analysis, funding acquisition, investigation, methodology, project administration, resources, software, supervision, validation, visualization, writing – original draft, writing – review & editing.

#### Generative AI declaration

During the preparation of this manuscript, the author used DeepL and Gemini as generative artificial intelligence tools to support the translation of the manuscript. These tools were not used to generate scientific content, interpret results, create figures, or perform data analyses. The author carefully reviewed and edited the manuscript and takes full responsibility for the accuracy and integrity of the final content.

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psychophysiological needs in athlete development programs. Integrating phenomenological metaphor analysis into applied sport science contributes to qualitative methodology while establishing a foundation for future mixed-methods research.

#### Keywords

Elite athletes; sleep; sport psychology; performance; metaphor; qualitative research; gymnastics; concept formation; phenomena; processes.

#### Resumen

**Introducción.** Los atletas de élite enfrentan exigencias de sueño únicas y específicas de su deporte, las cuales son críticas para la recuperación y el rendimiento.

**Objetivo.** Comprender las percepciones subjetivas del sueño, junto con constructos motivacionales fundamentales como las metas olímpicas, resulta esencial para el desarrollo integral del atleta. Este estudio examinó los enfoques metafóricos de gimnastas artísticos masculinos de élite respecto al sueño y los Juegos Olímpicos, en el marco de la teoría de la metáfora conceptual.

**Método.** Este estudio cualitativo empleó un marco fenomenológico y un análisis temático, siguiendo las directrices COREQ. Se seleccionaron cuarenta y cuatro atletas masculinos (23 de categoría junior y 21 senior) del equipo nacional turco de gimnasia artística mediante un muestreo intencional durante los campamentos de entrenamiento de 2025. Los datos se recopilaron a través de entrevistas semiestructuradas de elicitación de metáforas (“El sueño/Los Juegos Olímpicos son como... porque...”). La fiabilidad se garantizó mediante la fiabilidad intercodificador ( $\kappa = 0,94$  para el sueño,  $\kappa = 0,90$  para los Juegos Olímpicos) y la verificación de los participantes.

**Resultados.** El análisis reveló experiencias relacionadas con el sueño (categorizadas como Armonía, Reacondicionamiento, Esencialidad y Cuidado de la Salud) y experiencias olímpicas (Cima, Existencia y Desafío). Surgieron marcadas diferencias evolutivas: los juniors utilizaron predominantemente metáforas funcionales del sueño, mientras que los seniors emplearon conceptualizaciones holísticas. Las metáforas olímpicas divergieron, con los juniors enfatizando el Desafío y los seniors centrándose en la Existencia.

**Conclusión.** Este estudio reveló que las percepciones de los atletas de élite sobre los Juegos Olímpicos y el sueño divergen según la etapa de su carrera. Las metáforas olímpicas se configuraron como Desafío para los juniors y Existencia para los seniors, mientras que la percepción del sueño siguió una trayectoria de desarrollo entre polos funcionales y holísticos. Estos hallazgos demuestran el valor del análisis de metáforas para descubrir creencias implícitas sobre el rendimiento y la recuperación dentro de la teoría de las metas de logro. El estudio propone implementar intervenciones específicas para cada etapa de la carrera que aborden tanto las necesidades motivacionales como las psicofisiológicas en los programas de desarrollo de atletas. La integración del análisis fenomenológico de metáforas en las ciencias del deporte aplicadas contribuye a la metodología cualitativa, al tiempo que establece una base para futuras investigaciones de métodos mixtos.

## Palabras clave

Atletas de élite; sueño; psicología del deporte; rendimiento; metáfora; investigación cualitativa; gimnasia; formación de conceptos; fenómenos; procesos.

## Introduction

The International Olympic Committee (IOC) has formally recognized sleep as a fundamental component of athletes' physical, mental, and emotional health, publishing its first consensus statement on the critical role of sleep in athletic performance [1]. The committee further emphasized the need for standardized, evidence-based approaches to address mental health symptoms and disorders among elite athletes. This declaration underscores the necessity for comprehensive investigations to establish robust guidelines. Despite the IOC's call for examining sleep patterns across different skill levels [2], no studies have yet explored sleep through metaphorical analysis in elite athletes. While some scholars have criticized the use of metaphorical language in research for being figurative, ambiguous, and imprecise, its generative potential remains undeniable. As Taylor and Dewsbury (2018) demonstrate, metaphors fundamentally enable theoretical frameworks [3]. In line with this requirement, the current literature confirms the decisive role of sleep on athletic performance with empirical data. The direct negative effects of acute sleep deprivation on physiological capacity [2] and the impairments it causes in cognitive processes such as reaction time and attention [4,5] have been conclusively demonstrated. However, there remains a communication gap regarding the integration of these technical findings into elite athletes' mental preparation processes. As Taylor and Dewsbury (2018) note, metaphors are not merely linguistic tools but theoretical frameworks that facilitate the conceptualisation of complex scientific data [3]. This study facilitates athlete's internalisation of technical data by transforming sleep-related data into cognitive schemas associated with the 'Gold Medal' objective through metaphorical analysis. Thus, this approach bridges the methodological gap between the evidence-based standards emphasised by the IOC [1] and the athletes' subjective perceptions of performance.

Sleep serves as a critical determinant of performance that enhances athletes' physical and mental resilience, ultimately optimizing competitive success in international arenas [5]. The Olympic Games represent the pinnacle of human athletic achievement, where superior physical and mental capabilities are showcased at the highest level [6]. For elite athletes pursuing Olympic medals, strategic sleep management must parallel their meticulous training regimens to maximize performance potential [5].

Recent research has increasingly highlighted sleep's critical role in athletic performance, cognitive function, health, and psychological well-being across diverse age groups and sports disciplines. Studies demonstrate sleep's capacity to enhance mental health [7], improve athletic performance [2,8], mitigate the performance-impairing effects of pre-competition environmental factors and optimize cognitive functioning [4]. Paradoxically, despite this evidence, sleep outcomes among elite and Olympic-level athletes remain suboptimal, contrasting with findings that athletes recognize sleep's functional importance for athletic performance and energy metabolism [4].

According to the IOC's hierarchical classification, all athletes competing at the Olympic, professional, and collegiate levels fall within the "elite" category [1]. In this study, regardless of the competition in which participants compete, the focus is placed on the high-performance expectations and mental preparation processes inherent to the elite level. This qualitative methodology examines the existing paradox by investigating whether the low sleep quality and limited awareness exhibited by elite athletes—despite the proven performance benefits of sleep—reflect attitudinal differences toward sleep [1,2,4]. For in sports science, metaphor

is not merely an ornamental element that describes knowledge; rather, it constitutes a fundamental epistemological architecture that maps abstract processes onto the realm of bodily experience (mesocosm), thereby enabling the mental construction of knowledge and making theory possible [2,3]. The epistemological and generational gap in how young and adult elite athletes perceive the concepts of ‘sleep’ and ‘the Olympics’ becomes evident precisely at this point: While sleep is conceptualized in young athletes solely within the context of cognitive development [4], in adult athletes it transforms into a vital recovery mechanism that determines mental health and performance [1,2,5]. In this context, to concretize the mental pressure generated by the Olympics —often described as the “greatest social spectacle”— [6] both age groups inevitably employ entirely different metaphorical mappings. Through systematic metaphor analysis, we explore elite male athletes’ conceptualization.

How do elite male gymnasts metaphorically conceptualize sleep?

How do elite male gymnasts metaphorically conceptualize the Olympics?

## Method

This study rigorously followed the Consolidated Criteria for Reporting Qualitative Research (COREQ) guidelines [9] to ensure transparent and systematic reporting of all qualitative research processes. Compliance with COREQ criteria during data collection, analysis, and presentation of findings served as the primary guarantee of methodological robustness and research reliability.

### Study design and study group

This study is grounded in the social constructivist paradigm, which posits that reality is constructed through individual experiences and social interactions. In this vein, the research approaches the phenomena of sleep and the Olympics not as biological data, but as subjective maps of meaning and cognitive schemas constructed by elite athletes through metaphors. Lakoff and Johnson’s Conceptual Metaphor Theory [10] formed the theoretical foundation for metaphor analysis, while thematic analysis was employed for data examination within a phenomenological framework.

Participants were selected through purposive sampling [11]. The study included:

- 23 Junior National Team Male Gymnasts
- 21 Senior National Team Male Gymnasts

All participants were members of the Turkish Olympic Male Gymnastics Team with elite status (having competed in at least one international competition), representing the complete target population. While all research questions were presented clearly to participants by the researcher, some chose not to respond to one of the two metaphor prompts. All participants provided informed consent.

### Inclusion Criteria

- Elite athlete (male athletes only) status
- Voluntary participation
- Turkish language proficiency
- Ability to produce metaphorical expressions

These criteria were established based on sports psychology literature and research ethics principles to ensure methodological integrity and data quality in examining Olympic preparation processes through metaphor analysis.

### **Researcher Role and Positionality**

The male researcher who led this study contributed to the research as an expert, thanks to his unique combination of professional and academic experience. He was a former national team athlete who had competed at the international level. He possesses first-hand knowledge of the demands of elite and Olympic-level sports. His expertise, focusing on the sleep-performance relationship in high-performance athletes, was supported by doctoral-level research placements at internationally renowned institutions such as the Faculty of Physical Education at the University of Krakow, the Faculty of Sport Sciences at the University of Ljubljana, and the Donders Institute at Radboud University. At these institutions, he conducted multidisciplinary research covering sleep science, athletic performance and athlete health. In addition, he further developed his expertise by completing advanced training and obtaining certifications in sleep studies at leading global institutions. His previous research with Olympic and elite athletes, combined with his current position as a PhD candidate and research assistant at the university, has shaped his methodological approach. The researcher, who has conducted phenomenological studies in the field of sports psychology, is experienced in in-depth interview techniques. He applied this experience to the data collection and analysis processes of the current study to ensure a meticulous examination of athletes' metaphorical representations of sleep and performance.

### **Data Collection**

Data were collected from members of the Turkish National Teams through face-to-face interviews conducted by the researcher. The semi-structured interview protocol included questions assessing participants' sociodemographic characteristics (age, competition category, and personal best athletic achievements) alongside open-ended metaphor elicitation items. The validity of this instrument for metaphor analysis has been empirically established in previous studies [12], with Dervent's (2016) work further confirming the methodological advantages of metaphorical analysis in revealing the multidimensional nature of sports concepts [13].

Participants were presented with standardized prompts following the format: "Sleep is like \_\_\_\_ because \_\_\_\_" and "The Olympics are like \_\_\_\_ because \_\_\_\_" to generate metaphorical expressions. Ample response time was provided to allow for thoughtful consideration, with completion typically requiring 10-20 minutes. Prior to administration, the researcher clearly explained all questions and instructions to participants without audio or video recording. All responses were analyzed using written documents obtained from one-to-one interviews. No revisions or additional opportunities to modify responses were permitted after form submission, maintaining protocol consistency across interviews. The data were recorded during the interviews and were not subsequently altered.

### **Data Analysis**

The data analysis process was conducted in three systematic phases:

Preliminary analysis involved compiling raw data from all 44 participants' metaphorical expressions.

Using thematic coding and content analysis, the study first distinguished metaphorical targets from their justifications, then grouped similar metaphors to identify four distinct main themes for sleep and three for the Olympics.

The present study employed a thematic coding approach utilising content analysis methodology. The analytical process was initiated by the separation of metaphorical targets from their respective justifications. A subsequent emergent coding process, utilising no predefined categories, was employed to generate five overarching themes: Harmony, Retrofit, Healthcare, Essential, and Summit.

The rigour of the methodological approach was ensured through several measures. Researcher triangulation was employed, and the perspectives of two external experts were sought. Member checking with participants was conducted, and all analytical procedures were reported transparently to enhance the trustworthiness of the findings. Furthermore, direct quotations from participants were anonymised in order to protect their identities.

In order to ensure the reliability of the coding, the inter-coder agreement was quantitatively assessed. The initial agreement between the primary researchers and external experts was calculated using Miles and Huberman's (1994) formula,  $\text{Reliability} = \frac{\text{Agreements}}{(\text{Agreements} + \text{Disagreements})}$ , resulting in an 88% agreement rate. In instances of conflicting opinions, the majority viewpoint was adopted as the guiding principle [14]. To further validate the findings, the metaphor list was sent to two additional experts, and Cohen's Kappa coefficient was calculated. The resulting coefficients were 0.94 for the "sleep" theme and 0.90 for the "Olympics" theme, both of which indicate an almost perfect level of agreement. In the event of any discrepancies arising during the coding process, these were resolved through consensus between the coders and a subsequent refinement of the coding manual.

To enhance internal validity, reliability, and objectivity, we implemented researcher triangulation [15] through three complementary approaches:

1. investigator triangulation involving the primary researcher and two independent external experts not otherwise affiliated with the study;
2. methodological triangulation through cross-verification of findings via member checking with participants;
3. data triangulation systematically comparing multiple data sources.

All data collection and analysis procedures were meticulously documented to ensure methodological transparency. Participant confidentiality was strictly maintained through anonymization of all identifiable information, with findings presented using direct verbatim quotations. Written informed consent was obtained from all participants prior to their involvement in the study, in full compliance with established ethical protocols. This study was reviewed and deemed ethically acceptable by a university's "Human Research Ethics Committee" (Protocol No. 2025/387) at its meeting No. 2025/06.

## Results

To provide a comprehensive overview of the sample's competitive achievements and the distribution of metaphorical data, including frequencies, percentages, and corresponding thematic categories related to sleep and the Olympics, the main results are presented in Tables 1 and 2.

Participants' (JNT = 23, SNT = 21) metaphors about "sleep" were grouped in four sub-themes (categories).

**Table 1.** The best tournament rankings of the sample group in their sports career.

| Medal Ranking | National Championship | Balkan Championship | European Championship or International Tournaments | World Championship | Olympic Games |
|---------------|-----------------------|---------------------|----------------------------------------------------|--------------------|---------------|
| 1.            | 2                     | 6                   | 2                                                  | 2                  | -             |
| 2.            | 4                     | 3                   | 5                                                  | 4                  | -             |
| 3.            | 1                     | -                   | 2                                                  | -                  | 1             |
| 4.            | -                     | -                   | -                                                  | -                  | -             |
| 5.            | -                     | -                   | -                                                  | 1                  | -             |

**Table 2.** Gymnasts' metaphors and categories related to Sleep and the Olympics.

| A. SLEEP                   | n         | %     | B. OLYMPIC               | n         | %     |
|----------------------------|-----------|-------|--------------------------|-----------|-------|
| <b>A1. Harmony</b>         | <b>18</b> |       | <b>B1. Summit</b>        | <b>16</b> |       |
| Resting                    | 8         | 44.44 | Top level                | 5         | 31.25 |
| Regeneration               | 2         | 11.11 | Top                      | 4         | 25    |
| Relaxation                 | 2         | 11.11 | Target                   | 3         | 18.75 |
| Wife/Spouse                | 1         | 5.56  | There's nothing more     | 1         | 6.25  |
| Reset                      | 1         | 5.56  | Superior                 | 1         | 6.25  |
| Recovery                   | 1         | 5.56  | Diamond                  | 1         | 6.25  |
| Meditation                 | 1         | 5.56  | Everest                  | 1         | 6.25  |
| Distancing from bad energy | 1         | 5.56  | <b>B2. Existence</b>     | <b>12</b> |       |
| Starting another life      | 1         | 5.56  | Dream                    | 9         | 75    |
| <b>A2. Retrofit</b>        | <b>8</b>  |       | Love                     | 1         | 8.33  |
| Recharge                   | 3         | 37.5  | Life                     | 1         | 8.33  |
| Sweet                      | 2         | 25    | Money                    | 1         | 8.33  |
| Gasoline                   | 1         | 12.5  | <b>B3. Challenge</b>     | <b>10</b> |       |
| Food                       | 1         | 12.5  | Competition              | 3         | 30    |
| Fuel                       | 1         | 12.5  | Exam                     | 2         | 20    |
| <b>A3. Healthcare</b>      | <b>10</b> |       | War                      | 2         | 20    |
| Medicine                   | 8         | 80    | Passion                  | 1         | 10    |
| Therapy                    | 1         | 10    | Victory                  | 1         | 10    |
| Treatment                  | 1         | 10    | The Biggest Organization | 1         | 10    |
| <b>A4. Essential</b>       | <b>7</b>  |       |                          |           |       |
| Important                  | 3         | 14.29 |                          |           |       |
| Way of life                | 1         | 14.29 |                          |           |       |
| Car                        | 1         | 42.86 |                          |           |       |
| Main                       | 1         | 14.29 |                          |           |       |
| Need                       | 1         | 14.29 |                          |           |       |

### A1 = Harmony

There were n = 9 metaphors in the Harmony sub-theme for sleep (Table 2).

Definition: The perception of sleep as a process that establishes physical and mental balance, creating harmony between bodily systems.

*"Sleep is like a "restarting" — it resets us for the day with a rested mind."* (JNT P16)

*"Sleep is like "distancing from bad energy"—it distances me from the day's unpleasant experiences."* (SNT P16)

*"Sleep is like "starting another life" — we'll feel relaxed and our pain will be seriously reduced."* (SNT P7)

### A2 = Retrofit

There were n = 8 metaphors in the sub-theme of Retrofit sub-theme for sleep (Table 2).

Definition: Metaphors emphasizing sleep's role in energy renewal and physical/mental "re-charging."

*"Sleep is like "fuel" — it nourishes the body."* (JNT P23)

*"Sleep is like "recharge" — it optimally restores physical and mental fatigue."* (SNT P4)

*"Sleep is like "gasoline" —it's essential for progress."* (SNT P17)

*"Sleep is like "sweet" —I never want it to end."* (SNT P14)

### A3 = Healthcare

There were n = 10 metaphors in the Healthcare sub-theme for participants' sleep (Table 2).

Definition: Sleep perceived as a healing, restorative, and therapeutic tool.

*"Sleep is like "medicine"—it heals both mentally and physically."* (JNT K3)

*"Sleep is like "medicine"— it heals the body."* (JNT K14)

*"Sleep is like "medicine"— it heals."* (JNT K17)

*"Sleep is like "therapy"— healthy living is impossible."* (SNT P20)

### A4 = Essential

There were n = 7 metaphors in the Essential sub-theme for the participants' sleep (Table 2).

Definition: Sleep defined as an indispensable physiological need and lifestyle component.

*"Sleep is our "need"—we cannot sustain a healthy life."* (JNT P13)

*"Sleep is "main"—it's critically important."* (SNT P11)

*"Sleep is "way of life"—it determines my day"* (SNT P13)

Participants' (JNT = 22, SNT = 16) metaphors about "the Olympics" were grouped in three sub-themes (categories).

### **B1 = Summit**

There were n = 16 metaphors in the Summit sub-theme for the Olympics (Table 2).

Definition: The Olympics perceived as the goal, pinnacle, and standard of excellence.

*"The Olympics are like "victory"—they represent the zenith of sports."* (SNT P3)

*"The Olympics are "Everest"—the highest point in an athlete's career."* (SNT P5)

*"The Olympics are the "career summit"—every athlete's greatest aspiration."* (SNT P8)

*"The Olympics are the "summit"—the highest level of competition to me."* (SNT P12)

### **B2 = Existence**

There were n = 12 metaphors in the Existence sub-theme for the Olympics (Table 2).

Definition: Olympics positioned at the core of athletes' identity, purpose, and dreams.

*"The Olympics are like "life"—filled with grueling battles and unforgettable triumphs."* (SNT P1)

*"The Olympics are like "love"—all-consuming, demanding countless sacrifices to compete."* (SNT P15)

*"The Olympics are like "dream"—even the thought of it is beautiful."* (JNT P18)

*"The Olympics are like "biggest dream"—I want to make my dreams come true at the Olympics."* (SNT P2)

### **B3 = Challenge**

There were n = 10 metaphors in the sub-theme of Challenge towards the Olympics (Table 2).

Definition: Olympics viewed as a rigorous test, battle, or competitive arena.

*"The Olympics are like a "war"—all my competitors would be there."* (JNT P12)

*"The Olympics are "biggest competition"—it happens only once every four years."* (JNT P15)

*"The Olympics are "top"—there's nothing beyond this."* (JNT P13) and (JNT P14).

*"The Olympics are the "war"—you fight to have the flag raised and the national anthem played."* (JNT P22)

A detailed thematic mapping of individual metaphorical representations across junior and senior athletes, including their corresponding codes and thematic classifications, is presented in Table 3.

The most critical findings from these results are as follows:

While young athletes predominantly employed functional metaphors such as 'Healthcare' and 'Harmony' to define sleep, older athletes demonstrated a preference for holistic concepts such as 'meditation' and 'distraction from bad energy'. In the context of the Olympics, while both age groups were united in the metaphor of 'Summit', young people employed competition-emphasised expressions such as 'Challenge', while elders emphasised existential themes such as 'Existence' and 'Summit'. This reflects the changing motivational frameworks

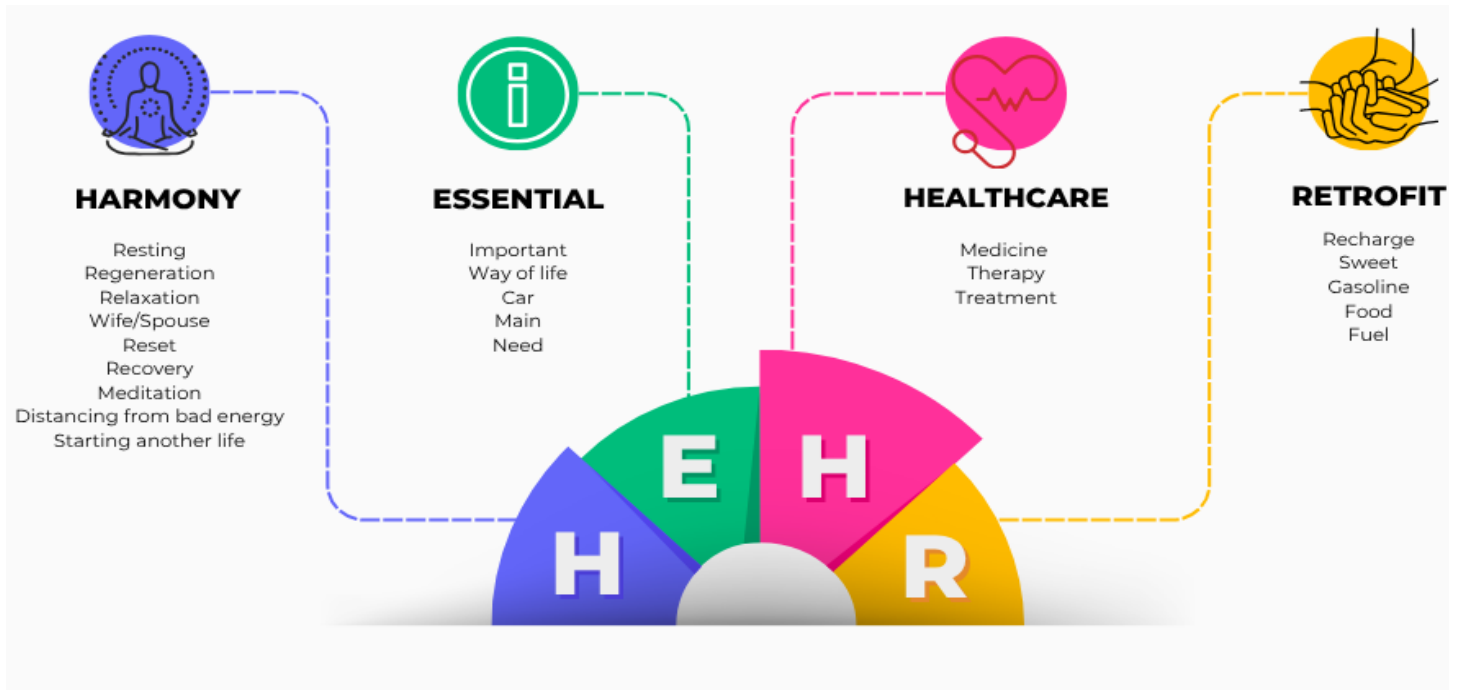
according to career stages, revealing the performance and experience-oriented approaches of young people and elders, respectively.

**Table 3.** Thematic Analysis of Metaphorical Representations of Athletes.

| JNT | SC                    | ST         | OC                  | OT        | SNT | SC                         | ST         | OC             | OT        |
|-----|-----------------------|------------|---------------------|-----------|-----|----------------------------|------------|----------------|-----------|
| P1  | Food                  | Retrofit   | Dream               | Existence | P1  | Recharge                   | Retrofit   | Life           | Existence |
| P2  | Medicine              | Healthcare | Summit              | Summit    | P2  | Resting                    | Harmony    | Biggest Dream  | Existence |
| P3  | Medicine              | Healthcare | Top Level           | Summit    | P3  | Resting                    | Harmony    | Victory        | Challenge |
| P4  | Medicine              | Healthcare | Dream               | Existence | P4  | Recharge                   | Retrofit   | Target         | Summit    |
| P5  | Important             | Essential  | Top                 | Summit    | P5  | Medicine                   | Healthcare | Everest        | Summit    |
| P6  | Medicine              | Healthcare | Dream               | Existence | P6  | Resting                    | Harmony    | Target         | Summit    |
| P7  | Starting Another Life | Harmony    | Exam                | Challenge | P7  | Relaxation                 | Harmony    | Money          | Existence |
| P8  | Resting               | Harmony    | Dream               | Existence | P8  | Relaxation                 | Harmony    | Career Summit  | Summit    |
| P9  | Regeneration          | Harmony    | Summit              | Summit    | P9  | Recharge                   | Retrofit   | Dream          | Existence |
| P10 | Reset                 | Harmony    | Passion             | Challenge | P10 | Resting                    | Harmony    | Dream          | Existence |
| P11 | Resting               | Harmony    | Top Level           | Summit    | P11 | Main                       | Essential  | Dream          | Existence |
| P12 | Recovery              | Harmony    | War                 | Challenge | P12 | Treatment                  | Healthcare | Summit         | Summit    |
| P13 | Need                  | Essential  | Top                 | Summit    | P13 | Way Of Life                | Essential  | -              | -         |
| P14 | Medicine              | Healthcare | Top                 | Summit    | P14 | Sweet                      | Retrofit   | -              | -         |
| P15 | Resting               | Harmony    | Biggest Competition | Challenge | P15 | Meditation                 | Harmony    | Love           | Existence |
| P16 | Restarting            | Harmony    | Dream               | Existence | P16 | Distancing From Bad Energy | Harmony    | Biggest Target | Summit    |
| P17 | Medicine              | Healthcare | Top                 | Summit    | P17 | Gasoline                   | Retrofit   | -              | -         |
| P18 | Car                   | Essential  | Dream               | Existence | P18 | Sweet                      | Retrofit   | -              | -         |
| P19 | -                     | -          | -                   | -         | P19 | Medicine                   | Healthcare | Sport's Summit | Summit    |
| P20 | Important             | Essential  | Competition         | Challenge | P20 | Therapy                    | Healthcare | Summit         | Summit    |
| P21 | Important             | Essential  | Big Competition     | Challenge | P21 | Wife/ Spouse               | Harmony    | -              | -         |
| P22 | Regeneration          | Harmony    | War                 | Challenge | -   | -                          | -          | -              | -         |
| P23 | Fuel                  | Retrofit   | Diamond             | Summit    | -   | -                          | -          | -              | -         |

**Note.** JNT: Junior national team, SNT: Senior national team, ST: Sleep Thema, SC: Sleep Code OC: Olympics Code, OT: Olympics Theme.

A visual representation of the thematic structures identified for sleep and Olympic metaphors is provided in Figures 1 and 2.



**Figure 1.** Thema of Sleep.



**Figure 2.** Thema of Olympic.

## Discussion

This study's epistemological foundation rests on two complementary axes of Olympic performance in elite athletes: the motivational dynamics of existential goal alignment within Csikszentmihalyi's (1990) flow theory framework, and the dynamic homeostatic balance between sleep's multidisciplinary impact profile (encompassing neuroendocrine, psychological, and social components) and athletes' cognitive schemata of performance objectives [16]. Walker's (2017) conceptualization of sleep as "nocturnal therapy" reveals a synergistic interaction network where this biopsychosocial restorative function mutually reinforces existential performance goals during Olympic preparation [17]. This systemic integrity operates as an optimized psychophysiological system, integrating dynamic adaptation mechanisms between sleep's neurocognitive regulatory effects and flow-state, which facilitates motivational factors. The intersection of performance psychology and sleep science not only offers novel methodological perspectives for understanding Olympic preparation processes but also underscores the necessity of an interdisciplinary research paradigm to fully capture this complex phenomenon.

This study presents the first analysis in sports science literature of metaphorical representations examining the interdependent performance continuum between sleep and Olympic goals in athletes' cognition. Our findings, derived through thematic analysis, provide profound insights into elite athletes' conceptualizations of sleep and Olympic performance. Framed within Lakoff and Johnson's (2003) Conceptual Metaphor Theory, the analysis reveals how athletes mentally model these two fundamental concepts through four primary themes [10].

The Healthcare theme emerged most prominently, with participants characterizing sleep through medical metaphors like "medicine" and "therapy." These results align with Fullagar et al.'s (2015) assertion that sleep constitutes not merely passive rest but an active biological process encompassing neural repair, hormonal regulation, and tissue restoration [18]. Notably, athletes' conceptualization of sleep as a physiological therapeutic agent parallels findings from Mah et al.'s (2011) NBA study, which demonstrated significant positive correlation between inadequate sleep (<6 hours) and injury incidence [19]. Participants' metaphorical language suggests they internalize sleep as a strategic performance optimization tool, consistent with research documenting sleep deprivation's detrimental effects on reaction time, decision-making, and motor coordination. The prevalent "sleep is medicine" metaphor represents athletes' cognitive embodiment of this scientific reality within their training experiences.

The present study revealed that elite athletes conceptualize sleep through four primary metaphorical themes, with the Harmony theme demonstrating their perception of sleep as central to homeostatic balance and systemic regeneration. Participants' use of metaphors like "reset" reflects sleep's critical role in synchronizing endocrine functions and neuromuscular restoration [17], indicating they view sleep not as passive rest but as an active physiological regulation mechanism. Athletes' emphasis on "harmony" cognitively mirrors how these physiological disruptions impair training adaptation. The Retrofit theme aligns with Halson's (2019) energy metabolism research, where participants' energy-based metaphors ("recharging," "fuel") reveal their perception of sleep as fundamental to energy restoration [20]. These conceptualizations correspond with biochemical evidence of optimized glycogen resynthesis and ATP renewal during sleep [20].

The Existence subtheme reveals how Olympic competition occupies a central role in athlete identity formation, consistent with Wylleman and Reints' (2010) conceptual framework [21].

Participants' use of existential metaphors (life, love) demonstrates they perceive the Games not merely as competition but as ontological self-defining experiences, corroborating Gould and Maynard's (2009) empirical findings that elite athletes' identities crystallize around athletic achievement with Olympic goals serving as existential motivation sources [22]. The Challenge subtheme aligns significantly with Lazarus' (2000) Cognitive-Motivational-Relational Theory, where participants' competitive metaphors ("war", "victory") reflect primary appraisal processes [23]. Athletes framing the Olympics as "challenge" rather than "threat" demonstrates adaptive cognitive structuring that enables growth-oriented coping strategies, consistent with Fletcher and Sarkar's (2012) Resilience Theory showing how psychological flexibility transforms stressors into development opportunities [24]. The Summit theme further establishes the Olympics as the ultimate reference point in athletes' mental frameworks, evidenced by peak achievement metaphors ("Everest" and "diamond" that internalize the Games as career apogee and gold standard - a cognitive representation that Gould and Maynard (2009) identify as critical for sustaining long-term performance focus. Notably, the "summit" imagery symbolizes not just physical objectives but psychological perfection-seeking, confirming the Olympics' role as absolute success criterion in athlete psychology [22].

Despite some contradictory findings in the literature [2,4], our results demonstrate that elite athletes conceptualize sleep as the biological foundation of recovery, an integral component of performance optimization, and a guardian of physiological homeostasis. This cognitive framework transcends viewing sleep as mere rest, instead positioning it as an active restorative process. Athletes facing exceptional demands - excessive training loads, competitive stress, performance anxiety, prolonged travel, and limited recovery - require evidence-based sleep strategies [25].

It has been demonstrated that the ageing brain employs a broader and more bidirectional neural network when processing metaphors. This represents a physiological shift in strategy in comparison to that observed in younger individuals. However, the semantic knowledge and life experience accumulated over the years enable older adults to interpret these indirect expressions more accurately and with greater depth within a social context than younger people [26]. Given the capacity for interpretation that has been demonstrated, and the ageing brain's consistency in expressing perceptions, it can be argued that for experienced athletes, sleep is not merely a phase of physical recovery, but a cognitive renewal process that enables them to encode the Olympics as an "existential peak" and "victory" beyond a technical goal. In this context, the mental clarity that sleep provides serves to elevate the athlete's sense of belonging to the Olympics beyond the level of mere sporting participation, thereby transforming it into the most powerful metaphor of their professional journey.

## Conclusions

Our analysis identifies the core narrative of high-performance sport: elite athletes operate with a cognitive model that positions the Olympic Games as an existential summit, yet this is cognitively coupled with the understanding that sleep is the foundational mediator of its attainment. While their metaphorical constructs (e.g., war, life) reveal a deep internalization of the Olympic goal, their conceptualization of sleep transcends mere recovery, framing it as an active, strategic process for physiological and psychological reinforcement. The critical imperative for the sports science community is not to further prove this cognitive link, but to solve the consequential implementation gap—translating this sophisticated awareness into actionable, specialist-led sleep optimization protocols that are deemed as essential as any other pillar of training.

This study provides the necessary methodological and conceptual roadmap to bridge this gap. By elucidating the intricate cognitive frameworks that athletes already possess, we offer a foundational guide for developing targeted, effective, and athlete-centered sleep interventions. Our findings thus contribute a critical framework for transforming abstract understanding into concrete performance outcomes, positioning this research as a contributing reference for advancing both theory and practice in the science of elite athletic performance.

### Limitations and Recommendations

This study has several methodological constraints that warrant consideration. Primarily, the exclusive focus on male athletes from the Turkey's National Gymnastics Team limits generalizability to other genders, sports disciplines (team sports, endurance sports, etc.) and cultural contexts. Secondly, the inherent subjectivity of metaphor analysis - while revealing athletes' personal experiences and perceptions - introduces potential interpretive bias and lacks complementary objective measures. Thirdly, data collection during the 2025 training camps may have been influenced by period-specific stressors associated with intensive training and competition schedules, potentially coloring sleep-related perceptions. Furthermore, as the data were collected through written documents obtained from one-to-one interviews, and no subsequent member checking was performed, the participants did not have the opportunity to review or modify their responses. This constitutes a limitation regarding verbatim verification of the data. Finally, the purely qualitative design, without polysomnographic or actigraphic validation of sleep quality/performance relationships, constrains the physiological interpretability of findings. These limitations should be carefully weighed when interpreting results and designing future investigations.

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