

RESEARCH ARTICLE

The need-thwarting ecology of officiating: A qualitative study of burnout among Greek basketball referees through a Self-Determination Theory Lens

Theodoros Rachiotis*^{ORCID}, Manolis Adamakis*^{ORCID}, Nektarios Stavrou^{ORCID}, and
Konstantinos Karteroliotis^{ORCID}

Department of Physical Education and Sport Science, School of Physical Education and Sport
Science, National and Kapodistrian University of Athens, Athens, Greece

Abstract

***Corresponding authors:**
Manolis Adamakis
(manosadam@phed.uoa.gr);
Theodoros Rachiotis
(theorax@phed.uoa.gr)

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Background: Burnout among basketball referees is an occupational health concern with implications for well-being, performance, and retention. Existing research remains largely quantitative and offers limited insight into how referees interpret the conditions that contribute to burnout and its consequences.

Objectives: This study explored burnout-related antecedents and perceived consequences among Greek national league basketball referees through Self-Determination Theory.

Methods: Semi-structured interviews were conducted with 10 Greek basketball referees. Interviews were conducted and transcribed in Greek, translated into English with iterative checking against the original transcripts, and analyzed using reflexive thematic analysis. NVivo 15 supported coding organization, audit-trail documentation, and matrix-based traceability. Self-Determination Theory was used as a sensitizing framework rather than as a fixed coding template.

Results: Six themes captured antecedents: emotional ambivalence and performance pressure; emotional and cognitive strain; institutional and evaluation pressure; criticism and burdened resilience; physical demands and health issues; and work-life conflict. Five themes described consequences: emotional and psychological strain; physical strain and health impact; social and family life interference; institutional and interpersonal pressure; and commitment, amotivation, and loss of identity. Across themes, referees' accounts reflected cumulative need frustration, linking controlling evaluation climates, competence-threatening scrutiny, and strained relationships to motivational erosion and exhaustion.

Conclusion: Burnout in basketball referees appears to develop through interacting demands that progressively undermine basic psychological needs and the quality of motivation. SDT-informed interventions should target autonomy-supportive evaluation, competence-supportive feedback, and recovery protection, and relatedness-supportive peer structures.

Keywords: Burnout; Basketball referees; Self-Determination Theory; Basic psychological needs; Reflexive thematic analysis; NVivo

1. Introduction

Burnout is a well-known occupational health issue defined as a psychological syndrome of chronic exhaustion, cynicism (depersonalization), and reduced personal accomplishment resulting from prolonged work stress.¹⁻³ Originally studied in human services professions, the concept was later extended to sport contexts, including athletes, coaches, and referees.⁴⁻⁶ In sport psychology, athlete burnout has been widely investigated over the past few decades, but referees have received comparatively limited research attention.⁷ In this article, broader sport-burnout evidence is used to situate refereeing within sport populations, while referee-specific evidence is prioritized wherever available.

Referees operate in unique high-pressure environments that distinguish their experiences from those of athletes.⁸⁻¹⁰ For example, basketball referees have to make split-second decisions under intense public scrutiny and often face direct interpersonal conflict with players, coaches, and spectators.¹¹⁻¹³ These stressors place referees at risk for burnout and other mental health challenges, yet the topic of referee burnout remains under-examined.^{2,14,15} Existing studies, though limited, indicate that basketball referees experience a range of stressors that can contribute to burnout.^{5,16,17} External stressors such as verbal abuse from coaches or fans, confrontations with players, and organizational pressures (e.g., scheduling and evaluation demands) are commonly reported.^{11,18,19} Internal stressors like the fear of making a wrong call or the pressure of always being perfectly positioned on the court also weigh heavily on referees.²⁰⁻²² Over time, repeated exposure to these pressures without adequate support may lead to the hallmark symptoms of burnout: emotional exhaustion, depersonalization or cynicism, and diminished achievement or efficacy.^{23,24} In the context of refereeing, emotional exhaustion might manifest as feeling too mentally fatigued to face another contentious game, depersonalization as a cynical attitude toward players or the sport, and reduced accomplishment as doubts about one's competence or impact.²⁵

Although the precise prevalence of burnout among sports referees is not well established, there is evidence that many referees experience elevated stress and some degree of burnout during their careers.^{26,27} A recent systematic review found that high-pressure officiating environments and lack of organizational support put referees at significant risk of poor mental health outcomes such as anxiety, depression, and burnout.³ Key risk factors for referees' psychological distress include younger age and fewer years of experience, as well as frequent exposure to verbal or physical abuse in the sporting environment.^{19,28}

Conversely, greater experience, higher officiating level, and strong feelings of competence may protect against burnout and stress.^{29,30} These findings align with sport-specific stress models, suggesting that referees face situational, relational, and organizational stressors that interact to influence their well-being.^{6,31} Notably, a recent scoping review of basketball referee burnout literature identified a handful of quantitative studies linking burnout to certain antecedents and outcomes.⁵ In sum, common antecedents and associated demands include interpersonal conflict, time-related pressures, physical load and recovery strain, and cognitive performance demands during decision making³²⁻³⁴, while reported consequences include declines in decision-making quality, reduced motivation and satisfaction, and increased intention to quit or leave officiating, with broader evidence also pointing to organizational and social support as relevant to retention.^{8,12} These results underscore that burnout can impair referees' mental health and compromise performance and retention.^{11,10,35}

In the present study, burnout is additionally examined through the lens of Self-Determination Theory (SDT), which proposes that sustained frustration of the basic psychological needs for autonomy, competence, and relatedness undermines self-determined motivation and well-being, thereby increasing vulnerability to burnout and psychological distress.³⁶⁻³⁸ This SDT lens is particularly relevant in basketball officiating, where evaluative, interpersonal, and organizational conditions may systematically support or thwart these needs, shaping both motivation quality and sustained engagement. From an SDT perspective, repeated exposure to scrutiny, conflict, and evaluative monitoring can be conceptualized as a need-thwarting context that challenges autonomy, competence, and relatedness, thereby shifting motivation toward more controlled forms and elevating burnout risk.^{39,40} This pattern is also consistent with SDT accounts in which persistent need frustration is associated with ill-being and disengagement, whereas need satisfaction supports vitality, internalization, and sustained role commitment.^{37,38} SDT provides a complementary interpretation of protective patterns in referees, as perceived competence and supportive relationships can be theorized as competence and relatedness need satisfaction, which SDT links to more autonomous motivation and better psychological functioning.^{36,39} Within an SDT lens, motivational outcomes such as reduced satisfaction, withdrawal intentions, and amotivation are conceptually consistent with chronic need thwarting in the domains of autonomy, competence, and relatedness.³⁷ In this study, need-thwarting is used to describe contextual conditions that obstruct autonomy, competence, and relatedness, whereas need frustration refers to referees' psychological experience when these needs are undermined.

Existing research on referee burnout has largely been cross-sectional and quantitative^{22,27}, offering limited insight into how referees interpret the pressures that lead to burnout and the consequences that follow.^{2,41} In particular, qualitative evidence specifically linking basketball referee burnout with SDT remains limited, especially regarding how referees describe contributing conditions and perceived consequences in their own terms.¹⁹ Understanding referees' personal narratives can provide rich context and inform more effective prevention and support strategies.^{41,42} Despite the expanding SDT literature across sport and work domains, SDT-informed qualitative accounts of referees' burnout remain scarce, particularly those that trace how need-supportive versus need-thwarting features of officiating environments are experienced and translated into burnout processes. The remaining gap is therefore threefold: limited qualitative evidence, limited basketball-specific evidence, and limited SDT-informed qualitative interpretation of how referees experience burnout.

The present study addresses this gap by exploring burnout experiences among experienced basketball referees officiating in Greek national leagues through a qualitative lens.^{43–45} Guided by SDT, the study examines how referees' accounts of role demands and organizational climates can be interpreted as experiences of autonomy, competence, and relatedness support or frustration, with implications for motivation quality and burnout vulnerability.³⁶ Focusing on two primary research questions: (i) factors contributing to burnout and (ii) the perceived consequences of burnout, this research provides an in-depth examination of burnout from the referees' perspective.^{6,29} By grounding the findings in referees' own words and comparing them to the current literature, we aim to enhance the understanding of referee burnout in the sport psychology and health domain, and to suggest practical implications for supporting these key sport stakeholders.

The theoretical contribution is not only the application of SDT to a new population, but the development of a qualitative account of a need-thwarting ecology of officiating: a process in which evaluation pressure, competence-threatening scrutiny, interpersonal hostility, workload strain, and social disconnection recursively shape need frustration and motivational erosion. In this sense, the study uses SDT to organize a process-oriented interpretation of referee burnout rather than merely to classify themes under autonomy, competence, and relatedness.^{4,46}

Taken together, the research gap addressed by the present study is therefore specific and threefold. First, the existing referee burnout literature is predominantly

quantitative and cross-sectional, leaving the lived processes through which referees experience and interpret burnout largely unexamined. Second, basketball-specific qualitative evidence is scarce, despite distinctive features of basketball officiating, such as high evaluative density, dual-referee coordination, and rapid decision making under proximate crowd pressure. Third, although SDT has been applied to sport and work burnout, qualitative SDT-informed accounts that trace, dynamically and process-oriented, how need-supportive versus need-thwarting features of the officiating environment translate into motivational erosion and exhaustion remain limited. The present study addresses this triadic gap by offering a process-oriented, theoretically anchored, and culturally situated qualitative account of burnout in basketball referees. The theoretical significance for health psychology is to refine SDT's explanatory reach by characterizing burnout as a recursive, ecological phenomenon driven by sustained need frustration rather than as the additive effect of isolated stressors, thereby extending need-thwarting theory beyond classical organizational and clinical contexts into a high-evaluation, public-facing occupational role. The practical significance is to identify modifiable, need-supportive levers within evaluation systems, peer cultures, recovery policies, and stakeholder conduct that can plausibly protect referees' mental health, occupational engagement, and retention, with relevance also extending to other scrutinized service occupations (e.g., healthcare workers, teachers, frontline public servants) in which evaluation pressure, interpersonal hostility, and work-life conflict converge.

2. Materials and methods

2.1. Design and epistemological positioning

This study utilized a qualitative research design to explore burnout in depth in the context of basketball officiating. A reflexive thematic analysis approach⁴⁷ was selected to identify patterns in referees' subjective experiences and interpretations of burnout. The researchers adopted a critical realist stance, acknowledging an external reality of burnout as a phenomenon while also recognizing that each referee's account provides a personally constructed perspective on that reality. In analytic practice, critical realism shaped two specific decisions. First, coding worked at both a semantic level (what referees explicitly described as causes and consequences of strain) and a latent level (institutional, relational, and motivational meanings that were implied rather than stated), so that the analysis could engage both the material conditions of officiating and the socially shaped meanings attached to them. Second, themes were treated as interpretive constructions of patterned meaning rather than as direct reflections of an

unmediated reality, consistent with the reflexive tradition of thematic analysis. The selection of a qualitative approach was grounded in the need to capture the depth of referees' subjective accounts, personal meanings, and emotional nuances, as well as the complex interplay of psychological, physical, organizational, and socio-cultural factors that cannot be fully represented through quantitative indicators alone, consistent with the principle of openness in qualitative inquiry.^{48,49} Within this positioning, accounts were treated not as simple recordings of "facts," but as meaning-making narratives shaped by the institutional and organizational context of Greek officiating, game conditions, and broader cultural norms surrounding Greek basketball.⁵⁰

2.2. Participants and sampling strategy

A purposive sample of 10 basketball referees was recruited for in-depth interviews. All participants were active referees officiating in Greek national basketball leagues, registered with the Hellenic Basketball Referees Federation (ODKE). Sampling followed criterion-based purposive selection (criterion sampling within purposive sampling), using predefined inclusion criteria linked to the study aims.⁵¹ These criteria included refereeing experience, level of recognition, representation of different competition levels, diversity in age, and, where feasible, gender, employment conditions (full-time and part-time), participation in educational or training initiatives, and willingness to engage in a time-demanding, in-depth interview process. The final interview sample comprised 10 basketball referees (nine men and one woman) and was designed to capture variation in career stage and officiating context. Participants ranged in age from 30 to 49 years (mean = 40.8, standard deviation [SD] = 5.81 years). Refereeing experience ranged from 12 to 27 years (mean = 18.10, SD = 4.86 years), supporting heterogeneity and maximum variation in career stage and role demands.⁵² The sample also included referees from different evaluation categories, including Category A and Category B. The decision to conduct 10 information-rich interviews was guided by the five dimensions of information power. First, the study's aim was relatively focused, namely to interpret how basketball referees experience and make sense of burnout, rather than to map a broad or heterogeneous phenomenon, which lowers the required sample size. Second, sample specificity was high: all participants were currently active referees in Greek national leagues, with substantial officiating experience and direct exposure to the phenomenon of interest, which increases the information value of each interview. Third, the analysis was theoretically anchored, since SDT functioned as a sensitizing framework that organized interpretation around autonomy, competence,

and relatedness, reducing the need for a very large sample to achieve conceptual density. Fourth, the quality of the dialogue was strong: interviews were conducted in participants' native language, in private settings, with established rapport and detailed probing of antecedents and consequences. Fifth, the analytic strategy was a case-oriented, in-depth, reflexive thematic analysis rather than a cross-case statistical strategy, which is consistent with a smaller, deeper sample. Together, these factors supported the judgment that 10 interviews provided sufficient information to answer the research questions.^{53,54} The decision to conduct 10 interviews was guided by the focused aim of the study, the specificity and experience of the participants, the quality and depth of the interview dialogue, the use of SDT as a sensitizing framework, and the analytic richness of the dataset.

Importantly, the qualitative phase was informed by a preliminary quantitative screening stage. An online questionnaire was distributed via Google Forms to 60 referees, with 30 completing the screening. The screening procedure included three burnout instruments, the Maslach Burnout Inventory (MBI, 22 items)⁵ and two adapted Burnout Inventory for Referees instruments (BIR Basic, 9 items; BIR Organizational Stress Focus, 9 items).⁴³ These quantitative indicators were not used as the sole inclusion criterion. They were combined with referees' self-reported lived experience of prolonged strain or burnout-related symptoms, and with a maximum variation logic to ensure diversity in age, experience, and officiating context. Consent was obtained separately for each study stage. Participation in the screening phase did not imply consent for the interview phase, and eligible individuals were reapproached for explicit consent to the interview, with a full briefing on recording, confidentiality, and withdrawal rights. This study was reviewed and approved by the Departmental Research Ethics and Bioethics Committee of the School of Physical Education and Sport Science, National and Kapodistrian University of Athens (Approval No. 1681; Date: 2024-10-16). All participants provided written informed consent prior to the interview, in accordance with the Declaration of Helsinki and the Greek Personal Data Protection Authority guidelines. The qualitative component of the study is reported in accordance with the Consolidated Criteria for Reporting Qualitative Research (COREQ) 32-item checklist⁵⁵, supplemented by the Reflexive Thematic Analysis Reporting Guidelines.⁵⁶ A completed COREQ checklist indicating the page and line numbers where each item is addressed is provided as Supplementary File Part A. In design terms, the screening stage functioned as recruitment support for identifying information-rich cases rather than as a separate quantitative analytic strand; screening indicators were

considered alongside self-reported prolonged strain and maximum-variation criteria. This use of brief quantitative indicators to support purposive sampling is consistent with qualitative sampling theory, where instruments can be used as a sampling resource to identify cases with high information value rather than as a confirmatory or hypothesis-testing component. The screening was not intended to test a model or to constrain interpretation; coding remained inductive, and SDT entered the analysis only later as a sensitizing framework. Within the study's critical realist positioning, the combined use of brief quantitative indicators (to locate referees with marked experience of strain or low-strain variation) and qualitative inquiry (to interpret the meaning of those experiences) is coherent: the screening provides access to relevant material reality, while the interview analysis examines the socially and institutionally shaped meanings attached to it. This design choice is therefore best read as methodologically integrated rather than as a hybrid mixed-methods analytic strategy.

2.3. Data collection

Data were collected through semi-structured, in-depth interviews conducted by the lead researcher. An interview guide was used to ensure coverage of key topics while allowing flexibility for referees to share their stories in their own terms. The guide included open-ended questions. The interview guide covered four main domains: perceived burnout-related pressures, physical and psychological consequences, social and professional effects, and motivational meanings relevant to autonomy, competence, and relatedness, without imposing SDT categories as fixed codes. The lead researcher kept reflexive notes on assumptions, field proximity, and possible influence on questioning and interpretation throughout data generation and analysis. In positionality terms, the lead researcher's prior scholarly familiarity with basketball officiating and burnout research was treated as both a resource for informed probing and a potential interpretive influence. Reflexive notes were therefore used to monitor assumptions about officiating pressure, institutional evaluation, and burnout, and to avoid allowing the SDT framework to predetermine participants' meanings.

A pilot interview was conducted prior to the main fieldwork to evaluate clarity, sequencing, and coverage of questions, and to refine the guide and practical procedure.^{57,58} Interviews were conducted in the participants' native language (i.e., Greek) to allow them to express themselves most comfortably and accurately. Each interview lasted approximately 30 to 45 min and was audio-recorded with permission. Recording was conducted either in person using an Android voice recording

application (Voice Recorder) or online via platforms with built-in recording capabilities (Zoom or Microsoft Teams), depending on feasibility and participant availability. Interviews were conducted in private, quiet settings to protect confidentiality and support open disclosure.⁵⁹ Pseudonymization was applied at transcription and analysis, with participants labeled using neutral identifiers (for example, P1 to P10), and any potentially identifying contextual details were removed or generalized.⁶⁰ The pilot led to minor refinements in question wording, sequencing, and follow-up prompts, without changing the substantive focus of the interview guide.

Interviews were conducted and transcribed verbatim in Greek; however, the analytic dataset was produced in English. Greek transcripts were translated into English by the first author using computer-assisted translation tools to generate initial drafts, followed by careful post-editing to preserve conceptual and contextual equivalence rather than word for word rendering.⁶¹ This approach acknowledges that translation is an interpretive act that can shape meaning in qualitative research.⁶² Translation was treated as iterative during coding and theme development, with wording refined when needed to maintain intended tone and culturally embedded meanings.⁶³ The original Greek transcripts were retained as an audit trail, and all quotations selected for reporting were systematically cross-checked against the Greek source text to minimize loss of idiomatic meaning and contextual nuance.⁶² Consistent with the flexible and reflexive logic of reflexive thematic analysis, which evaluates quality through reflexivity and transparency rather than prescriptive procedural checklists, we did not treat formal back-translation as a required validation step. Nevertheless, because translation can shape meaning, potential loss of idiomatic or culturally embedded nuance is acknowledged as a limitation.⁶⁴

2.4. Data analysis

The interview data were analyzed using reflexive thematic analysis, following Braun and Clarke's six-phase framework: (i) familiarization, (ii) initial coding, (iii) generating candidate themes, (iv) reviewing themes, (v) defining and naming themes, and (vi) producing the report.^{50,52} The lead researcher immersed himself in the transcripts and generated initial codes across the dataset. Coding and theme development were conducted primarily inductively (bottom up) for the research questions on causes and perceived consequences, so that themes were grounded in participants' accounts rather than imposed categories. Analysis moved across both semantic content (what was explicitly said) and latent meaning (underlying assumptions, implicit patterns), in line with a critical realist logic that recognizes both material conditions and socially shaped meaning-making.⁴⁷

Initial coding was conducted using NVivo (version 15, Lumivero, USA) qualitative analysis software. Using NVivo, meaningful units of text were coded and organized. Specifically, NVivo was used to: (i) create and refine a hierarchical structure of coding nodes corresponding to candidate and final themes; (ii) write analytic and reflexive memos linked to specific cases, codes, and themes; (iii) retrieve coded extracts on demand to compare similar accounts across cases and revisit boundary cases; (iv) run matrix coding queries to map the distribution of coded references across participants and themes for traceability purposes; and (v) organize an audit trail of analytic decisions, including a log of node renaming, merging, and splitting across analytic iterations. NVivo was used as an organizational and traceability tool, supporting systematic data management, retrieval of coded extracts, cross-case comparison, and transparent documentation of the analytic pathway through matrices and visualizations. It did not function as a co-analyst or a mechanism of validity confirmation. Codes and themes were generated by the researcher, with NVivo supporting an audit trail, not substituting interpretive work.^{65,66} Specifically, NVivo was used to construct coding nodes, retrieve coded extracts, organize analytic memos, generate participant-by-theme matrices, and document changes in the developing thematic structure. The analytic pathway from codes to themes proceeded through five identifiable, audit-trail-supported steps. Step 1, line-by-line semantic coding, generated 138 initial codes grounded in participants' explicit language (e.g., "fear of demotion", "weekend absence", "armor metaphor"). Step 2, latent re-coding, added interpretive codes capturing implicit motivational and institutional meanings (e.g., "controlled persistence", "burdened resilience", "need-thwarting evaluation") on a second pass through the dataset, with reflexive memos documenting each interpretive move. Step 3, code clustering, used NVivo's node hierarchy to group conceptually related codes into 22 candidate subthemes, with merging, splitting, and renaming decisions logged. Step 4, candidate theme construction, recursively reviewed coded extracts against the full dataset to consolidate the 22 subthemes into 11 candidate themes (six for research question [RQ] 1 and five for RQ2), with theme boundaries adjudicated through peer debriefing and revised when extracts straddled adjacent themes. Step 5, theme refinement, defined each theme around a central organizing concept (e.g., evaluation-as-controlling-climate rather than simply "evaluation") and tested its coherence by writing a one-paragraph thematic narrative and verifying that the supporting extracts cohered around that concept. Interpretive leaps from descriptive coding to theoretical interpretation (e.g., from "criticism causes anxiety" to "hostile interactions function

as relatedness frustration") were made explicit in reflexive memos and traced in Figures S1–S6 (Supplementary File Part B). Theme development was recursive, involving repeated movement between coded extracts, the full dataset, and the developing thematic structure. Themes were refined for internal coherence and clear boundaries from adjacent themes.⁵²

2.5. Quality and trustworthiness

Throughout the analysis, analytic memos were kept to record reflections, assumptions, and evolving interpretations.⁶⁷ Quality in the present study was pursued through criteria specific to reflexive thematic analysis, in line with the Reflexive Thematic Analysis Reporting Guidelines (RTARG), namely clarity of epistemological positioning (critical realism), explicit researcher reflexivity, transparency of analytic decisions, coherent use of inductive coding with SDT as a sensitizing framework, development of themes around shared meaning rather than topic summaries, and avoidance of positivist validation language such as coding agreement, saturation as a fixed endpoint, or single-route validity claims. Methodological quality was therefore not pursued through coding agreement statistics or fixed-codebook procedures. Consistent with reflexive thematic analysis, intercoder reliability statistics were not calculated and no fixed codebook was treated as a quality requirement, because the approach foregrounds researcher reflexivity, transparency, and the situated character of interpretation. Credibility was strengthened through structured peer debriefing, where emerging interpretations and theme boundaries were scrutinized to surface blind spots and refine analytic clarity. Quality was therefore pursued through reflexivity, transparency, analytic coherence, and evidentiary grounding rather than through coding agreement or consensus-based reliability. Peer debriefing was treated as reflexive analytic dialogue rather than as a consensus procedure: discussions focused on the coherence of theme boundaries, alternative interpretations of coded extracts, and whether candidate themes captured shared meaning rather than topic summaries.⁵⁰

Member checking was not used as a criterion of credibility, aligning with the reflexive thematic analysis position that is constructed through analytic work rather than simply verified by participants.⁵² Dependability and confirmability were supported through an explicit audit trail that documented key analytic decisions and the progression from codes to candidate and final themes. As part of this audit trail, NVivo exports and screenshots were archived and selectively included in the appendices as transparency devices, for example, coding summary views and coded reference views, without being treated as quantitative evidence (Figures S1–S4).⁶⁸ Transferability

was supported through a thick contextual description of the officiating environment and participant characteristics, enabling readers to judge relevance to other settings.⁶⁹

To strengthen reporting transparency, the manuscript was primarily checked against the RTARG, which are more closely aligned with Braun and Clarke's reflexive thematic analysis than generic qualitative checklists. COREQ was used only as a supplementary checklist for reporting the interview component.⁷⁰ In addition, participant $\times$ theme matrix coding queries were generated for RQ1 and RQ2 and are reported as traceability tools, showing the distribution of coded references across cases.⁷¹ These matrices are presented solely to demonstrate the breadth of evidentiary support and variation in emphasis across participants and were not used to infer the prevalence or importance of themes, consistent with reflexive thematic analysis. Figure S5 presents a participant-by-theme matrix for RQ1 to support analytic traceability. The matrix shows that the RQ1 themes draw on multiple interviews and that emphasis varies across participants, indicating heterogeneity in how referees experienced antecedent pressures. These counts are provided as transparency indicators rather than as quantitative evidence of importance. Figure S6 summarizes coverage of the RQ2 themes across participants. The matrix indicates that perceived consequences were expressed across multiple cases, while also showing differences in thematic emphasis between referees. The purpose of the matrix is to enhance transparency and demonstrate breadth of evidentiary support, not to rank themes by frequency (Figures S5 and S6). The RTARG framing was used to foreground methodological coherence, reflexive openness, theoretical clarity, theme development around shared meaning, and avoidance of positivist validation language.⁷²

3. Results

3.1. Factors contributing to burnout (research question 1): Reflexive thematic analysis interpreted through Self-Determination Theory

Following reflexive thematic analysis, the results are organized around the two research questions and prioritize participant accounts as evidence for shared patterns of meaning. SDT is used briefly within themes as a sensitizing interpretive lens, while broader process-level theorization is reserved for the Discussion. This structure separates descriptive thematic evidence from higher-order SDT synthesis and avoids treating autonomy, competence, and relatedness as pre-specified coding categories.^{52,72} Although the themes that follow are presented in a linear sequence dictated by text, the underlying interpretation is process-oriented rather than catalog-like. In referees' own

accounts, the six RQ1 antecedent themes and the five RQ2 consequence themes did not stand apart as independent stressors with discrete outcomes; instead, participants narrated them as a moving, mutually intensifying ecology. To preserve the depth of participant voices and avoid forcing accounts into pre-specified SDT slots, each theme is anchored in an extended participant narrative before any SDT interpretation is layered on top, and SDT language is introduced only after the participants' own meanings have been allowed to surface (Table S1, Supplementary File Part B).

3.2. Emotional ambivalence and performance pressure

Referees described a pre-game mix of anticipation and threat, strongly tied to error sensitivity and credibility concerns. Rather than approaching a match purely as a sporting event to be managed, participants often framed their preparation through a lens of vulnerability and defensiveness. For instance, a participant vividly captured this defensive posture, stating, "I feel like I am putting on armor before a battle, not like I am getting ready for a game" (Participant 3, personal communication, 13 May, 2025). This metaphor of "armor" illustrates the heavy psychological toll of anticipating conflict and hostility before stepping onto the court. This ambient anxiety is heavily amplified by an unforgiving margin for error; as P3 emphasized, "one mistake, one decision, can ruin the whole game" (Personal communication, 13 May, 2025). The narratives suggest that referees operate under the constant shadow of a single poor whistle, overshadowing an otherwise flawless performance. Briefly interpreted through SDT, this pattern suggests competence threat and partial autonomy restriction because perceived consequences and fear of failure undermine felt effectiveness and volitional engagement. A second participant similarly linked match importance with responsibility and concentration, noting that in an important game, the feeling is accompanied by "an increased sense of duty and concentration" (Participant 10, personal communication, 24 May, 2025).

3.3. Emotional and cognitive strain

Beyond acute anxiety, referees described sustained vigilance and cognitive effort as a persistent backdrop to officiating. The data reveal that the psychological burden is not merely about managing sudden spikes of conflict, but rather maintaining an exhausting, prolonged state of hyper-focus. Participants detailed a steady escalation of mental tension as game time approached. "Satisfaction and anxiety coexist from the beginning, with the brain gradually concentrating more and more, until it finally reaches the highest possible alertness at the moment of

the match” (Participant 8, personal communication, 20 May, 2025). This account highlights the intense internal labor required to achieve peak concentration, blending the inherent enjoyment of the sport with an overwhelming cognitive load (Figure S3). This experience of sustained vigilance was echoed across cases: P10 described the strain of “intense physical activity, constant concentration and lack of rest” that “strain the body, especially when the races are intense” (Personal communication, 24 May, 2025), while P5 reported that without positive feedback after a demanding match “self-confidence is affected and the next appearance is affected” (Personal communication, 16 May, 2025), indicating that the cognitive load is not contained within the single match but spills forward into subsequent assignments. From an SDT perspective, sustained hyper alertness can reflect ongoing need management under pressure, where high self-regulation demands and recurring competence evaluation reduce vitality and erode autonomous motivation over time, making exhaustion more likely even when the role remains valued.

3.4. Institutional and evaluation pressure

Evaluation practices were experienced as recurrent constraints that shaped the meaning of mistakes and the felt security of the role. Referees reported that the institutional gaze transforms standard match evaluations into high-stakes, punitive assessments that threaten their professional continuity. The fear of being sidelined is a constant pressure, as explicitly noted by P3: “If you do not do well, they will not put you back. Evaluation, grades, reports” (Personal communication, 13 May, 2025). Furthermore, participants feel this scrutiny is expanding well beyond the court. “Lately, this has become more and more intense, with written exams, physical fitness checks, educational video conferences...” (Participant 7, personal communication, 19 May, 2025). The institutional pressure was experienced consistently across cases, regardless of career stage. P10 specifically named the formal apparatus, “the evaluation and observation process, such as the evaluation by the Central Officiating Committee, increases this pressure” (Personal communication, 24 May, 2025), and P5 described feeling “the need to prove my worth, not to make mistakes” (Personal communication, 16 May, 2025) under institutional scrutiny, while P8 succinctly identified “pressure from institutional factors” as a primary source of in-match anxiety. This logic is consistent with SDT-oriented evidence in basketball referees showing links between need thwarting, amotivation, and emotional exhaustion. These accounts primarily capture referees’ perceptions of formal evaluation procedures and their informal meanings for security, fairness, and professional development.⁴⁴

3.5. Criticism and burdened resilience

Criticism from coaches, players, and spectators was framed as unavoidable but emotionally costly, requiring continuous self-regulation. Referees detailed how the constant barrage of judgment from multiple stakeholders creates a uniquely hostile workplace, forcing them to constantly build emotional walls. This normalization of verbal abuse and conflict is evident in P10’s observation that “Criticism from players, coaches and fans is an inevitable part of a referee’s role and is often quite intense...” (Personal communication, 24 May, 2025). However, accepting this reality does not neutralize its psychological impact. Instead of easily brushing off negativity, referees often internalize this hostility, which actively erodes their confidence during the game. As P2 confessed, “It causes me anxiety... because you create a doubt that something may have escaped me” (Personal communication, 10 May, 2025). Other accounts amplified the same pattern of internalized hostility and effortful self-regulation. P3 vividly described the punitive aftermath of a poor performance, “they are going to crucify you, they are going to put you on ice” (Personal communication, 13 May, 2025) and P7 reported needing to “filter out the well-intentioned and ill-intentioned comments” (Personal communication, 19 May, 2025) after each match, while P5 noted that even when criticism is “unfair or aggressive,” the work of remaining “calm and focused” is itself a burdensome psychological labor. Under SDT, hostile interactions and aggressive criticism can be read as relatedness frustration and competence undermining, which increases defensive self-monitoring and controlled coping.

3.6. Physical demands and health issues

Referees described chronic physical strain intensified by schedule density and limited recovery, with direct implications for perceived readiness. Participants framed physical strain as cumulative rather than merely temporary, especially when consecutive games, travel, and limited rest reduced recovery. “On a physical level, the days with consecutive matches are exhausting, especially on weekends” (Participant 10, personal communication, 24 May, 2025). P3 described the bodily toll similarly: “I feel it in my body too – pain in my knees, back, shoulders... and I am recovering more difficult” (Personal communication, 13 May, 2025). These accounts show how fatigue became psychologically meaningful when it reduced readiness, confidence, recovery, and perceived capacity to meet performance demands. This bodily toll was reported across cases. P7 noted that after demanding games the cumulative load produced “more physical fatigue” such that “all I want after the race is to go home and rest” (Personal communication, 19 May, 2025), P5 described “muscle

fatigue, difficulty concentrating and lack of energy” after consecutive matches, and P6 explained that “daily obligations exhaust me physically” to the point that the body “needs to be rested to perform properly” (Personal communication, 18 May, 2025). Briefly interpreted through SDT, accumulated fatigue can indirectly heighten burnout risk by weakening competence experiences and constraining autonomy when referees feel obliged to continue under suboptimal conditions.

3.7. Work-life conflict

This theme captured competing obligations and financial concerns, interpreted as autonomy constraints and controlled regulation pressures. Work and family demands were experienced as persistent constraints on preparation, recovery, and psychological availability for officiating. Participants painted a picture of lives constantly pulled in opposing directions, where the boundaries between the court, their primary jobs, and their homes dissolve into chronic stress. “Family and financial obligations often conflict with the demanding schedule of the games, and this can affect my performance” (Participant 10, personal communication, 24 May, 2025), indicating how off-court pressures directly compromise on-court focus and presence. This creates a pervasive sense of scarcity and guilt, where self-care and professional preparation feel illicit. P2 poignantly captured this dynamic, admitting, “I have to steal time all the time to train...” (Personal communication, 10 May, 2025). The same dynamic was reported across cases. P6 identified that “family and professional obligations cause more stress than competitive stress” (Personal communication, 18 May, 2025), P5 described how “family obligations or professional pressure can affect my concentration and performance” (Personal communication, 16 May, 2025), and P8 added that “financial, professional, personal problems exhaust the spirit of the referee” (Personal communication, 20 May, 2025) to the point of creating in-match distraction. Within SDT, these accounts point to increased controlled regulation and external contingencies, where continued involvement is shaped by obligation, time pressure, and financial constraints rather than volitional choice.

3.8. Perceived consequences of burnout (research question 2): Reflexive thematic analysis interpreted through Self-Determination Theory

In line with reflexive thematic analysis, the five themes are presented as interpretive accounts that integrate evidentiary extracts with SDT-based meaning making.⁷² Across themes, burnout was experienced as a multi-domain process in which autonomy, competence, and relatedness were progressively strained or frustrated, with

downstream effects on motivation quality, well-being, and sustained role commitment. Some themes overlap with RQ1 because participants described burnout as a reinforcing process in which several conditions operate as both antecedent pressures and consequences that intensify later strain (Table S2, Supplementary File Part B).

3.9. Physical strain and health impact

Referees described embodied consequences that extended beyond transient tiredness into persistent strain, pain, and stress-linked physiological reactions. Typical accounts emphasized cumulative musculoskeletal burden and slowed recovery, for example, “feel it in my body too – pain in my knees, back, shoulders. I am in pain more often than I used to, and I am recovering more difficult” (Participant 3, personal communication, 13 May, 2025), and load related tension, “If I have several matches in a short period of time, I may notice tension in my legs, waist and knees, stress in my muscles and joints.” (Participant 10, personal communication, 24 May, 2025). Acute somatic responses were also reported, such as “I have noticed headache and dizziness” (Participant 1, personal communication, 07 May, 2025) and “I feel my body tightening, my pulse picking up, and my breathing getting faster” (Participant 9, personal communication, 22 May, 2025). This theme is presented first to foreground the embodied dimension of burnout, while the following theme clarifies the central psychological and emotional consequences. Reported consistently across cases, these accounts indicate that physical consequences are not peripheral by-products but a continuous, embodied dimension of officiating burnout. Under SDT, these physical consequences are not only outcomes but also potential mechanisms that further undermine functioning, because reduced recovery and bodily readiness can constrain perceived competence and intensify controlled persistence, especially when referees feel obligated to continue performing despite strain.

3.10. Emotional and psychological strain

Emotional consequences were described as sustained mental exhaustion, self-doubt, and psychological burden, frequently coupled with the sense that pressure is inescapable. Referees described an internal landscape in which the persistent weight of their role drains their psychological reserves, leaving them constantly second-guessing their capabilities. Referees highlighted severe depletion states; for example, P5 frankly admitted, “I have experienced moments of emotional exhaustion, frustration, and self-doubt” (Personal communication, 16 May, 2025). This reveals that exhaustion is not just a fleeting reaction to a difficult game but a substantial strain on their professional confidence. This internalized

distress often spirals into a broader psychological burden that disconnects them from their environment and heightens their sense of vulnerability. P10 articulated this overwhelming constellation of symptoms, noting broader distress markers: “Feelings of isolation, insecurity, and doubt about my decisions, increased pressure, mental fatigue, and exhaustion are, in my opinion, some of the negative effects” (Personal communication, 24 May, 2025). The data suggests that for several referees, this cognitive and emotional toll eventually eclipses the physical demands entirely. Some accounts emphasized that the psychological load becomes the dominant form of exhaustion, as P8 noted: “I have found that the only exhaustion is the mental and psychological exhaustion...” (Personal communication, 20 May, 2025). This suggests that, for some referees, the psychological dimension of burnout was particularly salient in a high-stakes, scrutinizing environment.

The psychological register of these consequences was shared across cases. P1 spoke of “disappointment” as the main emotional difficulty, to the point of repeatedly considering withdrawal because “I do not see any development on the horizon” (Personal communication, 07 May, 2025). Interpreted through SDT, these accounts reflect a pattern of chronic need frustration: competence is repeatedly challenged by doubt and perceived evaluation pressure, autonomy is narrowed when referees feel they must endure and comply, and relatedness is threatened by isolation and lack of understanding. SDT predicts that such need thwarting shifts motivation toward controlled regulation and increases vulnerability to psychological distress and exhaustion. Notably, some participants also described adaptation, suggesting that resilience can emerge as a compensatory effort to stabilize functioning in persistently demanding contexts, rather than as a sign that strain is absent, a pattern consistent with SDT views that sustained need support is required for vitality, not merely endurance.

3.11. Social and family life interference

Burnout consequences extended into referees’ social ecology, including restricted social life, relationship strain, and progressive isolation. Social withdrawal was explicit, “Social life is restricted” (Participant 5, personal communication, 16 May, 2025), and prolonged absence from close relations was experienced as psychologically costly, “I have not seen my friends for a long time, my brother, my parents. This affects you a lot psychologically” (Participant 2, personal communication, 10 May, 2025). Family strain and conflict were repeatedly linked to time scarcity and absence, “The absence and pressure for understanding from the family can create emotional tension and cause problems in communication and mutual

understanding” (Participant 10, personal communication, 24 May, 2025), while other accounts captured the structural constraint of weekends and travel, “the referee does not have a free weekend... They can cause family grumbling, psychological pressure and also distance you from friends and acquaintances” (Participant 9, personal communication, 22 May, 2025). Analytically, scheduling-related social restriction should be distinguished from psychological social withdrawal, although both processes reduce opportunities for recovery and support. The erosion of social and family resources was reported across cases. P2 captured the cumulative interpersonal cost, “I have not seen my friends for a long time, my brother, my parents” (Personal communication, 10 May, 2025). Within SDT, these consequences are most directly interpretable as relatedness frustration, where reduced connection, support, and belonging deprive referees of a central psychological resource for sustaining well-being and internalized commitment.

3.12. Institutional and interpersonal pressure

A salient set of consequences concerned how burnout reshaped referees’ experiences of institutions and interpersonal relations, especially via perceived injustice, meritocracy concerns, and cooperation difficulties. Institutional disappointment was expressed in direct terms, “Injustice in terms of treatment in relation to other colleagues. Failure to recognize the effort and contribution of all the past years by institutional actors” (Participant 7, personal communication, 19 May, 2025), while internal inequity within the referee group was described as destabilizing, “When you see different treatment internally... it can frustrate you and disturb your peace of mind” (Participant 9, personal communication, 22 May, 2025). Interpersonally, burnout was linked to altered interactional style and cooperation, for example, “sometimes... I may become more aggressive and abrupt... which negatively affects my cooperation with them” (Participant 7, personal communication, 19 May, 2025), and “The pressure in a match affects the cooperation with coaches or players” (Participant 5, personal communication, 16 May, 2025). The interpersonal and institutional consequences were widely shared. P10, for example, noted that “feelings of isolation and lack of support can greatly affect both my performance and my peace of mind” (Personal communication, 24 May, 2025). Under SDT, perceived unfairness and lack of recognition can be interpreted as competence and autonomy undermining conditions: competence is weakened when effort is not acknowledged, and autonomy is constrained when evaluative systems are experienced as arbitrary or controlling. Interpersonal tensions and reduced cooperation reflect relatedness

strain, especially when the environment is experienced as hostile, competitive, or unsupportive. SDT predicts that such need thwarting climates are associated with controlled motivation, distress, and disengagement, providing a coherent mechanism for how institutional and interpersonal pressures become consequences and accelerators of burnout. This interpretation is also consistent with SDT-oriented evidence in basketball referees, where the need thwarting relates to amotivation and emotional exhaustion.

3.13. Commitment, amotivation, and loss of identity

Burnout consequences also appeared in motivational language, describing threatened commitment, shifting goals, and reconsideration of continued involvement. The data indicate that burnout fundamentally alters the referee's future orientation, replacing career aspirations with calculations about exit strategies. Some referees articulated explicit withdrawal ideation, linking their potential departure to a sense of stagnation rather than to fatigue alone. For these individuals, the effort required to officiate no longer yields the expected professional return, leading to thoughts of quitting: "I have thought many times to stop because I do not see any development on the horizon" (Participant 1, personal communication, 07 May, 2025) (Figure S4). Others framed commitment as increasingly conditional on career progression, treating their continued participation as a transaction that must remain profitable in terms of status or achievement. P10 described this transactional shift, noting: "I have thought of stopping or changing the time of my involvement in refereeing... a goal that if it cannot be achieved, will lead me to the corresponding decision" (Personal communication, 24 May, 2025). Yet commitment was often maintained through mixed motives, notably love for the role alongside economic contingencies. This indicates a form of continued involvement shaped by motivational tension, where referees remain engaged through a mixture of residual attachment, financial pressure, and perceived obligation rather than through entirely volitional choice. P7 highlighted this internal tug-of-war: "I have thought many times about quitting, but... the financial factor... and the love for basketball, have finally prevented me from implementing it" (Personal communication, 19 May, 2025). In this theme, loss of identity is interpreted cautiously as role identity strain: participants described blocked development, conditional commitment, and thoughts of withdrawal more directly than complete identity loss. This theme is cautiously interpreted through SDT as a pattern of motivational tension: continued involvement may shift from autonomous engagement to controlled regulation or amotivation when autonomy, competence, and relatedness are chronically frustrated.

4. Discussion

This study extends the literature on burnout in sport officiating by using SDT not only as an explanatory lens, but also as a process framework for conceptualizing burnout as part of a need-thwarting ecology of officiating. From this perspective, the contextual demands identified in RQ1 can be interpreted as contributing to the multidomain consequences reported in RQ2 by progressively frustrating autonomy, competence, and relatedness, with motivation shifting toward more controlled regulation and, in some accounts, amotivation. The integrative matrix presented in Table S3 (Supplementary File Part B) supports this synthesis by showing how antecedent pressures and perceived consequences are analytically connected across themes. The main contribution lies in showing that officiating demands may operate recursively: fatigue, social withdrawal, institutional disappointment, and reduced confidence do not merely follow burnout, but may also intensify the same need-frustrating conditions that contributed to burnout in the first place. This interpretation should be read as a theoretical synthesis of qualitative findings, not as a directly tested causal model.³⁷

A central finding concerns the threat to competence needs. Referees described error sensitivity, performance scrutiny, and the felt consequences of decisions as ongoing challenges to perceive effectiveness. Several RQ1 themes map strongly onto this threat: emotional ambivalence and performance pressure, as well as emotional and cognitive strain, are consistently linked in the matrix to rumination, self-doubt, and emotional exhaustion. From an SDT perspective, these outcomes reflect repeated experiences of inefficacy and error-sensitivity, in which the officiating role is experienced as a continual test of competence rather than a domain of mastery. As competence frustration accumulates, it plausibly intensifies cognitive depletion and undermines confidence (Table S3), downstream impairment in decision-making and recovery, and ultimately contributes to identity erosion and reduced commitment. Under SDT, repeated competence frustration is expected to reduce vitality and increase vulnerability to exhaustion and self-doubt, especially when feedback is experienced as punitive, unstable, or disproportionate to effort.³⁷ The present themes align with empirical SDT-oriented work in referees, indicating that motivational antecedents and need-related processes are linked to emotional exhaustion in basketball referees and to broader SDT accounts where need frustration predicts ill-being and disengagement³⁰. Importantly, competence strain was not confined to cognition or emotion: physical strain, limited recovery, and schedule density were found to constrain readiness and, in turn, indirectly weaken

perceived competence. This resonates with evidence that basketball referees' physical load and strain are shaped by competition demands and contextual conditions, which can plausibly interact with psychological functioning, leading to reduced recovery and diminished perceived efficacy.^{33,34}

Autonomy constraint emerged most clearly through institutional and evaluative climates. Referees described monitoring, grading, and appointment contingencies as structured pressures that narrowed perceived choice and heightened the sense of external control. It is important to distinguish here between the formal institutional procedures themselves (for example, written exams, fitness checks, grading systems, and appointment rules) and the referees' perceptions of those procedures as controlling, punitive, or unstable. The present qualitative findings primarily support the second of these: the study does not evaluate whether the procedures are objectively controlling, but it does provide evidence that they are experienced as controlling, with consequences for perceived autonomy and the quality of motivation. The "Institutional and evaluation pressure" row can be interpreted as a controlling environment that constrains autonomy.³⁸ In SDT terms, evaluation regimes that are perceived as punitive, unstable, opaque, or externally controlling increase external contingencies and reduce volitional functioning, thus shifting motivation from autonomous engagement to controlled persistence, which is typically associated with poorer well-being and greater burnout vulnerability. Work-life conflict similarly constrains autonomy by narrowing perceived choice and time resources, while also threatening relatedness by limiting family and social connections. These pressures reduce opportunities for restoration and need satisfaction outside officiating, thereby lowering overall vitality and increasing susceptibility to burnout, as the matrix indicates through converging pathways that lead to exhaustion, isolation, and motivational decline. The current findings add qualitative specificity by indicating that evaluation is experienced not merely as performance management, but as a psychosocial climate that shapes security, meaning, and the perceived consequences of imperfection.² SDT-informed work in occupational contexts similarly emphasizes that autonomy-supportive structures and transparent rationales protect motivation quality and reduce maladaptive outcomes, especially under changing or uncertain work conditions.³⁸ Financial pressure is treated here as a bridge between work-life conflict, institutional structure, and controlled motivation, because it shaped continued involvement as an obligation rather than a fully volitional choice.

Relatedness strain was especially salient in the theme

of criticism and in the consequences involving social and family interference and institutional and interpersonal pressure. It is analytically useful to anchor relatedness strain in two distinct result domains. The first is the domain of hostile sport interactions, including criticism, verbal abuse, and conflict with coaches, players, and spectators, as well as perceived unfairness in institutional treatment and reduced cooperation within the referee group. The second is the domain of reduced family and social connection, including time scarcity, absence from family and friends, and progressive isolation. Both can be read through SDT as relatedness frustration, and their co-occurrence helps explain why social support, which would normally buffer stress, is weakened on both sides at once. Persistent criticism, hostility, and perceived lack of support from key stakeholders can be interpreted as a climate that thwarts relatedness, reducing psychological safety and belonging and thereby weakening an important buffer against stress, while promoting withdrawal. The matrix shows that aggressive criticism fuels distress, increases arousal, and promotes withdrawal from support networks. Because relatedness is a key need for internalization and sustained motivation, its frustration can accelerate depersonalization-like distancing and reduce the buffering effect of social support.^{11,15} A distinctive contribution of the present analysis is that "mental resilience" appears as a burdened adaptation: coping becomes a compensatory strategy to maintain functioning under chronic relatedness threat rather than a sign of a genuinely supportive motivational climate. From an SDT viewpoint, coping that relies on emotional suppression and self-containment may preserve short-term functioning but does not substitute for sustained relatedness support, which SDT treats as foundational for internalization and durable commitment. This also helps explain why perceived isolation and reduced social contact appeared not only as outcomes but also as mechanisms that further intensify burnout by limiting recovery and support.⁷¹

The perceived consequences of burnout can be interpreted as forming a possible reinforcing pattern through the same SDT mechanisms. For example, physical depletion can constrain competence experiences, social withdrawal can reduce relatedness satisfaction, and chronic evaluation pressure can maintain autonomy restriction, thereby sustaining controlled regulation and facilitating motivational erosion. Finally, the RQ2 theme "Commitment, amotivation, and loss of identity" can be interpreted as the motivational endpoint of these need-thwarting pathways. SDT distinguishes not only the amount of motivation individuals have, but also its quality.³⁷ The reinforcing dynamic also resembles SDT developments that distinguish not only satisfied versus

frustrated need states but also broader states of diminished functioning linked to disengagement, providing useful conceptual vocabulary for describing how burnout can become self-maintaining over time.⁷¹ Taken together, the findings support an SDT-consistent interpretation in which burnout among basketball referees may emerge when the officiating ecology repeatedly undermines autonomy, competence, and relatedness, thereby shifting motivation quality and increasing vulnerability to exhaustion, disengagement, and withdrawal intentions. This theoretical framing complements and extends the largely quantitative officiating literature by clarifying how organizational climates, interpersonal treatment, and workload conditions are experienced as psychologically meaningful, and how those meanings translate into multi-domain consequences.⁴⁰ It also suggests that interventions should not focus exclusively on individual resilience training, but should also strengthen the need-supportive quality of the officiating environment. Evidence from SDT-informed intervention literature in sport and exercise indicates that autonomy-supportive practices and need-supportive climates are associated with better motivation quality and wellbeing, providing a principled direction for organizational redesign in officiating systems.^{41,44}

In sum, the present SDT-informed qualitative synthesis clarifies why burnout in basketball referees is multidimensional and persistent: the same pressures that generate exhaustion can also erode the need-supportive resources required for recovery, high-quality motivation, and sustained role engagement. This positions SDT as a theoretically coherent framework for interpreting both the antecedent conditions and the downstream consequences of burnout in officiating, while highlighting concrete leverage points for policy and practice within referee development and governance.

It is worth articulating directly what new insight the qualitative SDT lens offers here that a purely descriptive mapping of stressors onto autonomy, competence, and relatedness would not. Four contributions go beyond confirmation. First, the analysis reframes referees' coping not as a stable individual trait but as "burdened resilience," a compensatory adaptation that maintains short-term functioning while leaving relatedness and autonomy needs structurally unmet; this reconceptualization has direct implications for what counts as a successful intervention outcome and warns against confusing endurance with well-being. Second, by tracing referees' descriptions of evaluation, criticism, and physical strain across the temporal arc of an officiating week (pre-match, in-match, post-match, inter-match recovery), the SDT lens identifies need-thwarting not as a property of isolated events but

as a feature of the workflow itself, locating the relevant unit of intervention at the ecology level rather than the incident level. Third, the analysis surfaces a distinctively motivational endpoint that is invisible to standard burnout symptomatology: a transactional, conditional commitment in which referees remain engaged through a mixture of residual love for the role, financial necessity, and absence of viable alternatives (P7's "the financial factor... and the love for basketball, have finally prevented me from implementing it" [Personal communication, 19 May, 2025]). SDT's distinction between motivation quantity and quality is what makes this configuration visible and theoretically meaningful, where standard exhaustion-cynicism-efficacy measurement would record persistence rather than the controlled regulation that underlies it. Fourth, the lens identifies a feedback loop that is theoretically central to SDT but rarely traced empirically in officiating: that the consequences of need frustration (fatigue, isolation, doubt) degrade exactly the resources, relatedness contact, autonomous regulation, perceived competence, that would otherwise buffer the antecedents, so that burnout becomes self-maintaining unless its environmental ecology is restructured.

A further contribution concerns the limits of existing burnout questionnaires, both general occupational burnout measures and referee-specific burnout scales. The interviews showed that standardized instruments can capture important dimensions such as emotional exhaustion, reduced efficacy, stress, and organizational pressure, but they may not fully include the relational, institutional, and biographical meanings through which burnout is lived by referees. Participants' accounts foregrounded issues such as family strain, financial dependence, lack of time, collegial rivalry, perceived institutional weakness, lack of meritocracy, uneven recognition, age-related expectations, blocked career progression, appointment insecurity, travel burden, and the cumulative difficulty of combining refereeing with employment and personal life. The qualitative evidence therefore suggests that future measurement work on referee burnout should consider whether current scales sufficiently capture the broader ecology of officiating, including institutional trust, fairness, social belonging, financial vulnerability, career-stage pressures, and the interaction between family life, recovery, and role commitment.

5. Strengths and limitations

A key strength of this study is the SDT-informed reflexive thematic analysis, which enabled a theoretically coherent interpretation of burnout as a multidomain process of frustration of basic psychological needs. Methodological rigor was strengthened through a transparent audit trail,

including analytic memoing, peer debriefing, and NVivo-supported traceability from coded extracts to themes. The use of NVivo theme tables and participant-per-theme matrices as transparency devices further supports evidentiary breadth and interpretive accountability. The qualitative sampling strategy, informed by a preliminary screening stage and combining purposive criterion sampling, facilitated the recruitment of information-rich cases while retaining maximum variation across age, experience, and officiating context.

Several limitations should be considered when interpreting these findings. First, the qualitative sample was small ($n = 10$), context-specific (Greek basketball officiating), and predominantly male, limiting transferability to other leagues, cultures, and gender groups. Second, participants were selected through purposive procedures informed by a prior screening phase, which likely increased the proportion of information-rich cases but may also have overrepresented referees with elevated burnout indicators and salient negative experiences. Third, the interviews were self-reported and retrospective, meaning accounts may be influenced by recall processes, current role conditions, and narrative framing. Fourth, the analytic dataset was produced through translation, as interviews were conducted and transcribed in Greek but coded and thematized in English. Although quotations selected for reporting were cross-checked against the Greek source text, no formal back-translation was undertaken, and some idiomatic, culturally embedded, or affectively nuanced meanings may not have been fully retained. Verbs and nouns drawn from registers of military or moral struggle (e.g., the “armor before battle” metaphor used by P3) carry, in Greek, intertextual resonances with cultural narratives of endurance, honor, and exposure to public judgment that an English rendering tends to flatten into a generic stress metaphor. Because reflexive thematic analysis is interpretive rather than literal, these translation shifts may have subtly biased theme construction toward more clinical, individualized framings of distress and away from the relational, moral, and culturally inflected meanings participants attached to their experiences. The use of iterative post-editing, cross-checking against the Greek source, and retention of the original transcripts as an audit trail mitigated, but did not eliminate, this risk. Future work using bilingual coding teams, parallel Greek and English coding of a subset of transcripts, and member reflection on translated quotations would help triangulate the meanings recovered here and clarify which elements of the present interpretation are robust across linguistic versions and which are conditioned by the language of analysis. The gender composition of the sample (nine men and one woman) deserves further consideration in its

own right. Although this distribution reflects the marked male predominance of Greek national league refereeing, it constrains what the present findings can claim about how burnout is experienced by women officials. As a result, the present findings may underestimate or partially mischaracterize the relatedness and autonomy dynamics experienced by women referees, who often navigate additional layers of scrutiny, skepticism about competence, and exclusion from informal peer support.²⁸

Women constitute approximately 10% of registered referees in Greek basketball officiating, so the 9:1 male-to-female ratio in the present sample broadly mirrors the gender distribution of the underlying population rather than reflecting a sampling bias. Female under-representation is, moreover, markedly sharper at elite levels: across the entire history of the men’s EuroLeague, only one or two women have officiated, on the order of a few per cent of the active panel. This population-level imbalance, however, does not eliminate the analytical limitations of an effectively single-case representation of women’s experiences within the study. More critically, the predominantly male composition constrains the scope of the findings in three substantively important ways that the analysis can only signal rather than resolve. With respect to relatedness, peer cultures in male-dominated refereeing communities tend to operate through informal in-group cohesion that simultaneously fosters belonging among insiders and excludes those marked as outsiders by gender, age, or career origin. Because most participants spoke from positions of relative insider status, the relatedness narratives reported here may overstate the buffering capacity of peer ties and understate the specific relatedness frustration experienced by women, early-career, or otherwise minoritized officials who are less reliably included in those informal networks. With respect to autonomy, male officials are more likely to be granted interpretive latitude when making controversial calls, whereas women officials frequently report that their decisions are read as evidence of gendered competence deficits rather than as routine judgment under uncertainty. The autonomy strain documented here may therefore look qualitatively different (more intense, more conditional, more publicly attributional) for women officials, and the present account cannot capture that asymmetry. With respect to competence, the single woman participant’s account, while internally rich, cannot stand as representative of women referees’ experiences and is not used here to support gendered claims. The implication is that the need-thwarting ecology of officiating proposed in this study should be read as a model of the predominantly male officiating environment, and future work with gender-balanced and intersectional samples is required to assess whether the same recursive dynamics hold, whether

additional thwarting mechanisms operate for women and other under-represented groups, and how need-supportive interventions should be calibrated to address gendered inequities in evaluation, peer inclusion, and public attribution of error.

6. Practical Implications

Practical implications follow directly from the SDT framing: effective prevention should target not only individual coping skills, but also the need-supportive quality of the officiating environment. At the organizational level, referee governance systems should reduce controlling features of evaluation and appointments and strengthen autonomy support through transparent criteria, consistent feedback practices, and communication that provides rationale and developmental guidance rather than punitive uncertainty. Competence support can be strengthened by structured mentoring, calibrated performance feedback, decision-making education that emphasizes learning trajectories, and workload policies that protect recovery and physical readiness, particularly during dense scheduling periods. Relatedness support requires deliberate community-building mechanisms, including peer debriefing routines, psychologically safe discussion spaces after high-conflict matches, and visible institutional backing when referees face abuse or intimidation, alongside enforceable anti-abuse policies and stakeholder education. For individual referees, SDT-consistent strategies include prioritizing recovery and physical readiness to protect competence experiences, using reflective self-regulation techniques that reduce rumination and self-doubt, and actively seeking relatedness resources through peer support rather than coping in isolation.

Rooted in the specific institutional and cultural context of Greek basketball officiating, the present findings translate into a more concrete set of practical priorities than generic SDT-informed recommendations would suggest. First, participants' accounts repeatedly identified the appointment and grading apparatus of the ODKE as the proximate source of perceived autonomy constraints. A Greek-specific implication is therefore to publish, for each season, the criteria and weights used in appointment decisions and category promotions, to formalize an appeals or clarification route for individual evaluations, and to separate developmental feedback from punitive grading so that referees can interpret each evaluation as informational rather than sanctioning. Second, the cultural prominence of public scrutiny in Greek sport, amplified by sports media, social media, and intense fan participation in the national leagues, makes hostile post-match exposure a routine feature of the role rather than an exceptional event. A context-specific implication is

for ODKE and league authorities to provide structured post-match psychological recovery support, including a formal communication protocol after high-conflict matches and a confidential peer-debriefing channel staffed by senior referees with mental-health-first-aid training. Third, the family-life conflict described by participants is shaped by the Greek competitive calendar (weekend-heavy scheduling, long-distance domestic travel, often combined with full-time non-refereeing employment) and by the centrality of family obligations in Greek social life. A targeted implication is to revise scheduling rules to protect a minimum number of weekends per season for family commitments, to subsidize or coordinate travel logistics, and to formally recognize referees' primary employment by limiting last-minute appointment changes. Fourth, the financial precarity many participants described, in a context where refereeing fees are modest relative to time and travel demands, sustained controlled motivation (continued involvement out of necessity). A Greek-specific implication is to review the fee and reimbursement structure with reference to actual time-on-task and travel burden, and to consider career-stage-graduated remuneration linked to professional development milestones rather than only to match quantity. Fifth, the criticism culture surrounding Greek officiating, including from coaches, club officials, and media commentators, can be addressed through enforceable codes of conduct, stakeholder education delivered through coaching and club licensing pathways, and visible institutional defense of referees subjected to abuse. Together, these recommendations move beyond generic resilience training and target the specific need-thwarting features of the Greek officiating ecology revealed in this study.

Although the present study focuses on basketball referees, its findings carry broader implications for health and occupational psychology research on burnout in scrutinized, evaluation-intensive, public-facing occupations. The need-thwarting ecology proposed here is not specific to officiating; rather, it identifies a configuration of work conditions, ongoing public scrutiny, performance-contingent evaluation, hostile interpersonal exposure, dense and irregular scheduling, and family-life encroachment that recurs across a range of professional roles. In healthcare, for example, frontline clinicians face evaluation regimes (audits, complaints procedures, mortality and morbidity reviews), patient and family hostility, dense on-call scheduling, and chronic moral distress that map onto the same autonomy, competence, and relatedness threats identified in referees' accounts. In school teaching, classroom observation systems, parental complaints, and standardized testing pressures, combined with after-hours preparation and grading, generate

analogous need-thwarting dynamics. The recursive process documented here, in which the consequences of burnout further degrade the psychological resources required to withstand its antecedents, is therefore a candidate general mechanism for understanding why burnout in these occupations tends to be self-maintaining and resistant to individual-level interventions. From a mental-health-research perspective, the implication is that occupational burnout is most usefully studied not as the additive effect of discrete stressors but as a dynamic, ecology-level phenomenon driven by sustained frustration of basic psychological needs. Comparative research that examines whether the recursive need-thwarting dynamics identified here generalize across professional contexts, and whether need-supportive structural interventions yield reductions in burnout, distress, and turnover, is a promising direction for occupational health psychology.

7. Future research

Future work can build on this SDT-informed account in ways that strengthen explanatory power, test mechanisms, and inform intervention. First, mixed-method and longitudinal designs should examine how autonomy, competence, and relatedness satisfaction or frustration fluctuate across a season, and how these trajectories predict emotional exhaustion, controlled regulation, amotivation, and withdrawal intentions. Second, quantitative studies with larger and more diverse samples should test the integrated model, including the mediating role of motivation regulation between need states and burnout outcomes, and the moderating role of organizational climates and abuse exposure. Third, intervention studies are a priority. SDT-consistent interventions could include autonomy-supportive evaluation and feedback training for referee supervisors, structured competence-supportive mentoring, and relatedness-supportive peer debriefing routines, with outcomes tracked at the levels of burnout symptoms, wellbeing, decision-making confidence, and retention. Fourth, future research should extend beyond basketball and beyond a single country to compare need-thwarting features of officiating environments across sports and cultures, including dedicated attention to women referees and early-career referees who may experience different need pressures and support resources. Fifth, studies that combine qualitative accounts with objective indicators, such as match density, travel load, sleep disruption, and physical workload metrics, could clarify how physiological strain interacts with competence perceptions and motivational quality under SDT. Future studies should also adopt gender-responsive and, where possible, intersectional designs to examine how gender norms, authority expectations, hierarchy, and inclusion

practices interact with autonomy, competence, and relatedness in officiating contexts.²⁸

8. Conclusion

Our findings respond directly to the study's two guiding questions by synthesizing the qualitative findings with SDT. First, the factors that contributed to burnout were not reducible to workload alone. Instead, referees described converging pressures that challenged perceived competence, constrained autonomy through controlling evaluation and appointment systems, and strained relatedness through hostile criticism and weakened support. Viewed through SDT, these patterns can be interpreted as a need-thwarting ecology in which autonomy, competence, and relatedness are progressively frustrated, shifting motivational regulation toward more controlled forms and increasing vulnerability to exhaustion and cynical distancing. Second, the perceived consequences of burnout were multidomain (spanning emotional, physical, social, and institutional domains) and functionally reinforcing. Crucially, these consequences were not merely endpoints. They undermined the very resources that could buffer stress, such as confidence in decision making, emotion regulation capacity, recovery practices, and supportive belonging, thereby increasing the likelihood of motivational erosion, conditional commitment, and movement toward amotivation and identity strain. SDT helps interpret this escalation as a possible process in which consequences further intensify need frustration, making burnout more persistent and harder to reverse without changes in the social and organizational environment.

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Conflict of interest

The authors declare no conflict of interest. No author currently holds a paid position within the Hellenic Basketball Referees Federation (ODKE) or any other body with direct authority over the evaluation, appointment, or remuneration of the participants.

Author contributions

Conceptualization: Theodoros Rachiotis

Data curation: Theodoros Rachiotis

Formal analysis: Theodoros Rachiotis

Investigation: Theodoros Rachiotis

Methodology: Theodoros Rachiotis

Project administration: Theodoros Rachiotis

Validation: All authors

Writing–original draft: Theodoros Rachiotis

Writing–review & editing: All authors

Ethics approval and consent to participate

This study was reviewed and approved by the Departmental Research Ethics and Bioethics Committee of the School of Physical Education and Sport Science, National and Kapodistrian University of Athens (Approval No. 1681; Date: 2024-10-16). Written informed consent was obtained from all participants prior to the interview, in accordance with the Declaration of Helsinki. Because the study is a non-interventional qualitative investigation rather than a clinical trial, prospective registration in a clinical trial registry was not applicable.

Consent for publication

All participants provided informed consent for the publication of the findings derived from this study. Where applicable, participants gave explicit permission for the publication of any data, images, or information that could potentially reveal their identity. The authors affirm that all relevant consent forms have been obtained and are available upon request.

Availability of data

The qualitative component of this study is reported in accordance with the Consolidated Criteria for Reporting Qualitative Research (COREQ) 32-item checklist, supplemented by the Reflexive Thematic Analysis Reporting Guidelines (RTARG). A completed COREQ checklist, indicating the page and line numbers where each item is addressed, is submitted as Supplementary File Part A.

The qualitative datasets generated and analyzed during the current study (interview transcripts in Greek and their post-edited English versions) are not publicly available because they contain potentially identifying information about a small, professionally identifiable population of Greek national league basketball referees, and participants did not provide consent for public release of their full transcripts. De-identified, partially anonymized excerpts that informed the reported themes are available from the corresponding author upon reasonable request, subject to a data-sharing agreement, ethics committee approval for secondary use, and removal of any residual identifying information. The NVivo project file, coding hierarchy, analytic memos, and matrix coding outputs that constitute the analytic audit trail are likewise available from the corresponding author upon reasonable request, in line

with standard practice for qualitative research where full data release would compromise participant confidentiality.

Further disclosure

In the preparation of this manuscript, the authors used Claude 3.5 Sonnet for language polishing and improving the readability of the English-language text, including grammatical corrections, phrasing suggestions, and consistency checks across drafts. Artificial intelligence tools were not involved in study design, data interpretation, coding, theme construction, or the derivation of core conclusions.

No figures, tables, or scales reproduced or adapted from copyrighted sources are included in this manuscript without documented permission. Figures S1–S6 and the integrative Table S1 were generated by the authors from the present study's NVivo project and analytic outputs and are original to this work.

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