

Mental Fatigue in Weightlifting Athletes: A Phenomenological Qualitative Study

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Ευχαριστίες

Με την ολοκλήρωση της Μεταπτυχιακής Διπλωματικής μου Εργασίας, θα ήθελα να εκφράσω τις θερμές μου ευχαριστίες σε όλους όσους συνέβαλαν στην εκπόνησή της.

Ευχαριστώ θερμά τον Επιβλέποντα Καθηγητή μου, κύριο Γούδα Μάριο, για την εμπιστοσύνη που μου έδειξε εξ' αρχής, αναθέτοντάς μου το συγκεκριμένο θέμα, την επιστημονική του καθοδήγηση, τις υποδείξεις του καθώς και την συνεχή υποστήριξη και το αμείωτο ενδιαφέρον που έδειξε από την αρχή μέχρι το τέλος.

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Abstract

This study explores the phenomenon of mental fatigue among elite weightlifting athletes, through their personal experiences and perspectives. Specifically, this research aims to elucidate the causes and challenges associated with mental fatigue in weightlifting, the impact on athletes' daily lives, and their recovery strategies. Eight elite weightlifters were interviewed to gain insights into their experiences with mental fatigue, both within and outside the context of sport. The findings underscore the multifaceted nature of mental fatigue which is related to various personal, social, and environmental factors. This study highlights the need for a holistic approach in addressing mental fatigue, considering not only the athletic context but also the broader aspects of athletes' lives.

Key Words: mental fatigue, elite athletes, weightlifting, well-being, recovery

Περίληψη

Αυτή η μελέτη διερευνά το φαινόμενο της πνευματικής εξουθένωσης μεταξύ υψηλού επιπέδου αθλητών άρσης βαρών, μέσα από τις προσωπικές τους εμπειρίες και απόψεις. Στόχος της έρευνας είναι να ξεκαθαρίσει τις αιτίες και τις προκλήσεις που σχετίζονται με την πνευματική εξουθένωση στην άρση βαρών, τον αντίκτυπο στην καθημερινή ζωή των αθλητών και τις στρατηγικές τους για ανάκαμψη. Έγιναν συνεντεύξεις με οκτώ υψηλού επιπέδου αθλητές άρσης βαρών, για να μοιραστούν τις εμπειρίες τους σχετικά με την πνευματική εξουθένωση, τόσο εντός όσο και εκτός του αθλητικού πλαισίου. Τα ευρήματα αναδεικνύουν την πολυδιάστατη φύση της πνευματικής εξουθένωσης, η οποία συνδέεται με ποικίλους προσωπικούς, κοινωνικούς και περιβαλλοντικούς παράγοντες. Η μελέτη υπογραμμίζει την ανάγκη για μια ολιστική προσέγγιση στην αντιμετώπιση της πνευματικής εξουθένωσης, λαμβάνοντας υπόψη όχι μόνο το αθλητικό πλαίσιο αλλά και τις γενικότερες πτυχές της ζωής των αθλητών.

Λέξεις-κλειδιά: πνευματική εξουθένωση, υψηλού επιπέδου αθλητές, άρση βαρών, ευημερία, ανάκαμψη

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Introduction

The psychological factors that are essential for nurturing a positive state of mind in athletes, including mental toughness, resilience, and attentional focus, are frequently discussed in applied sport psychology. On the contrary, mental fatigue, a psychological state with adverse effects on well being and performance, appears relatively underrepresented in the literature. Mental fatigue is defined as a psychobiological state typically arising after demanding cognitive activities, culminating in a detrimental reduction in an individual's performance and a diminished sense of accomplishment, often accompanied by distress and devaluation (Russell et al., 2019). The literature suggests that specific signs of mental fatigue encompass both physical and psychological symptoms, such as tiredness, lack of energy, decreased motivation, and diminished alertness (Van Cutsem et al., 2017).

In elite sports, athletes often push beyond their limits, with training spans of a decade or more required to reach international standards (Smith, 2003), encompassing annual training hours that are estimated between 700 to 800, reaching an upper limit of approximately 1200. Moreover, modern elite sports demand year-round dedication, with short off-season periods, allowing limited recovery time and perpetuating a constant pressure (Weinberg & Gould, 2007). Such high training loads increase the risk of training maladaptation, leading to an elevated incidence of mental fatigue among athletes (Gustafsson et al., 2011).

Weightlifting requires a repetitive, intense daily training regimen, coupled with meticulous attention to detail and minimal margin for error. As evidenced by its Olympic inclusion and establishment of national and international competitions, weightlifting stands as both a competitive sport and a crucial component of physical fitness regimens. Performance in technically demanding sports, like weightlifting, is facilitated by mental skills such as self-

efficacy, self-regulation, mindfulness, attentional focus, coping strategies, and self-confidence (Neumann, 2019; Englert & Taylor, 2021; Phylactoy, 2019).

When these mental skills are not effectively applied, athletes may experience mental fatigue, with detrimental consequences for their performance and personal life. Fear of failure, lack of acceptance from peers or coaches, and diminished social engagement are indicative manifestations of mental fatigue (Russell et al., 2019). However, a holistic understanding of an elite athlete's daily life, beyond training, and the stressors contributing to mental fatigue remains lacking in the literature (Russell et al., 2019). Additionally, qualitative research examining athletes' perspectives on daily stressors is scarce. Thus, understanding elite weightlifters' perspectives on mental fatigue could provide valuable insights.

Aim of the Study/Research Questions

This study aims to elucidate elite weightlifting athletes' personal experiences and perspectives regarding mental fatigue. Participants will have the opportunity to articulate their emotions and the complications arising from mental fatigue, both in their athletic and personal lives. The study seeks to investigate the causes leading athletes to mental fatigue, challenges faced during competition or preparation, and how daily life is affected beyond the sport context. Additionally, the study aims to explore athletes' strategies for recuperation and the support they receive, both personally and from relevant authorities and sports federations.

Research Questions:

How do elite weightlifting athletes experience mental fatigue, and how do they conceptualize it?

What causes do they attribute to their mental fatigue?

What challenges, both physical and mental, do they encounter during competition or preparation, and how does mental fatigue affect their daily lives outside of sport?

How do athletes attempt to recover from mental fatigue, and what support do they receive during this phase?

Literature Review

The literature review consists of three main topics: weightlifting as an elite Olympic sport, mental fatigue as a psychological state, and mental fatigue specifically in the sport context.

Weightlifting

Weightlifting is an exceptionally challenging sport, marked by a strict daily training routine that demands precise attention to detail and leaves little room for mistakes. Its recognition as an Olympic discipline, along with the existence of national and international tournaments, emphasizes its intense level of competition. Athletes engaged in weightlifting competitions must execute clean and jerk and snatch exercises to lift the highest allowable weight within their weight class. Moreover, weightlifting serves as a cornerstone in physical fitness routines and the athletic preparation of individuals across various sports. Different types of lifts may be performed, depending on factors such as muscle groups targeted, equipment utilized, and the complexity, speed, acceleration, and duration of the lift (Storey & Smith, 2012).

The physical demands of weightlifting have naturally spurred research into physiology, biomechanics, nutrition, and injuries. However, comparatively little attention has been given to the psychological aspects of weightlifting. Studies have shown that self-efficacy and self-regulation play significant roles in the psychological well-being of weightlifting athletes (Englert & Taylor, 2021), along with mindfulness and contemplative movement (Birrer et al., 2012). Additionally, attentional concentration has been identified as another psychological component that can profoundly impact weightlifting performance (Neumann, 2019).

Phylactou (2019) examined the mental preparation of non-elite weightlifting athletes, identifying two primary dimensions of mental processes: mental techniques and mental skills.

Coping strategies for handling mistakes during lifts and self-observation techniques to manage stress were identified as pivotal factors influencing weightlifting performance. Moreover, the research underscored the importance of self-confidence, particularly internal self-confidence, which emanates from athletes themselves. This internal self-confidence plays a critical role in fostering positive feelings, enhancing concentration, facilitating goal-setting, and promoting effort. These findings are corroborated by previous research (Weinberg & Gould, 2007). Furthermore, participants in the study emphasized the significance of self-efficacy for performance, aligning with existing literature (Feltz, Short, & Sullivan, 2008; Morris, 2000).

In terms of mental skills, a notable theme emerging from this research was the athletes' propensity to exert maximum effort during their training routines, particularly in high-pressure situations. While this determination can be motivating, it also carries the risk of encouraging athletes to take unnecessary risks, potentially leading to injury (Weinberg & Gould, 2007). Older studies have indicated that overexertion is a primary cause of injuries among Olympic-style weightlifters (Calhoon & Fry, 1999).

Building upon this evidence, the literature suggests that lack of energy and physical fatigue can serve as predictors for mental fatigue. Behavioral symptoms such as reduced concentration and decreased accuracy in completing cognitive tasks, coupled with extreme bodily fatigue, indicate a heightened risk of experiencing mental fatigue, particularly among athletes participating in high-precision sports like gymnastics and weightlifting. While the literature has yet to specifically address the impact of mental fatigue on weightlifting athletes, it can be surmised that weightlifting, by its very nature, demands emotional control, composure, and flawless execution of each lift, necessitating the application of mental skills and techniques. However, the possibility of mental fatigue occurring in this sport is increased, given the broader understanding of mental fatigue (Gustafsson et al., 2011).

Mental fatigue arises from a combination of factors and can have profound detrimental effects on athletes' lives. It is imperative to examine mental fatigue as a distinct psychological state before contextualizing it within the realm of sports, particularly elite weightlifting, as in the case of this study.

Mental fatigue

Mental fatigue is a psychological state that has received relatively less attention in the literature compared to other psychological skills such as mental toughness or resilience. It is defined as a psychobiological state that typically arises following demanding cognitive activities, significantly impacting various aspects of an individual's life (Desmond & Hancock, 2001; Job & Dalziel, 2001). Scholars suggest three main manifestations of mental fatigue: subjective, behavioral, and physiological (Van Cutsem, De Pauw, et al., 2017; Van Cutsem, Marcora, et al., 2017). Subjectively, common symptoms indicating a state of mental fatigue include an overwhelming sense of tiredness, which can diminish motivation and goal-oriented behavior (Boksem et al., 2006). Behaviorally, there are observable implications on cognitive tasks, such as decreased task efficiency and reaction time. Additionally, alterations in brain activity serve as a physiological indicator of mental fatigue (Van Cutsem, Marcora, et al., 2017). It is important to note that these manifestations need not coexist for an individual to experience mental fatigue.

Mental fatigue can lead individuals to withdraw from social interactions and in extreme cases, disengage from activities altogether (Gustafsson et al., 2008). Studies conducted in workplace settings have shown that burnout resulting from mental fatigue can have physiological repercussions due to energy resource depletion (Grossi et al., 2003). Furthermore, research indicates that mental fatigue is associated with chronic inflammation, immune impairment, and an increased risk of cardiovascular disease (Melamed et al., 2006).

There is some ambiguity in the literature regarding the terminology used to describe mental fatigue. While some researchers advocate for the term "cognitive fatigue" to better capture the typical tasks that induce mental tiredness (Ackerman & Kanfer, 2009; MacMahon et al., 2014), others argue that "mental fatigue" is more appropriate as it encompasses motivation and emotion alongside cognition (Van Cutsem et al., 2017). In line with this, interventions aimed at inducing mental fatigue have been referred to as "self-regulatory depletion manipulations" (Bray et al., 2008; Pageaux et al., 2015).

In the context of sport psychology, research has predominantly focused on emotional arousal during competition, neglecting the broader psychological stressors experienced by athletes before, during, and after competitions (Russell et al., 2019). While some scholars have explored the entirety of the athletic experience, including pre- and post-competition phases (Cresswell, 2009; Gustafsson et al., 2008; Rowbottom, 2000), there remains a gap in understanding the daily stressors outside of training that contribute to stress and mental fatigue among elite athletes.

Russell et al. (2019) emphasize the need for a more holistic approach to mental fatigue in elite sports. While physical fatigue is routinely monitored using specific measurement systems, mental fatigue is often overlooked by practitioners working with athletic populations (Russell et al., 2019). Moreover, there is a debate regarding the transferability of laboratory findings to real-life elite sports settings, prompting further investigation into the prevalence and impact of mental fatigue in competitive environments (Russell et al., 2019; McHugh et al., 2019). The subsequent section presents research on the effects of mental fatigue in the context of elite sports

Mental fatigue in elite sports

Russell et al. (2019) explored athletes' and training staff members' perceptions of mental fatigue across various sports. Initially, they identified primary symptoms that athletes typically exhibit preceding a state of mental fatigue. The most frequently mentioned theme in relation to the classification and description of symptoms associated with mental fatigue was a noticeable change in behavior, marked by diminished enthusiasm for their sport and a disengagement from its demands. Emotional outbursts and a propensity to withdraw also emerged as behavioral alterations linked to mental fatigue. Additionally, both athletes and staff commonly observed distinct shifts in concentration and focus. Despite these prevalent indicators, staff members highlighted the challenge of distinguishing between mental and physical fatigue, underscoring the necessity for a comprehensive understanding of mental fatigue as a distinct mental state.

The study underscored that external obligations, such as work outside the realm of sports, collaborations with sponsors or media, and the management of personal relationships, were significant factors contributing to athletes entering this psychological state. Additionally, the training environment, including potential frequent changes within it, emerged as another prominent reason for participants experiencing mental fatigue. Furthermore, the athletes' unwavering commitment to the challenges of their sport, combined with the lengthy preparation periods and the inherently demanding nature of each sport, had an equally significant impact on their mental state.

Qualitative studies have examined the "real-life" cognitive demands faced by academy soccer players, revealing a strong relation between mental fatigue and performance (Abbott et al., 2020; McHugh et al., 2019). Moreover, professional sponsorship agreements may entail prolonged usage of social media apps like Facebook, Instagram, and WhatsApp,

which have been shown to cause mental exhaustion and decrease decision-making skills in soccer (Fortes et al., 2019).

Furthermore, according to Russell et al. (2019), mental exhaustion stems from professional obligations, over-analysis, repetitive work, and unstable environments, as perceived by elite athletes and staff. In another study by Russell and her team which focused on how elite female athletes experience mental fatigue, it was highlighted that different levels of mental exhaustion are experienced by international representative netballers in different camp and competition settings. During training camps and preparation camps, mental exhaustion was more prevalent than during competitive times. Therefore, it was suggested to monitor mental fatigue during both training and competition preparation, as it is not exclusive to competition.

Gustafsson et al. (2011), reflecting on the need for a more holistic approach to mental fatigue, proposed a specialized interpretation model that encompasses various complex conditions leading to it. This model highlights prognostic factors, entrapment, the role of both the athlete's personality and environment, coping methods adopted by athletes, and the long-term psychological consequences of mental fatigue.

Chronic stress emerged as the most fundamental predictive factor for the occurrence of mental fatigue. On a purely physical level, intensive training and inadequate recovery were the two main factors contributing to mental fatigue. However, the model also pointed to external influencing factors, such as work or school demands, fluctuations in personal relationships, and pressure from parents, coaches, and teammates for success, as significant contributors to mental fatigue. The relationship with the coach and the fusion of the athlete's identity with their athletic persona were crucial aspects influencing the athletes' experiences.

Disappointment resulting from feelings of failure, a common consequence of mental fatigue, was identified as one of the early signs leading to mental fatigue. Research emphasizes the importance of this emotional transition, as athletes appear to be affected by attributes related to self-esteem and self-confidence, which also reflect in their social relationships, often resulting in social isolation or tensions in their close relationships. However, it is challenging to detect these early signs, as Gustafsson et al. (2011) highlighted, due to the subjective nature of how mental burnout manifests in each athlete.

In the same research of Gustafsson and his team, two intriguing factors contributing to the escalation of mental fatigue in athletes were highlighted: the athletes' personalities and the phenomenon of entrapment. Perfectionism emerged as the main personality trait associated with athletes' mental fatigue. Self-worth and acceptance of one's capabilities are two key points shaping the relation between perfectionism and mental fatigue. Additionally, trait anxiety may increase the vulnerability to mental burnout. The lack of adequate coping strategies, combined with aggravating external factors, impacts how athletes experience an episode of mental fatigue (Cresswell & Eklund, 2005; Eklund & Cresswell, 2007). Previous research has also highlighted the connection between mental fatigue and low self-determined motivation or amotivation (Cresswell & Eklund, 2005; Lemyre et al., 2006). Based on these findings, the model suggests a link between unmet emotional and psychological needs of athletes and low levels of self-motivation, potentially leading to a manifestation of a mental fatigue episode.

A significant question arises regarding mental fatigue: why do athletes choose to remain in the sport despite experiencing such a painful psychological state? This phenomenon is defined as entrapment, and Gustafsson's team attempted to analyze its dimensions. Apart from restraining factors associated with entrapment, such as performance-based self-esteem and high investments, the formation of athletes' identity and their

identification with it were crucial aspects. This confusion appears to be linked to overtraining syndrome and, subsequently, to a possible mental fatigue episode. While earlier studies did not support a connection between the idealization of the athlete identity and the mental fatigue state (Black & Smith, 2007; Raedeke, 1997), more recent research highlights the strong sports identity of athletes and its potential association with experiencing mental fatigue (Gustafsson, Kentta, Hassmen, Lundqvist, & Durand-Bush, 2007, Gustafsson et al., 2008).

Athletes who have invested years in intense training have developed a strong identification with the concept of an athlete, explaining why they persist in the sport despite challenges. The model suggested further investigation into the factors shaping individuals' identities as athletes and their potential link to a higher likelihood of experiencing a mental fatigue episode.

Synopsis and Need for the Study

The relative literature has pointed that mental fatigue manifests as an emotional breakdown resulting from a series of psychological fluctuations and affects both an athlete's performance and his/her life. However, the literature has predominantly outline the mental skills required by athletes to avoid mental fatigue, portraying simplistically mental fatigue as a consequence of inadequate adaptation of these skills. Recent research has begun to focus more on the causes of mental fatigue, yet there remains an emphasis on periods purely related to competition or athlete preparation, overlooking a holistic approach.

Moreover, the idealization of an individual's identity as an athlete appears to foster a model of perfectionism, wherein failure leads to frustration and, potentially, a mental fatigue episode. This phenomenon is particularly relevant in sports like weightlifting, where precision and attention to detail are paramount to executing lifts correctly. Despite this, no research has explored how elite weightlifters experience mental fatigue to date.

This study aims to provide a more holistic understanding of mental fatigue, offering athletes in demanding and detail-oriented sports like weightlifting the opportunity to share their experiences. By considering factors beyond the training context—such as social relationships, daily demands, and personal expectations—the study seeks to shed light on the impact of mental fatigue on various aspects of athletes' lives. Furthermore, by examining the causes of mental fatigue and athletes' attempts to manage them, the study aims to introduce coping mechanisms specific to weightlifting athletes in dealing with this psychologically taxing condition.

Methods

Participants

Eight male weightlifting athletes participated in the study. These were purposefully approached based on two criteria: a. they were elite athletes and b. they had presented in the past symptoms akin to mental fatigue. Regarding the first criterion, these athletes are registered in the official archives of the Hellenic Weightlifting Federation, as athletes who have competed in National or European Competitions. Regarding the second criterion, personal communication with the athletes by the researcher, who has been a fellow athlete with all of the participants, confirmed that they have experienced at least once in their athletic career, either during their preparation, during the competition or after a weightlifting event feelings and perceptions denoting mental fatigue. Additionally, the researcher trained with the athletes during the periods that they faced symptoms of a mental fatigue state. This process of selection assures the purposeful sampling of this research: participants were chosen on purpose and not randomly. It allowed the researcher to focus on specific areas of interest and gather in-depth data, regarding the personal experience of a mental fatigue state specifically from experienced elite athletes.

The age range of the participants was between 20 and 35 years old. They were of Greek nationality and were living in Greece. All of them had at least 5 years of experience in elite weightlifting. Their engagement with the sport of weightlifting ranged between 8 years (the younger participant) and 20 years (the older participant). All of them had competed at least once in their career in a competition of elite level (National, European or World Championships). Six of them had won at least once in their career a gold medal in a National Weightlifting Competition. More specifically, 3 of them were active members of the Greek National Team, having represented their country in total of 5 European Weightlifting Competitions (2, 2 and 1 respectively) and one of them in 2 International Competitions.

Procedures

The study was approved by the Institutional Research Ethics Committee and by the head coach of the Hellenic Weightlifting Federation. All eight participants were given a form of informed consent and participated voluntarily in this study. No one received any sort of compensation or benefit for their participation. Protecting the identity of the participants and the confidentiality of their data was the researcher's top priority.

Role of the researcher

The researcher's role involved planning and carrying out the study, gathering and analyzing data, and interpreting and reporting results. At the same time, the researcher's role was to understand the participants' thoughts and emotions. The perspective of the researcher was facilitated decisively from the extensive experience he had with the community of the study. The researcher adopted an insider perspective, being a fellow athlete of the participants and having shared training routines and competitions. While there are debates about the pros and cons of the insider perspective, indicating that an outsider perspective establishes objectivity by better means, the insider perception can establish a more acquainted connection with the participants. This can contribute to a deeper understanding of the phenomenon under investigation (Suzuki et al.,2007).

Concisely, in this qualitative study, the researcher's primary responsibilities included formulating the research questions, choosing the participants, gathering and evaluating data, interpreting the results, and making sure that ethical and reflexive considerations were taken into account.

Data collection

A phenomenological approach was used in this study and each participant took part in

a semi-structured interview. The phenomenological approach allowed the researcher to describe the meaning, for several individuals, of their lived experiences of a certain phenomenon. The description provides information about what the participants had experienced and how they did so, while trying to also highlight similarities and differences in this experience (Creswell, 2009). Therefore, this approach fits the purpose of this study, as it allowed the researcher to explore how the athletes experienced a mental fatigue state.

Participants from different age groups, with different levels of experience and different backgrounds were selected after a short screening process. A comprehensive interview guide was developed, choosing a semi-structured interview format with open-ended questions. Data collection was conducted using audio recording, after obtaining an informed written consent. The main facility that was used for conducting the interviews was the training center of the Greek National Weightlifting Team. The average duration of each semi-structured interview was 30'.

Data analysis

The data analysis process commenced with familiarization of the data, involving repeated readings of the transcribed audio recordings to gain a deep understanding of it. This iterative process allowed the researcher to uncover new insights and take comprehensive notes to inform subsequent phases of analysis. Subsequently, initial coding was conducted to identify recurring patterns and features in the data, facilitating a meaningful interpretation. This coding process was carried out manually using an inductive approach, wherein similar patterns were classified into codes. These codes formed the foundation for developing thematic modules that encapsulated the essence of the research.

Once all information had been coded, the researcher proceeded to organize and shape the codes into prospective themes. This involved matching related codes to form overarching

themes, with some codes evolving into main themes and others contributing to sub-themes. A rigorous review of these themes followed, conducted in two stages. Firstly, the researcher examined coded data extracts to discern coherent patterns and themes. Secondly, these themes were reviewed in relation to the entire data set to ensure a comprehensive representation of their meaning. This phase aimed to formulate a thematic map that defined and named the themes while establishing their relevance to the research questions (Braun & Clarke, 2006).

In presenting the final results, each main theme was delineated separately, accompanied by its corresponding sub-themes and relevant codes. All interviews were transcribed in Greek and subsequently translated into English for analysis. The length of the transcribed interviews totaled 68 pages.

Results

The primary objective of this study was to elucidate the personal experiences of elite weightlifting athletes regarding mental fatigue during their athletic careers. The study sought to allow athletes to articulate their perspectives on mental fatigue, explore its causes, delineate its impacts on both athletic and non-athletic aspects of life, examine recovery processes, and assess institutional support provided by weightlifting federations.

Analysis of the transcribed data yielded five main themes:

a) The conception and personal experience of mental fatigue by elite weightlifting athletes. b) Athletes' perceptions of the conditions leading to a mental fatigue state. c) The impact of mental fatigue on athletes' athletic and non-athletic daily lives. d) The process of recuperation from mental fatigue. e) The contribution of weightlifting federations to athletes' experiences of mental fatigue.

Each main theme comprised sub-themes, derived from specific codes, providing a detailed exploration of the phenomenon. Table 1 presents an overview of the themes, sub-themes, and related codes.

Table 1.

The emerged themes

Main Themes	Sub themes	Codes
Personal conception of mental fatigue	Personal perspective	Denial Paralysis
	Personal experience	Emotional Tension Physical symptoms
Causes that led to a mental fatigue state	Expectations	Expectations of the coach/family/friends (external) Need to prove their worthiness/Self expectations (internal)
	Pressure	Pressure from the demands of weightlifting as a sport Pressure in their jobs/ daily liabilities/ problematic relationships
The impact of mental fatigue	Decline in performance	Physical weariness/ impact on strength-technique
	Emotional instability	Anger, despair, sadness, disappointment, emotional confusion, self-doubt
The process of recuperation	Personal reflection	Self reflection/ self esteem
	The role of the family/friends	Supportiveness/ empathy/ anxious (about what happened)
	The role of the coach	Mentors/ importunate behavior
Contribution of competent authorities	Training Staff	Lack of organization/support Inadequate staff

Main Theme 1: Personal conception of mental fatigue

This primary theme delves into elite weightlifting athletes' understanding and experiences of mental fatigue, portraying it as a profoundly impactful phenomenon affecting both their athletic pursuits and personal lives. Through the interviews, two key sub-themes emerged: the athletes' personal perspective on mental fatigue and their firsthand experiences of this state.

Sub theme 1: The athletes' personal perspective of mental fatigue. This sub-theme centers on the athletes' individual viewpoints regarding mental fatigue as a psychological state. Across interviews, athletes uniformly characterized mental fatigue as a distressing and traumatic experience, profoundly affecting their mental and emotional well-being. Two primary codes contributed to the formation of this sub-theme: "denial of training or competition participation" and "emotional and physical paralysis."

Participants articulated mental fatigue as a state wherein they felt pushed to their psychological limits, experiencing a sense of burnout. They described feeling unmotivated to engage in training or competition, despite their physical readiness. Interestingly, many expressed surprise at encountering mental fatigue, believing their athletic preparation to be sufficient. Moreover, they described a disassociation of their body's readiness and their brain's ability to keep up, creating a perplexing contradiction. While some athletes had experienced mental fatigue multiple times, while others less, yet all agreed on the overwhelming sense of aversion it instilled towards their sport, a sentiment difficult to articulate. For example Interviewee 1 (S1) suggested that:

“So there's this burn, you carry it in... It's an oxymoron, to see the bar, which is the thing you love more than anything in your everyday life, and it's like you don't even want to touch it... Your mind is in denial, it's in constant denial... And even though you know you want to, I don't know how to explain it. There's something inside of you that says no...”

In the same pattern interviewee 2 (S2) described his feeling of denial as

“... Three days before the competition day I didn't go to training... I went out of the house, and I just went back in... I sat on the couch and said I didn't want to go. Denial... And I just stared at the wall. I didn't go any of the next few days, and I didn't go to the games either...”

While interviewee 7 (S7) pointed out about this feeling of refusal and its connection to mental fatigue:

“... the mental fatigue... What can I say... It's a state of mind that I hope that none athlete may experience... And the reason is because , unlikely the many physical injuries we may face as athletes, this one is different... Is a mental state of mind that you can't explain, it just feels like you came to your limits mentally... For many reasons probably, but it's something unexplainable... You just feel a constant refusal for doing what you actually love, the weightlifting... You just don't want to touch a bar, to go to your training center... For me, I didn't even compete in competitions that I was preparing for long periods...”

Considering the second code (paralysis), it consisted of similar patterns as the previous one. Participants expressed their inability to face the situation, and that they perceive the phenomenon of mental fatigue as a desperate situation, which they seem unable to control. This mental exhaustion, leads to a complete withdrawal, as they describe.

Interviewee 3 (S3) said *“Inability to synchronize mind and body... The body wants to, and suddenly it's like the mind puts a wall in front... And the body doesn't follow any command...”*,

Interviewee 2 summed it up in a very characteristic way: *For me, since you ask me what it means to be "brain broken", I say it more loosely... mentally exhausted at least... It's like a quicksand... You sink and you feel like you can't get out.*

Sub theme 2: Personal experience of mental fatigue. This sub-theme, drawn from questions probing athletes' personal experiences, highlighted two primary codes: "emotional tension" and "physical symptoms" accompanying mental fatigue.

Emotional tension emerged as a prominent feature of mental fatigue, encompassing a range of emotions such as anger, sadness, disappointment, grievance, and despair. Participants described these emotions as deeply impactful, illustrating the profound psychological toll of mental fatigue. They noted how these emotional states extended beyond their athletic pursuits, affecting their relationships, daily lives, and even employment. The emotional upheaval experienced during mental fatigue underscored its pervasive and far-reaching effects on athletes' well-being.

Interviewee 1 (S1) mentioned *"But behind the competition, that is, if the match is on Saturday, until Friday you carry this stress, this tension, let's call it tension..."*,

while interviewee 5 (S5) described his experience of a mental fatigue episode like

" Well, look, I was bursting with rage everywhere... Relatives, friends... I even spoke more sharply to the girl I mentioned to you one day... I mean, how can I tell you, a confusion, a mess inside my mind..."

For interviewee 8 (S8), the personal incident of mental fatigue had the following meaning

“... I was feeling that I am not in control of my feelings... Such a despair, such a depressing emotion... My brain seemed to not be able to co-operate with my body, and all this were affecting my feelings... I wasn't finding the point in all that”...

The second code, focusing on physical symptoms, revealed the additional challenges athletes faced beyond emotional distress during mental fatigue episodes. Participants described a range of physical manifestations accompanying their mental fatigue experiences, including palpitations, headaches, stomach discomfort, and trembling. These physical symptoms compounded the overall difficulty of navigating mental fatigue, further highlighting its multifaceted impact on athletes' well-being.

Answers such as this, *“Yes, those days when I had such a constant pain in the stomach, along with strong palpitations... I think it was all this stress coming out psychosomatically...”*, from interviewee 2 (S2) solidify the above paragraph.

Interviewee 7 (S7) pointed some more physical symptoms

“I was sweating that morning, I was feeling such incapability of moving my body... I knew everything was coming from my mind, from my devastated psychological state, but I could feel also my body trembling...”

Main Theme 2: Causes that led to a mental fatigue state

The majority of participants acknowledged that when encountering episodes of mental fatigue— although they couldn't provide a specific explanation of these episodes—they discerned this state as stemming from particular factors culminating in their cognitive thresholds. These factors were traced back to emotional and social influences. During this

phase of the interview, the researcher endeavored to assist participants in pinpointing these overarching factors with greater precision. From their responses, two primary subthemes emerged as predominant catalysts for experiencing mental fatigue: a) expectations, and b) the pressures inherent in daily life.

Sub theme 1: Expectations. All participants highlighted the pervasive influence of expectations, whether internal or external, on their experiences of mental fatigue. The theme of expectations emerged consistently across interviews, with participants attributing these pressures to both their personal aspirations and external influences. Codes such as "the expectations of important surroundings (family, friends, coach)" underscored the impact of external pressures, while themes like "the need to prove my worthiness" and "self-pressure" highlighted the internal struggle participants faced. The convergence of internal and external expectations intensified the psychological burden, exacerbating feelings of mental fatigue and impeding athletic performance. To this end, Interviewee 2 (S2) described:

"...To begin with, that year I had set very high expectations for myself... I mean, it was the year I said I was going for a medal... I demanded that from myself every day..."

while interviewee 3 (S3) described these expectations as a big responsibility *"The biggest cause lies with the psychological burden, the responsibility you feel to do well..."*

For interviewee 4 (S4), the age was described as the factor that set the expectations he had for himself

" it was because of my surroundings clearly... It was my age then, and my enthusiasm to take part in a world event, that I was influenced by whatever I heard from those around me... From coach, teammates, friends. .. So when you hear that "this is your year, not many people

can do what you are going to do" you know... and other words like that, it is reasonable to create expectations for yourself... that you must succeed, they expect it from you ... I was young, so I saw it more that I shouldn't let them down, and not that all this somehow spoiled me..."

Sub Theme 2: Pressure. This sub-theme underscores the delicate balance that weightlifting athletes strive to maintain between the rigors of elite competition and the demands of everyday life. Weightlifting, characterized as one of the most physically and mentally demanding Olympic sports, exacts a toll on athletes' physical and mental well-being. Participants emphasized the pressures arising from "the demands of many hours of training," the necessity for unwavering dedication, and the sacrifices required to excel in their sport. These factors contribute significantly to the onset of mental fatigue, highlighting the challenges athletes face in managing their athletic pursuits alongside their personal lives.

Interviewee 5 (S5) summed it up as follows:

" Think about how much discipline, how much concentration is needed... It is one of the very few Olympic sports, where during your lift in a competition, there is absolute silence... For the athlete to concentrate... When you learn to function like this, doesn't it make sense that at some point you will get lost?.... You are not only an athlete, you are also a person..."

While interviewee 7 (S7) mentioned about the sacrifices he had to make

"...you have no idea what it takes to become elite in weightlifting... I sacrificed so many things, I saw everyone having fun, going out... Not me... When I had a preparation, I didn't have a single day off... And

all the athletes of this level... It was something that ok, you say I do what I love... But at what cost?.. Having no life?..”

The pressure of daily life presents weightlifting athletes with additional challenges, particularly for those who must balance their athletic pursuits with employment obligations. For athletes reliant on employment for income, the demands of their jobs can compound the stress they experience, exacerbating the likelihood of encountering a mental fatigue episode. Moreover, imbalances in personal relationships further contribute to negative psychological states, which in turn can adversely affect athletes' preparation and performance. These external stressors act as significant factors in precipitating mental fatigue episodes among weightlifting athletes, underscoring the multifaceted nature of the challenges they face.

Interviewee 4 (S4) stated that *“I was trying to think about what I want to do with my professional life... In the future, and I began to understand that through Weightlifting I am not going to be able to make a living in my life...”*,

while interviewee 8 (S8) regarding the daily demands, communicated that

“The demands of daily life can absorb you, can wear you down, without even being an athlete... I had constant pressure from many responsibilities in my personal life, my mother had some health issues, I was also estranged with my girlfriend... All these I things made my mind more confused, didn't let me be concentrated in my training... “

Main Theme 3: The impact of mental fatigue

This theme underscored the significant and enduring impact of mental fatigue on the lives of the participants. It became evident that mental fatigue episodes not only affected athletes temporarily but also had long-lasting repercussions. Responses from participants

highlighted two primary sub-themes: a decline in daily performance and emotional instability in their daily lives beyond the realm of sports.

Sub theme 1: Decline in performance. The majority of participants (6 out of 8) highlighted the profound influence of mental fatigue episodes on their athletic routines, citing symptoms of physical weariness. They noted that their mental state was not the only aspect affected by these episodes; their physical capabilities were also compromised. Participants observed a decline in their technique, particularly in the execution of lifts, and a reduction in their strength levels. These effects were attributed to their low-spirited psychological state, resulting in a significant decline in performance, both during training sessions and in competitive settings.

Interviewee 5 (S5) had to say

“But in my confidence as an athlete, in how I can perform in training and in how I felt connecting with my body... You know to do my lifts technically correctly... Yes, the whole situation affected me a lot...”,

same as interviewee 3 (S3) who mentioned the following regarding his decline in physical performance:

“This situation left me a little behind as an athlete, in terms of performance... Because it works as a chain, that if you stop practicing something, probably you won't be the same good at this... But yes, purely competitively if you ask me, I was far behind, I wasn't performing, I almost felt at some point that I wouldn't be competing at a high level again...”.

Interviewee 6 (S6) admitted that his body was in a shock mode, unable to follow his mind:

“I had to accept the harsh reality, that my body was in a shock mode... I couldn't return to my normal training sessions, my body wasn't co-operating... And it's really so bizzare, cause you know, I hadn't suffered a major injury or something... I was just experiencing the results of what my psychology had been through...”

Sub theme 2: Emotional instability. This sub-theme underscores the profound emotional toll of mental fatigue on athletes. Participants described experiencing devastating emotions such as anger, despair, disappointment, and self-doubt. These emotions extended beyond the realm of sports, affecting their daily lives and interpersonal relationships. Mental fatigue eroded their self-confidence, leading them to question their abilities not only as athletes but also as normal-functioning individuals. Participants reported feeling ineffective in their daily tasks and occupations, with their thoughts consumed by the shock of their experiences. This emotional turmoil strained their relationships, as they struggled to control their emotions or communicate effectively with others, often resulting in outbursts or conflicts.

Interviewee 1 (S1) pointed that

“So much anger, I can not even describe it (laughs)...And this affects you in your daily life too, because when you come home you have tension, because you've done the same things, because you only do the same things...” and *“There was a desperation... To be able to do this and say, like being an athlete abroad, live from this... And make money from this and live from this...No, this is something that doesn't happen here... Making us depserate...”*.

For interviewee 5 (S5), the way he experienced devastating emotions, acted as a warning sign so as to listen to the signs of his body exhaustion better in the future:

“So in that sense I say it... On a daily level, it stressed me as a person, it made me angry...” and You must listen to your mind, listen to what it tells you that it needs a break... If you hurry to come back, if you put your ego as your priority, and not resting because you need it... The result is you experience a mental meltdown every day, you burt out to your friend,your family... You lose yourself...”.

Interviewee 7 (S7) shared the impact this situation had to the relationships in his life:

“Generally, I was devastated, you know... I was bursting out to others with anger, but that was just a cover... Inside me I was depserate, I could not return to my training sessions, and I could not even enjoy a coffee with my friends, for a long time... Crazy right?..”

Main Theme 4: The process of recuperation

This theme delves into how participants attempted to recover after experiencing mental fatigue episodes and whether they managed to restore their previous levels of performance. While all participants eventually returned to elite competition, the duration of their recovery varied significantly. Three sub-themes emerged as pivotal factors in this process: self-reflection, the support of family and friends, and the guidance of their coach.

Sub theme 1: Self reflection. Participants emphasized the importance of engaging in self-reflection as part of their recovery journey. Taking time to introspect allowed them to comprehensively analyze the mental fatigue episode, identify contributing factors, and develop strategies to prevent recurrence. Self-reflection also played a crucial role in

rebuilding their self-esteem, which had been significantly impacted by the experience. Restoring confidence and self-belief emerged as essential priorities in their efforts to recover.

Interviewee 5 (S5) pointed out that

“ You must listen to your mind, listen to what it tells you that it needs a break... If you rush to come back, if you put your ego and not what you need as your priority, you suffer... ” and “It didn't bring me down because, to tell you the truth, I actually did the things I wanted for me... I stayed out of the competitions, yes I took my time ... but when I decided I wanted to start training again, I was ready...”.

Interviewee 8 mentioned that he took time off to reflect:

“ It was so important that I really took my time off... You know, as I told you before, in the very first days I was feeling like something was completely wrong, I couldn't explain what... But as the days were passing by, I understood the importance of finding my self balance, to reflect on what happened and understand it's normal...”

Interviewee 2 (S2) suggested that reflecting on his needs, led to a better adaptation when back in training

“And finally I succeeded after some time, I started and found meaning in training again... I said that I will not put any more huge expectations , I will do it more because I like it... And I already talked, I talked to my parents, I talked to friends, I talked to my girlfriend... The Psychologist urged me to do it, and really all of this helped me be free of guilt...”

Sub theme 2: The role of the family/friends. The support of family and friends emerged as a significant factor in participants' recovery process. Participants highlighted the invaluable role played by their close ones in providing emotional support, encouragement, and reassurance during challenging times. The presence of a supportive social network helped alleviate feelings of isolation and contributed to their overall well-being. However, in some cases, familial or social dynamics added stress to participants' psychological burden, highlighting the complex interplay between support systems and mental health.

Interviewee 1 (S1) shared that

“I am a person who likes to talk, to express what concerns him... So talking to my people about such a difficult period of my life was spontaneous...”

My girlfriend, now my wife, was and is always there for me... In the first incident when I was not well, she showed incredible understanding...

while interviewee 6 stressed the understanding he had from his close ones:

“My family and my friends... Thank God they were beside me the whole time, they showed so much empathy... They didn’t always speak, which is very important for me, as they can understand what you are going through and just be there for you...”

Interviewee 4 (S4) summed up the importance his teammates had to his recuperation as follows

“ But my close friends, my company, yes, they were by my side... They are also my teammates, so you know... They understood a lot more...”

And they supported me, showed me support... Oh, I'd forget the parents (laughter)!.. ”

On the other hand, interviewee 7 (S7) mentioned that the relationship with his girlfriend contributed in a negative way to his emotional and mental state:

“.. Unlike my girlfriend (laughs)... I told you there, there was a rift in our relationship... it didn't help much, the whole atmosphere was quite toxic...”

and interviewee 8 (S8) shared the stressful handling of this whole situation from his parents

“...You know my parents... Well I don't blame them, I understand the reason... They were shocked seeing me like this , I get it... But they didn't really helped me during my recovery, no... I can hear their voices in my head saying that I should stop, that all this has clearly affected me in a toxic way...”

Sub theme 3: The role of the coach. Participants acknowledged the pivotal role of their coach in facilitating their recovery from mental fatigue. The guidance, expertise, and support provided by their coach were instrumental in navigating the challenges posed by mental fatigue and regaining confidence in their abilities. Coaches played a crucial role in tailoring training programs, providing emotional support, and fostering a positive training environment conducive to mental and physical well-being. However, participants also noted instances where coaching methods or expectations exacerbated their mental fatigue, underscoring the nuanced nature of the coach-athlete relationship in elite sports environments.

Interviewee 3 (S3) had to say:

“ But I have a collaboration and a relationship of many years with my coach, so I think that these things cannot affect us... He told me the first time to take my time, to address the situation myself... And that he is there for me, for what I need... that I don't have to prove anything to anyone...”

while interviewee 4 (S4) pointed out that his coach's advice was very helpful:

“I also had my coach by my side as a support, which is very important... You know, with proper hints and directions a little bit about how to get my body back, a little bit some technical issues... . From a psychological point of view, my coach also played a decisive role ”

On the other hand, interviewee 2 (S2) mentioned the negative impact his coach had on his psychology

“Yes clearly... I will not hide, nor will I protect my coach....His intervention then was very bad, it affected me a lot... It wasn't the yelling at me, it was that I felt that he just doesn't understand me... And unfortunately this is an issue in Greek weightlifting. .”

While, in the same pattern, interviewee 5 (S5) mentioned:

“In general, my coach and I have gone through many phases, both when we were fine, and when we weren't... It's not that he always understands my needs... We've had a falling out because I really felt that we couldn't see some things from the same point of view. ”

Main Theme 5: The contribution of the competent authorities

The final theme sheds light on participants' perceptions of the lack of support from competent authorities, primarily the Hellenic Weightlifting Federation, and its impact on their ability to compete effectively. Participants expressed frustration over the inadequate support provided by governing bodies, which hindered their efforts to address mental fatigue challenges.

Sub theme: The training staff. Participants expressed dissatisfaction with the quality and availability of training staff provided by competent authorities. They cited instances of insufficient coaching expertise, lack of personalized training programs, and inadequate support for addressing mental health challenges. Participants emphasized the importance of competent coaching staff in guiding their training regimen, providing psychological support, and optimizing performance. However, the perceived inadequacy of training staff hindered participants' ability to receive comprehensive support and guidance, contributing to their frustration and disappointment.

Interviewee 5 (S5) summed it up:

“...not particularly... In general, we don't have support, and I don't think you'll find athletes who could tell you the opposite in Greece... Athletes abroad are rewarded for their efforts, it's clear... In Greece, on the other hand, there is an apathy, a complete indifference... Psychologist? We don't even have a physiotherapist for many months!”

while, in the same vein, interviewee 8 (S8) stated about the lack of training staff the following:

“Facilities, staff, physiotherapists, gyms... Everything is in short supply... It is unthinkable like this, to need some things for your

training and not be able to have them... Me and most of us sacrifice a lot every day to be there, to give our best... And this is how they say thank you?"

Trustworthiness

In qualitative research, there are criteria that have to be met in order to establish the trustworthiness of the study. These include, among others, credibility and transferability. These are discussed below in relation to the present study.

Credibility

The credibility of this study is bolstered by two primary factors: a) the researcher's extensive personal involvement in the sport of Weightlifting, and b) the prolonged interaction with the athletes who participated in the study. The researcher has a 12-year immersion in Weightlifting, including participation in two National Competitions. Throughout this period, the researcher dedicated daily many hours daily to practicing the fundamental lifts of snatch and clean and jerk, adhering to distinct training regimens for each. Furthermore, the researcher trained across six diverse training facilities and collaborated with five different coaches, one of whom held a pivotal role as the head coach of the Greek Weightlifting National Team. Notably, the researcher qualified for six National Competitions and competed in two, navigating challenging circumstances such as balancing athletic pursuits with academic and later professional commitments as a psychologist, as well as overcoming significant injuries. This multifaceted experience facilitated the researcher's empathy with the mental rigors endured by elite weightlifting athletes in their daily lives.

Additionally, the researcher engaged in frequent training sessions with the participants of this study, particularly during their preparations for National Weightlifting Championships. Direct interactions occurred during competitions, affording opportunities for conversations about the athletes' physical and mental well-being preceding key events. These collective experiences enabled the researcher to develop an in-depth comprehension of the participants' abilities, levels of expertise, backgrounds, and skillsets. Such firsthand insights

serve as foundational elements that underpin the authenticity and nuanced interpretation of the research findings, thereby solidifying the research's credibility.

Peer Debriefing

A seasoned researcher meticulously supervised the entirety of the investigation, from its inception to its culmination. His active involvement in data analysis and the evaluation of the research process played a pivotal role in ensuring the accuracy and relevance of the data analysis. His discerning scrutiny of the study's methodology proved instrumental in identifying and rectifying any inherent flaws, biases, or limitations, thereby elevating the caliber of the research and augmenting its overall quality.

Member Checking

Member checking serves as a methodological approach to scrutinize the validity of research findings, also known as respondent or participant validation. Participants are afforded the opportunity to review data or results, allowing them to confirm the accuracy and alignment with their own experiences. In this study, participants were granted access to transcripts, summaries of thematic analyses, and, upon completion of the research report, the entire document. This feedback mechanism ensured the identification and rectification of any inaccuracies or potential discrepancies. The involvement of participants during this phase, coupled with their established rapport with the researcher, contributed to enhancing the transparency and comprehensiveness of the entire research process.

Transferability

The concept of "transferability" pertains to the extent to which the findings of qualitative research can be extrapolated to diverse situations or contexts. Within the realm of qualitative inquiry, the individual responsible for making generalizations assumes the

primary role in ensuring transferability. Enhancing transferability necessitates providing a comprehensive depiction of the participants, the research context, the methodologies employed, and the underlying assumptions. Subsequently, it becomes the responsibility of the individual seeking to apply the findings in a different context to assess the appropriateness of such transfer.

In this particular research endeavor, several factors serve as key facilitators in achieving transferability. These include the participants' extensive dedication to elite weightlifting, their active involvement in elite-level competitions, and their individual accomplishments within the sport. Moreover, the documented mental challenges encountered throughout their athletic careers provide invaluable insights into the phenomenon of mental fatigue in elite weightlifting, thereby enhancing the transferability of the research findings to similar contexts.

Conclusion of the Results

This study provided an in-depth exploration of mental fatigue among elite weightlifting athletes, uncovering the profound emotional toll it takes on their well-being and performance. The research demonstrated that mental fatigue is not only a cognitive issue but also a deeply emotional one, significantly influenced by the interplay of rigorous training schedules, competitive pressures, and personal life challenges. Athletes experiencing mental fatigue reported symptoms such as decreased motivation, impaired concentration, and a heightened risk of errors, all of which impede their performance and overall quality of life.

The emotional impact of mental fatigue on the athletes was particularly striking. Participants described experiencing persistent feelings of anxiety, sadness, and a sense of hopelessness, which often led to emotional exhaustion and burnout. These emotional symptoms further diminished their motivation and engagement in both their sport and personal lives, creating a vicious cycle that exacerbated their mental fatigue. The study highlighted the critical importance of psychological and social support systems in helping athletes manage these emotional effects. Those with strong support networks and effective coping strategies were better able to mitigate the adverse emotional consequences of mental fatigue, maintaining higher levels of resilience and performance.

Comparing these findings with previous research underscores the expanded understanding of mental fatigue's emotional dimensions. Earlier studies, such as those by Phylactou (2019) and Neumann (2019), focused primarily on cognitive aspects like attentional control and the benefits of mindfulness in sports contexts. However, this study reveals that mental fatigue's emotional impact extends far beyond the immediate competitive environment. The research indicates that personal life stressors, such as family responsibilities and work commitments, significantly contribute to mental fatigue, affecting

athletes' emotional states and overall mental health. This broader perspective challenges the narrower focus of prior research and calls for a more comprehensive approach to addressing mental fatigue.

In conclusion, this study significantly contributes to the understanding of mental fatigue among elite weightlifters by emphasizing its emotional dimensions and the interplay of athletic and personal stressors. The findings advocate for the development of targeted interventions and support programs that address both the cognitive and emotional aspects of mental fatigue. By providing comprehensive support, including psychological resources and robust social networks, stakeholders can help athletes sustain high performance levels while maintaining their mental health and emotional well-being. This research paves the way for future studies to explore effective coping mechanisms, and the long-term effects of mental fatigue, ultimately aiming to enhance the support provided to elite athletes in their pursuit of performance in a high level.

Discussion

This study aimed to elucidate elite weightlifting athletes' personal experiences and perspectives regarding mental fatigue. The key $\rho\epsilon\sigma\theta\lambda\tau\sigma$ denotes that mental fatigue among elite weightlifters is significantly influenced by a combination of intense training schedules, competition pressures, and personal life challenges. Athletes reported that prolonged exposure to these stressors led to a state of mental fatigue, characterized by diminished motivation, impaired concentration and increased susceptibility to errors during training and competition.

A main piece of supporting evidence comes from the athletes' accounts of their daily routines, which often involved balancing rigorous training sessions with personal and professional responsibilities. This dual challenge contributed to a persistent state of mental fatigue, exacerbating feelings of burnout and emotional distress. Notably, this study showed that athletes who lacked adequate coping mechanisms or social support were more prone to severe mental fatigue, highlighting the critical role of psychological and social resources in mitigating this condition.

The impact of mental fatigue on the participants was profound. Athletes described a range of psychological symptoms including anxiety, persistent feelings of sadness, and a pervasive sense of hopelessness. These symptoms often led to decreased motivation and a sense of detachment from the sport, which in turn affected their performance and overall well-being.

Previous studies, such as those by Phylactou (2019), Vernon (2018), and Neumann (2019), have emphasized the importance of mental techniques, mindfulness, and attentional concentration in enhancing athletic performance and managing stress. These studies have underscored how elite and non-elite athletes utilize mental resilience and self-regulation

strategies to cope with the demands of training and competition. In corroboration with these studies, the current research affirms that elite weightlifters also relied on mental techniques to manage their mental fatigue. The athletes highlighted the role of mindfulness and focused concentration as critical tools in maintaining performance levels despite their mental exhaustion. This finding strengthens the argument that mental skills training is a universal need across different levels of sport competition. However, the study also revealed that the impact of mental fatigue was broader, affecting athletes' emotions and well-being outside of sports. It emphasized the enduring psychological strain mental fatigue imposes on athletes, including chronic stress, burnout, and emotional exhaustion. These findings suggest that while mental skills are vital for athletes' performance, they are not enough to prevent mental burnout. Various factors from different aspects of athletes' lives also play pivotal roles in shaping these outcomes, potentially contributing to complete mental burnout over time.

Moreover, this study diverges from earlier research by providing a broader perspective on the sources and impacts of mental fatigue. While Russell et al. (2019) and Gustafsson et al. (2011) primarily examined mental fatigue in the context of training and competition settings, focusing on how these environments contribute to cognitive and emotional strain, the present study reveals that mental fatigue extends beyond these settings. The participants reported significant mental fatigue stemming from personal life stressors, such as family responsibilities and work commitments, which previous studies have largely overlooked. This holistic view suggests that mental fatigue in elite athletes is not merely a byproduct of their sporting activities but a pervasive issue affecting their overall life balance. Such insights call for an expanded framework in understanding and addressing mental fatigue, one that incorporates both the athletic and personal domains of an athlete's life. The significant impact of non-sport-related stressors on mental fatigue points to the necessity for comprehensive support systems that address the full spectrum of an athlete's life.

In summary, by integrating personal life stressors into the analysis, this research provides a more nuanced understanding of mental fatigue, suggesting that effective interventions must consider the totality of an athlete's experiences rather than isolating their sporting activities. Future research should continue to explore this holistic perspective, examining how various aspects of life interact to influence mental fatigue and overall well-being in elite athletes.

Strengths and Limitations

One of the strengths of this study is its phenomenological approach, which provides a good understanding of the athletes' lived experiences. This method allows for a detailed description of mental fatigue from the athletes' perspectives, offering valuable insights into the personal and contextual factors contributing to this condition.

However, the study also has limitations. The number of participants was relatively small, comprising only eight male weightlifters. This limits the generalizability of the findings to a broader population of athletes, including female weightlifters and those from different sports disciplines. Additionally, the study's reliance on self-reported data may introduce biases related to social desirability or recall inaccuracies. Future research could address these limitations by including more diverse groups of athletes and employing mixed-methods approaches to triangulate qualitative data with more objective measures of mental fatigue.

Applications / Recommendations for Future Research

The insights gained from this study have practical implications for coaches, sports psychologists, and weightlifting federations. Understanding the causes and impacts of mental fatigue can help in developing targeted interventions to mitigate its effects. Coaches can

Implement strategies to manage athletes' expectations and pressures, while sports psychologists can provide tailored support to address the emotional and psychological aspects of mental fatigue. Federations can enhance their support structures, ensuring that athletes have access to adequate facilities and staff, thereby fostering a more conducive environment for both physical and mental recovery.

Despite its contributions, this study leaves several questions unanswered. For instance, how do gender differences influence the experience and management of mental fatigue in weightlifters? What specific coping strategies are most effective in alleviating mental fatigue among elite athletes? Future research should explore these questions, employing larger and more diverse samples to capture a wider range of experiences and perspectives.

Additionally, longitudinal studies are needed to examine the long-term effects of mental fatigue on athletes' performance and well-being. Such research could provide valuable insights into the persistence and progression of mental fatigue, informing more effective interventions and support mechanisms.

In conclusion, this study highlights the critical issue of mental fatigue in elite weightlifting, emphasizing the need for comprehensive, multifaceted approaches to support athlete mental health. By addressing both the athletic and personal dimensions of mental fatigue, stakeholders can better support athletes in achieving sustainable performance and well-being.

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Appendix

Mental fatigue in weightlifting athletes. A phenomenological qualitative study

Interview Guide

- Aim of this Research (Introduction)
- Are you familiar with the term “mental fatigue”? How is mental fatigue conceived by you as an elite athlete?
 - I would like you to tell me if you have ever experienced a state of mental fatigue during a competition or during a preparation. How did you experience it?
 - What emotions did you face? What symptoms, both physically and mentally, did you experience?
 - Which causes do you believe that led you to a mental fatigue state?
- How were affected your daily life and habits in the sports context from this mental fatigue state? How did mental fatigue affect your performance?
- What challenges, physically and mentally, did you experience during a competition or a preparation?
- Outside the sport context, how was your daily life affected during that period?
- Did your surroundings (coach, family, friends) contributed negatively to the emergence of your mental fatigue?
- How did you try to recuperate after being mentally fatigued? Did you feel like you wouldn't be able to compete in an elite level again?
- Did you have support during that phase? Who would you approach to talk about it? Can you explain your thoughts about your choice?
- Did you manage to reach your previous levels of performance?
- How did you manage to equalize your rehabilitation in your performance with your daily life outside the sport context?
- Did you have help/support from the Hellenic Weightlifting Federation or other institutions?
- What could the competent federations/institutions do to help athletes facing mental fatigue?
- What ways of dealing with mental fatigue could you suggest to an elite athlete who face a similar situation?
- Would you like to add any information?
- Sum up