

Factors Contributing to Anxiety in Athletes with Disabilities: A PRISMA-Based Systematic Review

Ni Wayan Bintang Mida Suputri¹, I Gusti Ayu Putu Wulan Budisetyani², Ni Made Swasti Wulanyani³

¹Master's Program in Exercise Physiology, Faculty of Medicine, Udayana University, Bali, Indonesia

^{2,3}Department of Psychology, Faculty of Medicine, Udayana University, Bali, Indonesia

Corresponding author:

Name: Ni Wayan Bintang Mida Suputri

E-mail: bintangmida13@gmail.com

Phone: +62 813-3766-6514

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Abstract

Background: Athletes with disabilities are vulnerable to competitive anxiety that may negatively affect performance and psychological well-being. Evidence regarding factors contributing to anxiety in disability sports remains fragmented.

Objective: This systematic review aimed to identify factors contributing to anxiety among athletes with disabilities.

Methods: A PRISMA-based systematic review was conducted using PubMed, ScienceDirect, and Google Scholar databases between March 4 and March 10, 2026. Observational studies published between 2021 and 2026 involving athletes with disabilities and anxiety-related outcomes were included. Five studies involving 482 athletes were analyzed using narrative synthesis. Methodological quality was assessed using the Newcastle–Ottawa Scale (NOS). Three studies demonstrated low risk of bias, whereas two showed moderate risk.

Results: Anxiety among athletes with disabilities was influenced by internal and external factors. Internal factors included mental toughness, intrinsic motivation, perceived competence, injury and illness status, sleep quality, and age. Greater mental toughness was associated with lower competitive anxiety ($r = -0.498$; $p < 0.05$), whereas injury, illness, and poor sleep quality increased anxiety symptoms ($p < 0.05$). Athletes participating in individual sports demonstrated significantly higher anxiety levels than those participating in team sports ($p = 0.009$).

Conclusion: Anxiety in athletes with disabilities is a multidimensional phenomenon influenced by psychological, physical, and environmental factors. Despite moderate-to-high methodological quality, heterogeneity and predominantly cross-sectional designs limited causal interpretation. Multidisciplinary psychological support may help reduce anxiety and optimize athletic performance.

Keywords

Anxiety; Athletes; Disability; Sports Psychology; Systematic Review

Introduction

Participation in competitive sports among athletes with disabilities has increased substantially over the past decade, reflecting broader advances in inclusivity, adaptive sports systems, and international Paralympic development programs. Athletes with disabilities now actively participate in regional, national, and international sporting competitions, including the ASEAN Para Games and Paralympic Games, demonstrating that physical limitations do not preclude high athletic achievement.¹ The growing competitiveness of disability sports has also increased scientific attention toward factors influencing athletic performance and psychological well-being in this population. Similar to non-disabled athletes, sports performance among athletes with disabilities is influenced by technical, tactical, physical, and psychological factors.² Among these determinants, psychological readiness has emerged as a critical component affecting performance consistency, emotional adaptation, and long-term athletic development.

Competitive anxiety is one of the most frequently discussed psychological constructs in sports psychology because of its substantial influence on athletic performance and mental well-being.³ Competitive anxiety refers to emotional, cognitive, and physiological responses characterized by excessive worry, nervousness, apprehension, and heightened arousal before or during competition.⁴ Moderate anxiety may enhance alertness and competitive preparedness; however, excessive anxiety can impair concentration, motor coordination, decision-making ability, and performance consistency.⁵ Contemporary multidimensional anxiety theory classifies competitive anxiety into cognitive anxiety, somatic anxiety, and self-confidence components.⁶ Cognitive anxiety is characterized by fear of failure, negative expectations, and excessive concern regarding performance outcomes, whereas somatic anxiety involves physiological symptoms such as sweating, increased heart rate, and muscle tension.⁷ Self-confidence may function as a protective factor capable of reducing the negative impact of anxiety during sports competition.

The multidimensional nature of anxiety becomes particularly relevant in athletes with disabilities because they often experience additional physical, social, and environmental stressors beyond ordinary competitive demands.⁸ Athletes with disabilities frequently encounter barriers related to accessibility, discrimination, social stigma, financial limitations, and inadequate institutional support systems.⁹ Furthermore, participation in elite disability sports may generate additional psychological pressure associated with performance expectations, classification systems, social evaluation, and the responsibility to represent marginalized communities.¹⁰ These challenges may contribute to increased vulnerability to anxiety symptoms and psychological distress among athletes with disabilities.

Several recent studies have reported that anxiety in athletes with disabilities is associated with multiple internal and external factors. Internal factors such as mental toughness, intrinsic motivation, perceived competence, sleep quality, injury status, and illness have demonstrated significant relationships with anxiety severity.^{11,12} Athletes with greater mental resilience and perceived competence generally demonstrate lower competitive anxiety levels, whereas injury, illness, and poor sleep quality are associated with increased psychological distress.¹³ In addition, external factors including sport type, educational level, and competitive demands

may influence emotional adaptation and anxiety responses during competition.¹⁴ Athletes participating in individual sports have been reported to experience higher anxiety levels than those participating in team sports because of greater individual responsibility and performance pressure.

Despite growing interest in psychological well-being among athletes with disabilities, current evidence regarding anxiety determinants remains fragmented across different sports disciplines and study populations. Previous systematic reviews have primarily focused on general psychological well-being, mental health outcomes, or sports participation among individuals with disabilities rather than specifically synthesizing factors contributing to anxiety in competitive disability sports.¹⁵ Existing literature also demonstrates substantial heterogeneity regarding participant characteristics, anxiety assessment instruments, and reported contributing factors. Consequently, there remains limited evidence synthesis specifically addressing multidimensional factors contributing to anxiety among athletes with disabilities within competitive sports settings.

From a biopsychosocial perspective, anxiety among athletes with disabilities may result from complex interactions between psychological resilience, physical condition, environmental stressors, and social experiences.¹⁶ However, current literature has not comprehensively synthesized how these multidimensional factors interact to influence anxiety in disability sports populations. This gap limits the development of evidence-based psychological interventions and multidisciplinary athlete support strategies tailored specifically to athletes with disabilities. Understanding modifiable factors associated with anxiety is important for coaches, physiotherapists, sports psychologists, and multidisciplinary sports teams to optimize emotional adaptation and athletic performance.

Therefore, this PRISMA-based systematic review aimed to identify and synthesize factors contributing to anxiety among athletes with disabilities based on recent observational studies. Using the PICOS framework, this review focused on athletes with disabilities participating in competitive sports (Population), factors associated with anxiety (Interest), anxiety-related outcomes including competitive, cognitive, and somatic anxiety (Outcome), and observational study designs (Study Design). Specifically, this review sought to answer the following research question: "What factors contribute to anxiety among athletes with disabilities in competitive sports settings?"

Methods

This study was conducted as a PRISMA-based systematic review following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines.¹⁷ The review aimed to identify and synthesize factors contributing to anxiety among athletes with disabilities based on recent observational studies. Because the study involved analysis of previously published literature without direct human participation, formal ethical approval was not required. The review protocol was not prospectively registered in PROSPERO, which should be considered a methodological limitation.

The review question was developed using the PICOS framework. The Population included athletes with disabilities participating in competitive sports, including Paralympic and para-sport athletes from individual and team sports. The Interest component involved internal and external factors associated with anxiety. Comparison was not specifically defined because most included studies employed observational designs without comparator groups. Outcomes included competitive anxiety, cognitive anxiety, somatic anxiety, and anxiety-related psychological distress. Eligible Study Designs included cross-sectional, correlational, and prospective cohort studies.

A systematic literature search was conducted in PubMed, ScienceDirect, and Google Scholar between March 4 and March 10, 2026. PubMed was selected because of its strong coverage of biomedical and psychological literature, whereas ScienceDirect was included because it indexes journals related to sports science, rehabilitation, and health sciences. Google Scholar was used as a supplementary database to minimize the risk of missing potentially relevant studies; however, it was not used as the primary database because of lower indexing specificity and increased risk of retrieval bias.

The search strategy combined Medical Subject Headings (MeSH) terms and free-text keywords related to anxiety and disability sports using Boolean operators. The primary search strategy was as follows: ("anxiety" OR "competitive anxiety" OR "sports anxiety") AND ("athletes with disabilities" OR "disabled athletes" OR "Paralympic athletes" OR "para sport" OR "para-athletes"). Additional manual screening of reference lists from eligible studies was conducted to identify potentially relevant articles not captured during database searching.

Eligible studies were observational studies published between January 2021 and March 2026 in English or Indonesian. Studies were included if they involved athletes with disabilities participating in competitive sports and reported anxiety-related outcomes, including competitive, cognitive, or somatic anxiety. Only full-text articles employing cross-sectional, correlational, or cohort designs were considered eligible for inclusion. Studies focusing on non-athlete populations, recreational physical activity, qualitative designs, intervention studies, narrative reviews, systematic reviews, conference abstracts, or articles with incomplete full texts were excluded from the review.

The article selection process followed the PRISMA framework consisting of identification, screening, eligibility, and inclusion stages. A total of 1,430 records were identified through database searching, including PubMed (n = 320), ScienceDirect (n = 410), and Google Scholar (n = 700). After duplicate removal (n = 335), 1,095 studies remained for title and abstract screening. During the screening stage, 1,083 articles were excluded because they were published before 2021 (n = 655), lacked relevance to the review topic (n = 320), used review-based methodologies (n = 78), or had incomplete full-text availability (n = 30). Twelve articles underwent full-text eligibility assessment, and seven studies were excluded because they did not specifically analyze anxiety-related factors or did not involve athletes with disabilities. Finally, five studies met all eligibility criteria and were included in the narrative synthesis.

Study selection and eligibility assessment were performed manually by the authors based on predefined inclusion and exclusion criteria. Independent dual-reviewer screening and inter-rater agreement assessment were not conducted, which may increase the risk of selection bias. Any disagreements during article selection were resolved through discussion among the authors until consensus was achieved.

Data extraction was conducted systematically using a standardized extraction framework developed by the authors. Extracted variables included author names, publication year, country, study design, participant characteristics, sample size, sports category, anxiety assessment instruments, investigated contributing factors, and principal findings related to anxiety outcomes.

Methodological quality assessment was conducted using the Newcastle–Ottawa Scale (NOS) adapted for observational studies. The NOS assessment evaluated participant selection, comparability, and adequacy of outcome assessment. Studies scoring 7–9 points were categorized as high quality with low risk of bias, studies scoring 5–6 points were considered moderate quality with moderate risk of bias, and studies scoring ≤4 points were categorized as low quality with high risk of bias. Because most included studies employed cross-sectional designs, a modified NOS version for observational studies was applied.

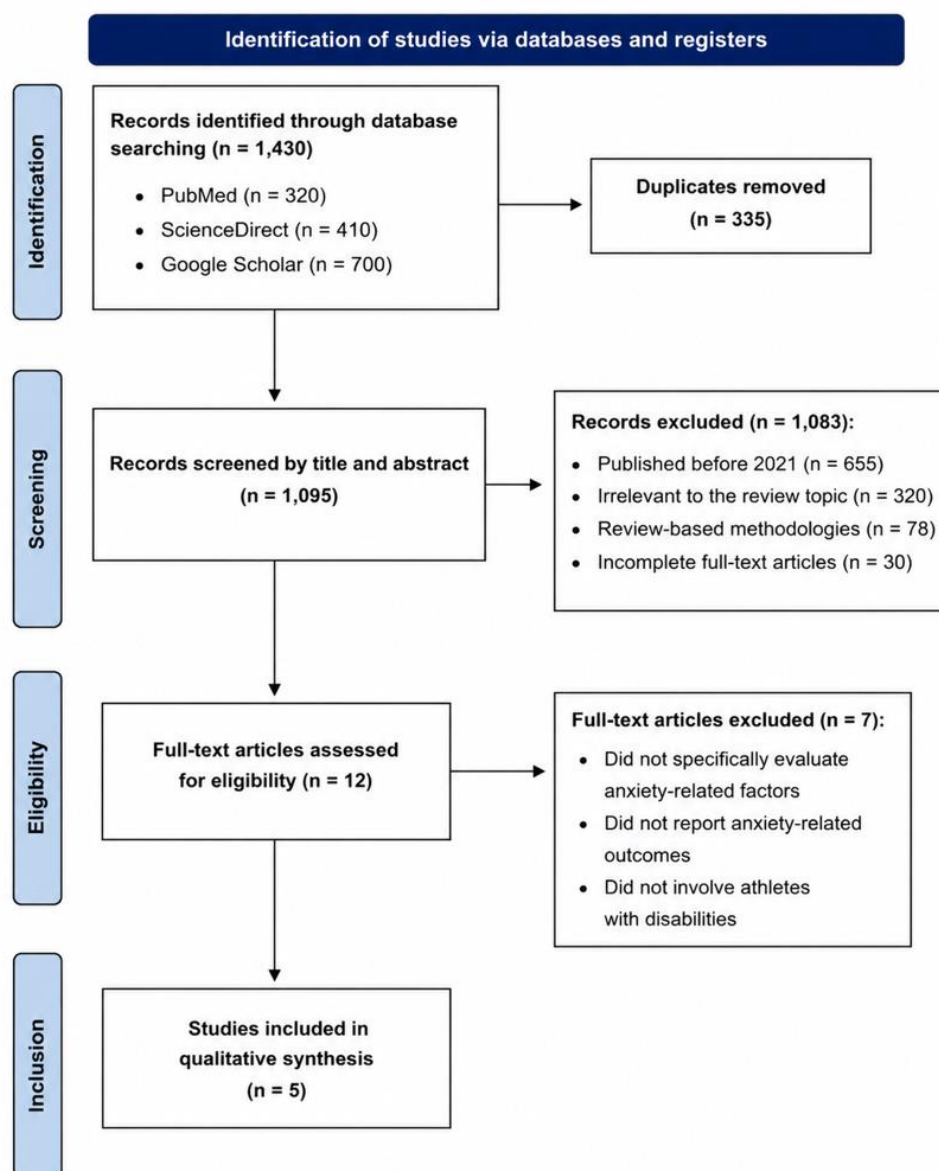
The included studies used several validated psychological instruments to assess anxiety and related psychological variables. Competitive anxiety was primarily measured using the Competitive State Anxiety Inventory-2 Revised (CSAI-2R), Sport Anxiety Scale (SAS), and Depression Anxiety Stress Scale-21 (DASS-21). Mental toughness was assessed using the Mental Toughness Scale, whereas intrinsic motivation was evaluated using the Intrinsic Motivation Inventory (IMI). Sleep-related variables were measured using the Pittsburgh Sleep Quality Index (PSQI) and Epworth Sleepiness Scale (ESS). These instruments have previously demonstrated acceptable validity and reliability in sports psychology research.^{18–21}

Narrative synthesis was used because of substantial heterogeneity across studies regarding participant characteristics, sports disciplines, anxiety assessment instruments, and outcome measures. Meta-analysis was not performed because the included studies demonstrated methodological variability and insufficient homogeneity of effect estimates. Data synthesis was conducted by categorizing contributing factors into internal and external domains. Internal factors included psychological and physiological variables such as mental toughness, intrinsic motivation, perceived competence, injury status, illness, sleep quality, and age. External factors included sport type, educational level, and competitive demands.

Despite following PRISMA-based procedures, several methodological limitations should be acknowledged. The review was not prospectively registered in PROSPERO, independent dual-reviewer screening was not performed, and formal certainty-of-evidence evaluation using GRADE was not conducted. Additionally, the small number of eligible studies and substantial methodological heterogeneity limited quantitative synthesis and reduced the overall generalizability of findings.

Results

The systematic literature search identified 1,430 records from PubMed, ScienceDirect, and Google Scholar published between January 2021 and March 2026. After duplicate removal and eligibility screening, five observational studies met the inclusion criteria and were included in the final qualitative synthesis. The included studies involved a total of 482 athletes with disabilities from various Paralympic and adaptive sports disciplines. Overall, the included studies demonstrated that anxiety among athletes with disabilities was influenced by multidimensional internal and external factors involving psychological resilience, physical condition, and environmental pressures within competitive sports settings.



To improve reporting transparency and facilitate comparison across studies, the characteristics of included studies are summarized in Table 1.

Table 1. Characteristics of Studies Included in the Systematic Review

Author	Country	Study Design	Participants	Sport Type	Anxiety Instrument	Main Contributing Factors
Magfiroh & Jannah (2022)	Indonesia	Correlational	30 athletes with disabilities	Mixed sports	Mental Toughness Scale, Competitive Anxiety Scale	Mental toughness
Da Silva et al. (2021)	Brazil	Cross-sectional	37 wheelchair handball athletes	Team sport	IMI, SAS	Intrinsic motivation, perceived competence, competitive pressure
Bentzen et al. (2025)	Norway	Prospective cohort	59 elite para-athletes	Mixed sports	PHQ-4	Injury, illness, sleep duration
Marín-González et al. (2022)	Colombia	Cross-sectional	334 Paralympic athletes	Individual and team sports	CSAI-2R	Age, sport type, educational level
Muñoz-Hinrichsen et al. (2025)	Chile	Cross-sectional	22 para-athletes with cerebral palsy	CP football	DASS-21, PSQI, ESS	Age, sleep quality, competitive demands

The included studies demonstrated methodological heterogeneity regarding participant characteristics, sports disciplines, psychological assessment instruments, and investigated variables. Four studies used cross-sectional or correlational designs, whereas only one study employed a prospective cohort design. Anxiety outcomes were commonly assessed using validated instruments such as the Competitive State Anxiety Inventory-2 Revised (CSAI-2R), Sport Anxiety Scale (SAS), and Depression Anxiety Stress Scale-21 (DASS-21).

Methodological quality assessment using the Newcastle–Ottawa Scale (NOS) demonstrated that most included studies exhibited moderate-to-high methodological quality. Three studies were categorized as high quality with low risk of bias, whereas two studies demonstrated moderate quality with moderate risk of bias. Common methodological limitations included relatively small sample sizes, insufficient adjustment for confounding variables, and the predominance of cross-sectional study designs. Detailed NOS assessment results are presented in Table 2.

Table 2. Newcastle–Ottawa Scale Quality Assessment of Included Studies

Study	Selection (max 4)	Comparability (max 2)	Outcome/Exposure (max 3)	Total Score	Quality Grade	Risk of Bias
Magfiroh & Jannah (2022)	3	1	2	6	Moderate	Moderate risk
Da Silva et al. (2021)	4	1	2	7	High	Low risk
Bentzen et al. (2025)	4	2	3	9	High	Low risk
Marín-González et al. (2022)	4	2	2	8	High	Low risk
Muñoz-Hinrichsen et al. (2025)	3	1	2	6	Moderate	Moderate risk

The highest methodological quality was demonstrated by the prospective cohort study conducted by Bentzen et al., primarily because of stronger participant follow-up procedures, adequate outcome assessment, and better adjustment for potential confounding variables. Conversely, studies categorized as moderate quality demonstrated limitations related to sample representativeness and limited control of confounding factors.

To facilitate synthesis and interpretation, the contributing factors identified across studies were categorized into internal and external domains. Internal factors referred to psychological and physiological variables originating from the athletes themselves, whereas external factors involved sport environment and competition-related influences.

Several studies demonstrated that psychological resilience significantly influenced anxiety levels among athletes with disabilities. Magfiroh and Jannah reported a significant negative relationship between mental toughness and competitive anxiety ($r = -0.498$; $p < 0.05$), indicating that athletes with greater mental toughness experienced lower anxiety levels during competition. Similarly, Da Silva et al. found that higher perceived competence was associated with lower somatic anxiety symptoms among wheelchair handball athletes. These findings suggest that positive psychological adaptation may function as a protective factor against competitive anxiety.

Intrinsic motivation also demonstrated a significant relationship with anxiety outcomes. Athletes with stronger intrinsic motivation and greater perceived competence generally reported lower anxiety symptoms and improved psychological readiness during competition. However, competitive pressure was positively associated with anxiety severity, indicating that heightened performance expectations may increase psychological distress among athletes with disabilities.

Physical health conditions emerged as additional contributors to anxiety. Bentzen et al. reported that athletes experiencing illness ($p < 0.001$) or injury ($p = 0.007$) demonstrated significantly higher anxiety symptoms than healthy athletes. Athletes with shorter sleep duration or impaired sleep quality also showed increased anxiety symptoms ($p < 0.001$). Similar findings were reported among para-athletes with cerebral palsy, where poor sleep quality was associated with elevated psychological distress during competitive periods.

Age-related findings demonstrated some variability across studies. Marín-González et al. reported that athletes aged ≤ 25 years demonstrated significantly higher cognitive ($p = 0.02$) and somatic anxiety ($p = 0.001$) than older athletes. Conversely, Muñoz-Hinrichsen et al. observed higher anxiety prevalence among adult para-athletes than younger athletes. Despite these differences, both studies suggested that age-related psychological adaptation and competitive experience may influence anxiety responses in disability sports.

Sport type was consistently associated with anxiety outcomes. Athletes participating in individual sports demonstrated significantly higher anxiety levels than athletes participating in team sports ($p = 0.009$). Individual sport athletes also reported greater somatic anxiety symptoms, possibly because competitive outcomes rely more heavily on individual performance without collective team support.

Educational level was another factor associated with anxiety severity. Athletes with lower educational attainment demonstrated higher cognitive anxiety levels than those with higher educational backgrounds. These findings suggest that educational experience may influence coping ability, emotional regulation, and adaptation to competitive stress.

Competitive demands and environmental pressure also contributed substantially to anxiety among athletes with disabilities. Several studies reported that athletes experienced psychological pressure related to intensive training schedules, performance expectations, classification systems, and social evaluation during competition. Athletes competing at elite or international levels frequently reported concerns regarding performance consistency and public expectations associated with disability sports participation. To improve thematic clarity and synthesis organization, the contributing factors identified across studies are summarized in Table 3.

Table 3. Summary of Internal and External Factors Contributing to Anxiety in Athletes with Disabilities

Category	Contributing Factors	Reported Association with Anxiety
Internal Factors	Mental toughness	Higher mental toughness associated with lower anxiety
	Intrinsic motivation	Greater intrinsic motivation associated with lower anxiety
	Perceived competence	Higher competence associated with lower somatic anxiety
	Injury and illness	Increased anxiety symptoms
	Sleep quality	Poor sleep associated with higher anxiety
	Age	Younger or less experienced athletes tended to report higher anxiety
External Factors	Sport type	Individual sports associated with higher anxiety
	Educational level	Lower education associated with greater anxiety
	Competitive demands	Greater pressure associated with increased anxiety

Overall, the findings indicate that anxiety among athletes with disabilities is influenced by interacting psychological, physiological, and environmental factors. Although several contributing variables were consistently identified across studies, methodological heterogeneity and predominance of observational cross-sectional designs limited direct comparison between studies and precluded quantitative meta-analysis. The overall certainty of evidence was therefore considered moderate.

Discussion

This PRISMA-based systematic review synthesized recent evidence regarding factors contributing to anxiety among athletes with disabilities. Overall, the findings demonstrated that anxiety in this population is a multidimensional phenomenon influenced by interacting psychological, physiological, and environmental factors. The included studies consistently showed that internal factors, such as mental toughness, perceived competence, injury status, sleep quality, and age, as well as external factors, including sport type, educational level, and competitive demands, contribute substantially to anxiety severity among athletes with disabilities. The overall certainty of evidence was considered moderate because most included studies demonstrated moderate-to-high methodological quality according to Newcastle–Ottawa Scale assessment, although substantial methodological heterogeneity remained across studies.

One of the most consistent findings identified in this review was the protective role of mental toughness and perceived competence against anxiety. Athletes with greater psychological resilience demonstrated lower levels of competitive anxiety, suggesting that mental adaptability may improve emotional regulation and coping ability during competition.¹⁸ These findings are consistent with previous sports psychology literature indicating that mentally resilient athletes demonstrate stronger attentional control, stress tolerance, and self-efficacy under pressure. Mental toughness may reduce maladaptive cognitive responses by improving confidence and facilitating more adaptive interpretations of stressful competitive situations. Similarly, athletes with greater perceived competence tend to perceive competition as a challenge rather than a threat, thereby reducing cognitive and somatic anxiety symptoms. This interpretation aligns with self-determination theory, which identifies competence as an essential psychological need associated with intrinsic motivation, emotional stability, and psychological well-being in athletes.²²

The relationship between intrinsic motivation and anxiety identified across included studies further highlights the importance of psychological engagement in disability sports participation. Athletes with greater intrinsic motivation generally reported lower anxiety levels and better psychological readiness during competition. Intrinsic motivation may facilitate positive emotional adaptation because athletes participate in sports for enjoyment, personal development, and self-achievement rather than solely external validation.²³ However, the findings also demonstrated that heightened competitive pressure and external expectations were associated with increased anxiety severity. This finding suggests that motivational processes may become maladaptive when athletes perceive excessive performance demands or social evaluation.

Athletes with disabilities may be particularly vulnerable to this form of psychological pressure because they frequently encounter additional sociocultural burdens beyond ordinary sports competition. Previous literature has demonstrated that para-athletes often experience disability-related stigma, social expectations, and pressure to continuously demonstrate competence within broader sports environments.²⁴ Consequently, anxiety among athletes with disabilities should not be interpreted exclusively as an individual psychological problem but also as a multidimensional response shaped by environmental and sociocultural factors.

Physical health conditions also emerged as important contributors to anxiety. Athletes experiencing injury or illness consistently reported greater anxiety symptoms than healthy athletes. These findings are supported by previous evidence indicating that injury-related uncertainty, fear of performance decline, and recovery-related concerns may negatively influence psychological well-being in athletes.²⁵ Among athletes with disabilities, the psychological impact of injury may be amplified because physical impairments and sport-related injuries may interact to further reduce functional independence and sports participation. Additionally, poor sleep quality and shorter sleep duration were consistently associated with increased anxiety symptoms across several included studies. Sleep disturbance is known to impair emotional regulation, stress recovery, and cognitive processing, thereby increasing vulnerability to psychological distress.²⁶ Elite athletes with disabilities may be particularly susceptible to sleep-related problems because of pain, musculoskeletal discomfort, travel demands, intensive training schedules, and disability-specific physiological conditions.

Age-related findings demonstrated variability across studies, reflecting heterogeneity in participant characteristics and competitive experiences. Some studies reported greater anxiety among younger athletes, whereas others identified higher anxiety prevalence among adult para-athletes. Younger athletes may experience increased anxiety because of limited competitive experience, fear of evaluation, and developmental psychological instability.²⁷ Conversely, adult athletes with disabilities may experience additional pressure related to career expectations, social responsibility, and long-term disability management. These findings suggest that age alone may not directly determine anxiety severity but rather interacts with psychological maturity, competitive experience, and contextual stressors.

This review also demonstrated that athletes participating in individual sports generally experienced higher anxiety levels than athletes involved in team sports. Previous research similarly reported that athletes in individual sports often demonstrate greater

cognitive and somatic anxiety because performance outcomes depend predominantly on individual responsibility and performance consistency.²⁸ In contrast, team sports may provide greater emotional support, collective coping strategies, and shared responsibility during competition. For athletes with disabilities, social connectedness within team environments may further improve emotional resilience and reduce feelings of isolation during competitive periods.

Educational level was another factor associated with anxiety severity. Athletes with lower educational attainment demonstrated higher anxiety symptoms than athletes with higher educational backgrounds. Although the underlying mechanisms remain unclear, higher educational experience may improve problem-solving ability, coping strategies, and psychological adaptability during stressful situations. Previous studies conducted during the COVID-19 pandemic similarly demonstrated that athletes with greater educational backgrounds showed better psychological resilience and emotional adaptation under stressful conditions.²⁹ Nevertheless, evidence regarding educational level remains limited, and further research is needed to determine whether education independently influences anxiety or merely reflects broader socioeconomic and support-related factors.

An important contribution of this review is the integration of findings within a biopsychosocial framework. The findings suggest that anxiety among athletes with disabilities results from complex interactions between psychological resilience, physical condition, environmental stressors, and social experiences rather than isolated variables alone.¹⁶ This integrative interpretation responds directly to previous reviewer concerns regarding insufficient theoretical synthesis and limited cross-study integration. The current evidence indicates that interventions aimed at reducing anxiety among athletes with disabilities should adopt multidimensional approaches integrating psychological skills training, emotional support, injury prevention, sleep management, and inclusive sports environments.

Several practical implications may be derived from these findings. Coaches, physiotherapists, sports psychologists, and multidisciplinary sports teams should routinely monitor psychological distress, sleep quality, injury status, and competitive pressure among athletes with disabilities. Mental skills interventions such as cognitive restructuring, mindfulness training, stress management, and resilience development may help improve emotional regulation and competitive readiness.³⁰ Additionally, organizational support systems and inclusive sporting environments may help reduce disability-related stigma and excessive performance pressure experienced by para-athletes.

Despite these important findings, several methodological limitations should be acknowledged. Most included studies employed cross-sectional designs, limiting causal interpretation between contributing factors and anxiety outcomes. Substantial heterogeneity was also identified regarding participant characteristics, sports disciplines, measurement instruments, and reported outcomes, which prevented quantitative meta-analysis and limited direct comparison across studies. Furthermore, several studies demonstrated moderate methodological quality because of relatively small sample sizes and limited adjustment for confounding variables.

This review itself also demonstrated several limitations. First, the review protocol was not prospectively registered in PROSPERO, potentially reducing methodological transparency. Second, independent dual-reviewer screening and formal inter-rater agreement were not performed, increasing the possibility of selection bias. Third, although methodological quality assessment was conducted using the Newcastle–Ottawa Scale, formal certainty-of-evidence evaluation using GRADE was not performed. Finally, publication bias may be present because studies reporting statistically significant findings are more likely to be published than studies reporting null results.

Nevertheless, this review provides clinically and scientifically relevant insights regarding anxiety among athletes with disabilities. By synthesizing recent observational evidence, the review highlights the importance of integrated multidisciplinary psychological support strategies tailored specifically to disability sports settings. Future studies should employ longitudinal and multicenter designs, standardized anxiety assessment instruments, and stronger methodological controls to improve evidence quality and facilitate more precise understanding of anxiety determinants among athletes with disabilities.

Conclusion

This PRISMA-based systematic review identified that anxiety among athletes with disabilities is influenced by multiple interrelated internal and external factors. Internal factors included mental toughness, intrinsic motivation, perceived competence, injury and illness status, sleep quality, and age, whereas external factors involved sport type, educational level, and competitive demands. Overall, the findings demonstrated that anxiety in athletes with disabilities is a multidimensional phenomenon shaped by psychological resilience, physical condition, and environmental pressure within competitive sports settings.

The included studies generally demonstrated moderate-to-high methodological quality according to Newcastle–Ottawa Scale assessment; however, the predominance of cross-sectional observational designs and methodological heterogeneity limited causal interpretation and reduced overall certainty of evidence. Despite these limitations, the available evidence consistently suggested that stronger mental resilience, better perceived competence, and adequate psychological adaptation may reduce anxiety symptoms, whereas injury, poor sleep quality, and excessive competitive pressure may increase vulnerability to psychological distress.

From a practical perspective, multidisciplinary support involving coaches, physiotherapists, sports psychologists, and medical teams may help optimize psychological well-being and athletic performance among athletes with disabilities. Strategies focusing on mental skills training, sleep management, injury prevention, emotional regulation, and inclusive sporting environments should be considered as part of athlete development and psychological support programs.

Future studies should employ longitudinal and multicenter designs, standardized anxiety assessment instruments, formal certainty-of-evidence evaluation, and stronger methodological controls to improve evidence quality and strengthen understanding regarding anxiety determinants in athletes with disabilities.

Author Contribution

Ni Wayan Bintang Mida Suputri: Conceptualization, Methodology, Data curation, Formal analysis, Investigation, Writing original draft.
I Gusti Ayu Putu Wulan Budisetyani: Writing review and editing, Supervision.
Ni Made Swasti Wulanyani: Writing review and editing, Supervision.

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Conflict of Interest Statement

The authors declare no conflict of interest.

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Ethics Statement

This study was a systematic review of previously published literature and did not involve direct human participation; therefore, formal ethical approval was not required. All included studies were conducted according to their respective institutional ethical standards.

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