



Mental health and psychological well-being among malaysian para-athletes: a gender-based analysis

Salud mental y bienestar psicológico entre los paraatletas malayos: un análisis basado en el género

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Received: 25-04-26

Accepted: 30-05-26

How to cite in APA

Munsif Wan Pa, W. A., Syazwan Zainal, M., & Hamid, R. (2026). Mental health and psychological well-being among malaysian para-athletes: a gender-based analysis. *Retos*, 82, 740-761.
<https://doi.org/10.47197/retos.v82.119448>

Abstract

Introduction: Mental health has become an important concern in elite sport, particularly among para-athletes who face the combined demands of high-performance competition and disability-related challenges. Despite growing attention to athlete mental health, limited evidence exists regarding the psychological functioning of Malaysian elite para-athletes.

Objective: This study examined depression, anxiety, stress, and eudaimonic psychological well-being among Malaysian elite para-athletes and investigated gender differences across these psychological outcomes.

Methodology: A quantitative cross-sectional design was employed involving 115 elite para-athletes representing various Paralympic sports in Malaysia. Participants completed the Depression Anxiety Stress Scale-21 (DASS-21) and the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS). Data were analysed using IBM SPSS Statistics Version 29. Descriptive statistics were used to summarise participants' psychological characteristics, while independent-samples t-tests were conducted to examine gender differences.

Results: Results indicated that Malaysian elite para-athletes generally reported low levels of depression, anxiety, and stress, alongside moderate-to-high psychological well-being. Independent-samples t-tests revealed no significant gender differences across all psychological variables ($p > .05$).

Discussion and Conclusions: Guided by Self-Determination Theory, this study contributes to the literature on mental health in elite adaptive sport and highlights the need for evidence-based psychological support to promote holistic development among high-performance para-athletes.

Keywords

elite para-athletes; mental health; psychological well-being; DASS-21; WEMWBS; Self-Determination Theory; Malaysia.

Resumen

Introducción: La salud mental se ha convertido en una prioridad en el deporte de alto rendimiento, especialmente entre los paradeportistas, quienes afrontan simultáneamente las exigencias de la competición de élite y los desafíos asociados a la discapacidad. A pesar del creciente interés por la salud mental de los deportistas, la evidencia sobre el funcionamiento psicológico de los paradeportistas de élite en Malasia sigue siendo limitada.

Objetivo: Este estudio examinó la depresión, la ansiedad, el estrés y el bienestar psicológico eudaimónico de los paradeportistas de élite de Malasia, además de analizar las diferencias según el género.

Metodología: Se empleó un diseño cuantitativo de corte transversal con 115 paradeportistas de élite pertenecientes a diferentes deportes paralímpicos. Los participantes completaron la Depression Anxiety Stress Scale-21 (DASS-21) y la Warwick-Edinburgh Mental Well-Being Scale (WEMWBS). Los datos se analizaron mediante IBM SPSS Statistics versión 29 utilizando estadísticas descriptivas y pruebas t para muestras independientes.

Resultados: Los resultados indicaron que los paradeportistas de élite de Malasia presentaron, en general, niveles bajos de depresión, ansiedad y estrés, junto con niveles moderados a altos de bienestar psicológico. Además, las pruebas t para muestras independientes no revelaron diferencias significativas entre hombres y mujeres en ninguna de las variables psicológicas evaluadas ($p > .05$).

Discusión y Conclusiones: Guiado por la Teoría de la Autodeterminación, este estudio contribuye a la literatura sobre la salud mental en el deporte adaptado de alto rendimiento y destaca la necesidad de implementar apoyo psicológico basado en la evidencia para promover el desarrollo integral de los paradeportistas de alto rendimiento.

Palabras clave

deportes adaptados; paradeportistas de élite; salud mental; bienestar psicológico; DASS-21; WEMWBS; Teoría de la Autodeterminación; Malasia.



Introduction

Over the past decade, mental health has emerged as one of the most significant priorities in elite sport, reflecting a paradigm shift from an exclusive focus on athletic performance towards a more holistic understanding of athlete development (Schinke et al., 2024; Lundqvist & Andersson, 2021). Although elite sport provides opportunities for physical excellence, social recognition, and personal achievement, it simultaneously exposes athletes to substantial psychological demands arising from intensive training, frequent competition, injury risk, performance expectations, organisational pressure, career uncertainty, and public scrutiny (Pilkington et al., 2024; Schinke et al., 2026). Increasing evidence indicates that these cumulative demands may elevate athletes' vulnerability to depression, anxiety, stress, emotional exhaustion, and psychological burnout, highlighting the importance of integrating mental health into contemporary high-performance sport systems (Myall et al., 2023; Schinke et al., 2024).

Traditionally, success in elite sport has been evaluated primarily through objective indicators such as medals, rankings, and competitive performance. However, recent developments within sport psychology increasingly recognise that sustainable athletic excellence cannot be achieved without safeguarding athletes' psychological health (Schinke et al., 2024; Danielsson et al., 2024). International sporting organisations have therefore expanded athlete welfare initiatives to include mental health promotion, psychological support services, and evidence-based interventions that foster both performance and long-term well-being (Mountjoy et al., 2025; Schinke et al., 2024). This shift reflects growing recognition that psychological functioning is not merely an outcome of successful performance but also a prerequisite for sustained athletic development and career longevity (Pilkington et al., 2024; Schinke et al., 2024).

Although substantial progress has been made in understanding mental health among elite athletes, considerably less attention has been devoted to elite para-athletes (O'Rourke, 2025; Meidl et al., 2024). Existing evidence suggests that para-athletes experience many of the same competitive demands as non-disabled elite athletes while simultaneously navigating disability-related challenges, including accessibility barriers, social stigma, functional classification, rehabilitation, and unequal access to sporting resources (Olive et al., 2021). Consequently, elite para-athletes operate within a unique psychosocial environment characterised by the interaction of disability and high-performance sport, requiring conceptual frameworks that extend beyond those developed for able-bodied athletes (Olive et al., 2022; Schinke et al., 2024).

Importantly, participation in adaptive sport should not be equated with participation in elite para-sport. Adaptive sport encompasses a broad spectrum of recreational, developmental, rehabilitative, and competitive activities designed to facilitate physical activity among individuals with disabilities. In contrast, elite para-athletes compete within highly structured high-performance systems characterised by rigorous training programmes, international qualification standards, classification procedures, athlete selection processes, performance monitoring, and continual expectations for competitive success (Legg et al., 2026). These distinctive sporting environments create psychological experiences that differ substantially from those associated with recreational participation, indicating that findings derived from general adaptive sport populations cannot automatically be generalised to elite para-athletes (Olive et al., 2021; Hardin & Pate, 2025).

Beyond mental health problems, contemporary sport psychology increasingly recognises psychological well-being as a multidimensional construct that reflects positive functioning rather than merely the absence of psychological illness. Mental health and psychological well-being are closely related but conceptually distinct constructs (Cilar, 2025). Whereas mental health commonly focuses on symptoms of psychological distress such as depression, anxiety, and stress, psychological well-being emphasises optimal psychological functioning, positive relationships, self-acceptance, purpose in life, competence, and the ability to realise one's potential. Consequently, an individual may experience certain levels of psychological distress while simultaneously maintaining meaningful psychological functioning and resilience (Akdag, Unsal, & Gurbuz, 2024). This distinction has become particularly important in elite sport because athletes frequently continue to perform successfully despite experiencing considerable psychological demands.



The present study conceptualises psychological well-being using the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS), which is grounded primarily within the eudaimonic tradition of well-being (Sarasjärvi, 2023). Unlike hedonic perspectives that emphasise happiness, pleasure, and life satisfaction, the eudaimonic perspective defines well-being as the successful realisation of human potential through positive functioning, psychological growth, autonomy, competence, meaningful interpersonal relationships, and purposeful engagement in life. Accordingly, WEMWBS measures positive psychological functioning rather than subjective happiness alone. This conceptual distinction is particularly relevant in disability sport because elite para-athletes often demonstrate resilience, determination, and purpose despite experiencing substantial competitive and disability-related challenges (Watson, 2026). Therefore, interpreting WEMWBS findings solely through literature concerning subjective well-being or life satisfaction would inadequately represent the broader dimensions of psychological functioning assessed by the instrument.

The theoretical foundation of the present study is provided by Self-Determination Theory (SDT), one of the most influential motivational theories in contemporary psychology (Rya & Deci, 2024). Originally developed by Deci (1975) and subsequently expanded by Deci and Ryan (1985), SDT proposes that optimal psychological functioning depends upon the satisfaction of three universal psychological needs: autonomy, competence, and relatedness. Over the past four decades, the theory has evolved considerably, with further conceptual refinements demonstrating that fulfilment of these basic psychological needs facilitates intrinsic motivation, psychological adjustment, resilience, and eudaimonic well-being across diverse educational, occupational, healthcare, and sporting contexts (Pincus, 2024). More recent developments emphasise that psychological well-being is not merely an outcome of successful performance but emerges through sustained satisfaction of these three psychological needs within supportive social environments (Slemp et al., 2024).

Within elite adaptive sport, SDT provides a comprehensive framework for understanding how participation may simultaneously promote psychological well-being while exposing athletes to significant psychological pressures (Standage, 2023). Para-athletes may experience autonomy through active involvement in training and competition, competence through mastery of sport-specific skills and athletic achievement, and relatedness through supportive relationships with coaches, teammates, sport psychologists, medical professionals, and family members (Zhang, 2024). Collectively, these experiences facilitate positive psychological functioning and strengthen emotional resilience despite the demands associated with elite sport. Conversely, when these basic psychological needs are undermined by excessive performance pressure, inadequate social support, injury, or barriers associated with disability, psychological distress may increase. Accordingly, SDT offers an appropriate theoretical lens for simultaneously examining mental health and psychological well-being among elite para-athletes (Zabala, 2024).

Another important consideration concerns potential gender differences in psychological experiences among para-athletes. Existing evidence regarding gender differences remains inconsistent across both conventional and disability sport literature. Some investigations report greater psychological vulnerability among female athletes, whereas others demonstrate higher psychological distress among male athletes arising from competitive expectations, athletic identity, and social norms surrounding emotional expression (Bissell, Chou, & Dirks, 2024). Within disability sport, these relationships become increasingly complex because gender intersects with disability status to shape athletes' lived experiences.

Rather than assuming that female para-athletes inherently possess superior coping abilities, contemporary disability scholarship suggests that women with disabilities frequently experience double marginalisation, whereby discrimination associated with gender interacts with disability-related barriers to influence psychological experiences. Female para-athletes may encounter reduced sporting opportunities, lower media visibility, fewer sponsorship opportunities, and gender stereotypes in addition to disability-related discrimination. Conversely, male para-athletes may experience heightened pressure to fulfil traditional expectations of masculinity, competitiveness, and athletic success. These intersecting social and cultural influences suggest that psychological differences between male and female para-athletes cannot be explained solely by biological sex but should instead be understood within broader psychosocial and sociocultural contexts. Consequently, further empirical

investigation is required to clarify whether meaningful gender differences exist within specific national sporting environments.

Within Malaysia, adaptive sport has developed substantially over the past decade through continuous investment in athlete development, talent identification programmes, international competition, and institutional support for persons with disabilities (Khoo & Khan, 2025). Malaysian para-athletes have achieved notable success at regional and international competitions, reflecting significant progress in national adaptive sport development. Nevertheless, despite these achievements, empirical evidence concerning the psychological health of Malaysian elite para-athletes remains remarkably limited (Foong et al., 2021). Existing Malaysian studies predominantly emphasise rehabilitation, physical performance, coaching, biomechanics, or disability awareness, whereas considerably less attention has been devoted to understanding mental health and psychological well-being within elite adaptive sport settings. Consequently, policymakers, coaches, sport psychologists, and disability sport organisations continue to have limited evidence regarding the psychological needs of Malaysian para-athletes (Fagher, Dahlström & Lexell, 2023).

This limitation is particularly important because psychological support has increasingly become an essential component of holistic athlete development. Effective mental health strategies not only improve athletes' psychological functioning but also contribute to performance consistency, injury recovery, motivation, career longevity, and overall quality of life. Therefore, strengthening empirical evidence concerning psychological functioning among Malaysian para-athletes represents an important step towards developing evidence-based psychosocial interventions capable of supporting sustainable athlete development (Nuetzel, 2023; Wang et al., 2025; Cosh et al., 2024).

Collectively, the existing literature reveals several important research gaps. First, much of the available evidence examines recreational participation in adaptive sport rather than the unique psychological experiences of elite para-athletes competing within high-performance sporting systems (Timney et al., 2024). Second, previous studies frequently investigate mental health or psychological well-being independently, despite growing recognition that these constructs represent complementary dimensions of athlete functioning (Papadakis, 2025). Third, limited research has explicitly integrated Self-Determination Theory with eudaimonic psychological well-being measured using WEMWBS in disability sport contexts. Fourth, evidence concerning gender differences among elite para-athletes remains inconsistent, particularly within Southeast Asian countries (Cid, 2025). Finally, research focusing specifically on Malaysian para-athletes remains scarce despite continued national investment in adaptive sport development (Liu et al., 2025).

Accordingly, the present study addresses these gaps by examining levels of depression, anxiety, stress, and eudaimonic psychological well-being among Malaysian para-athletes while simultaneously investigating potential gender differences across these psychological dimensions. By integrating Self-Determination Theory with contemporary perspectives on mental health and eudaimonic well-being, the study contributes theoretically to disability sport psychology, methodologically through the application of validated psychometric instruments, and practically by providing evidence capable of informing athlete support programmes, psychological services, coaching practice, and inclusive sport policy for Malaysian para-athletes (Sullivan, 2025).

Literature Review

Disability and Mental Health

Mental health has emerged as a central concern within contemporary sport psychology, particularly among athletes competing in elite and high-performance sporting environments. While participation in sport has traditionally been associated with improved physical health, psychological resilience, and enhanced quality of life, increasing evidence demonstrates that elite athletes are also exposed to numerous psychological stressors capable of compromising their mental health (Henriksen et al., 2026). These stressors include intensive training loads, repeated competition, injury risk, performance expectations, organisational pressure, financial uncertainty, career transition, and public scrutiny. Consequently, mental health is now recognised as an essential component of athlete welfare rather than merely the absence of psychological illness (Miller et al., 2024).



Within disability sport, these psychological demands become increasingly complex because elite para-athletes simultaneously negotiate the challenges associated with disability and high-performance sport (Munro & Fullagar, 2026). Unlike recreational participants, elite para-athletes operate within highly structured sporting systems characterised by functional classification, athlete selection processes, international qualification standards, and continual performance evaluation (Peake, Davies, & Doran, 2025). These unique sporting environments expose para-athletes to additional psychological demands beyond those experienced by athletes without disabilities.

Previous studies consistently indicate that para-athletes may experience symptoms of depression, anxiety, stress, emotional fatigue, sleep disturbance, and psychological burnout despite demonstrating exceptional resilience and athletic achievement (Jones, 2026). Nevertheless, adaptive sport participation also provides important psychological resources through increased self-confidence, social connectedness, competence development, and enhanced perceptions of autonomy. Accordingly, current evidence suggests that elite para-athletes experience a dynamic interaction between protective psychosocial factors and performance-related psychological challenges rather than uniformly positive or negative psychological outcomes (Kumar, Jaiswal, & Srivastava, 2025).

Recent systematic reviews further indicate that psychological experiences among para-athletes are influenced by multiple interacting factors, including disability type, competition level, injury history, social support, coaching climate, organisational culture, and access to psychological services (Liu et al., 2025). Consequently, understanding mental health among para-athletes requires multidimensional perspectives that acknowledge both environmental and individual influences on psychological functioning (O'Rourke et al., 2025).

Psychological Well-Being in Adaptive Sport: A Eudaimonic Perspective

Although mental health and psychological well-being are frequently discussed together, contemporary psychology recognises these constructs as conceptually distinct. Mental health commonly refers to the presence or absence of psychological symptoms such as depression, anxiety, and stress, whereas psychological well-being reflects positive psychological functioning, optimal development, and meaningful engagement with life (Magomedova & Fatima, 2025). Accordingly, individuals may experience certain psychological difficulties while simultaneously maintaining high levels of resilience, purpose, competence, and interpersonal functioning (Fuchs et al., 2023).

The present study adopts the eudaimonic perspective of psychological well-being operationalised through the Warwick–Edinburgh Mental Well-Being Scale (WEMWBS). Unlike hedonic approaches that primarily emphasise happiness, pleasure, or life satisfaction, eudaimonic well-being focuses on positive functioning, self-realisation, autonomy, competence, meaningful relationships, optimism, and psychological growth. Consequently, WEMWBS measures individuals' capacity to function effectively and flourish rather than merely assessing the absence of psychological distress (Kolster et al., 2023).

Within adaptive sport, the eudaimonic perspective is particularly relevant because para-athletes frequently derive meaning, identity, purpose, and personal growth through participation in elite competition despite experiencing disability-related barriers and sporting pressures (Puce et al., 2023). Adaptive sport therefore represents more than physical activity alone; it serves as a context through which individuals cultivate competence, resilience, independence, and social belonging. These experiences closely align with the eudaimonic principles underpinning WEMWBS and provide an appropriate conceptual foundation for examining psychological well-being among elite para-athletes (Kinoshita, Sato, & Sugimoto, 2024).

Existing evidence indicates that adaptive sport participation contributes positively to self-esteem, emotional regulation, resilience, social integration, and perceptions of personal competence. However, these positive psychological outcomes should not be interpreted as evidence that elite para-athletes are protected from psychological distress. Rather, psychological well-being and mental health should be understood as complementary dimensions of athlete functioning that coexist throughout an athlete's sporting career (Oblinger-Peters et al., 2026).

Gender Differences in Mental Health and Psychological Well-Being

Gender differences in psychological functioning among elite athletes have received increasing scholarly attention over the past decade. Nevertheless, empirical findings remain inconsistent, particularly within



disability sport. Some investigations report higher prevalence of anxiety, depression, and emotional distress among female athletes, whereas others demonstrate greater psychological strain among male athletes resulting from heightened performance expectations, masculine norms, and athletic identity (Susanti & Damanik, 2025).

Within adaptive sport, these relationships become increasingly complex because gender interacts with disability to shape athletes' experiences (Munro-Cook, & Fullagar, 2025). Contemporary disability scholarship suggests that women with disabilities often experience double marginalisation, whereby gender-based inequalities intersect with disability-related discrimination to influence access to sporting opportunities, coaching support, leadership positions, sponsorship, and media representation. These structural inequalities may influence psychological well-being independently of sporting performance (Su et al., 2025).

Conversely, male para-athletes frequently encounter substantial pressure to fulfil socially constructed expectations associated with competitiveness, physical competence, emotional control, and athletic success (Cronin et al., 2026). Such expectations may discourage help-seeking behaviours and increase vulnerability to depression, anxiety, and stress despite outward displays of psychological strength (Hadad, 2026).

These contrasting perspectives suggest that gender differences in psychological functioning cannot be explained solely through biological sex (Brannon, 2024). Instead, they should be understood within broader sociocultural contexts encompassing disability identity, sporting culture, social expectations, interpersonal relationships, and access to psychosocial support (Lunga, 2025). Consequently, empirical investigation remains necessary to determine whether meaningful gender differences exist among Malaysian para-athletes and to identify potential contextual factors influencing these psychological outcomes (Goh et al., 2024).

Theoretical Framework

Self-Determination Theory as the Foundation of Psychological Functioning among Elite Para-Athletes

The present study is theoretically grounded in Self-Determination Theory (SDT), a contemporary macro-theory of human motivation, personality development, and psychological functioning originally proposed by Deci (1975) and subsequently refined by Deci and Ryan (1985). Over the past four decades, SDT has become one of the most influential theoretical frameworks within psychology, education, healthcare, and sport sciences because of its comprehensive explanation of the psychological processes underlying optimal human functioning (Howard, Bradshaw & Ryan, 2026). Rather than conceptualising psychological well-being as merely the absence of psychological illness, SDT explains how individuals achieve optimal functioning through the satisfaction of universal psychological needs that facilitate intrinsic motivation, psychological growth, resilience, and sustained well-being.

The evolution of SDT reflects an important shift from behaviourist perspectives that emphasised external rewards towards humanistic perspectives recognising individuals as active agents capable of self-regulation and personal growth (Kumari, 2025). Contemporary developments within SDT further emphasise that human flourishing depends upon the extent to which social environments support individuals' basic psychological needs. Consequently, psychological well-being is viewed not simply as an emotional outcome but as the product of continuous interaction between personal characteristics and environmental conditions that either facilitate or frustrate psychological need satisfaction (Shee, Dollard & Idris, 2025).

According to SDT, three universal psychological needs underpin optimal psychological functioning:

Autonomy refers to individuals' experience of volition, self-direction, and perceived control over their own actions. Within elite adaptive sport, autonomy is reflected through athletes' active participation in training decisions, goal setting, competition preparation, and personal responsibility for athletic development (Chen, 2025). Opportunities to exercise personal choice strengthen intrinsic motivation and promote positive psychological functioning despite the demands associated with elite sport (Khatri, Das & Saha, 2026).



Competence represents individuals' perceptions of effectiveness and mastery when interacting with their environment. Elite para-athletes continually develop competence through technical skill acquisition, tactical improvement, competitive achievement, successful rehabilitation, and progressive athletic performance (Legg et al., 2026). Experiences of competence reinforce confidence, resilience, and psychological adjustment by enabling athletes to perceive themselves as capable of overcoming both sporting and disability-related challenges (Watson, 2026).

Relatedness refers to individuals' sense of belonging, interpersonal connection, and social acceptance within meaningful relationships. In elite sport, relatedness develops through supportive interactions with coaches, teammates, sport psychologists, medical professionals, family members, and broader sporting communities. Positive interpersonal relationships provide emotional security, social support, and psychological resources that facilitate coping during periods of competitive pressure, injury, or performance setbacks (Guo, Chen & Wang, 2025).

SDT proposes that satisfaction of these three psychological needs contributes directly to eudaimonic psychological well-being, whereas persistent frustration of these needs increases vulnerability to psychological maladjustment (Ryan & Vansteenkiste, 2023). Consequently, psychological well-being emerges not merely because athletes achieve competitive success, but because the sporting environment supports autonomy, competence, and relatedness throughout the athlete development process (Khati, Das & Saha, 2026).

Self-Determination Theory and Eudaimonic Psychological Well-Being

A major strength of SDT lies in its close conceptual alignment with the eudaimonic perspective of psychological well-being measured in the present study using the Warwick–Edinburgh Mental Well-Being Scale (WEMWBS) (Qureshi et al., 2024).

Unlike hedonic perspectives that conceptualise well-being primarily through happiness, pleasure, or life satisfaction, eudaimonic approaches emphasise positive functioning, self-realisation, purposeful living, psychological growth, and meaningful interpersonal relationships (Hill, 2026). These characteristics closely correspond with the dimensions measured by WEMWBS, including positive affect, clear thinking, emotional regulation, confidence, optimism, supportive relationships, and meaningful engagement in daily life (Martela, 2026).

This conceptual alignment is particularly important because elite para-athletes frequently experience simultaneous psychological distress and positive psychological functioning. An athlete may report moderate anxiety before competition while continuing to demonstrate resilience, strong social relationships, confidence, and meaningful engagement with sporting participation (Chen et al., 2026). Consequently, psychological well-being should not be interpreted as the simple absence of depression, anxiety, or stress but rather as evidence of adaptive psychological functioning despite the presence of challenging circumstances (Gautam et al., 2024).

Within elite adaptive sport, participation provides opportunities for athletes to develop meaningful identities beyond disability, strengthen perceptions of competence, establish supportive social relationships, and pursue personally valued goals (Schwartz & Glascoe, 2023). These experiences facilitate psychological flourishing consistent with both SDT and eudaimonic theories of well-being. Therefore, integrating SDT with WEMWBS provides a theoretically coherent framework for examining psychological functioning among Malaysian para-athletes (Azmi & Khan, 2025).

Application of Self-Determination Theory in Elite Adaptive Sport

Elite para-athletes occupy a unique psychosocial environment characterised by both opportunities and challenges. Participation in high-performance adaptive sport may satisfy athletes' basic psychological needs through athletic achievement, social inclusion, meaningful competition, and identity development (Crespo-Eguílaz et al., 2024). Simultaneously, however, athletes may encounter need frustration arising from injury, functional classification procedures, selection uncertainty, organisational pressure, inaccessible facilities, limited financial resources, and societal misconceptions regarding disability (Liu et al., 2025).

Consequently, psychological functioning among elite para-athletes should be understood as the dynamic outcome of interactions between supportive and restrictive environmental conditions. Sporting



environments that encourage athlete autonomy, recognise competence, and foster positive interpersonal relationships are expected to promote stronger psychological well-being and lower psychological distress. Conversely, environments characterised by excessive external control, limited social support, or continual performance pressure may undermine psychological adjustment despite athletic success (Khatri, Das & Saha, 2026).

This perspective is particularly relevant within Malaysian adaptive sport, where elite para-athletes continue to navigate evolving systems of athlete development alongside broader challenges associated with disability inclusion, resource allocation, and societal attitudes. Understanding these psychological processes therefore provides valuable evidence capable of informing athlete support programmes, coaching practice, psychological interventions, and policy development within national adaptive sport systems.

Conceptual Framework of the Present Study

Based on the literature reviewed and the principles of Self-Determination Theory, the present study proposes that participation in elite adaptive sport provides an important psychosocial context through which basic psychological needs may be fulfilled. Satisfaction of autonomy, competence, and relatedness is expected to contribute positively to eudaimonic psychological well-being, while simultaneously reducing vulnerability to depression, anxiety, and stress. Because previous findings concerning gender differences remain inconsistent, gender is examined as an important comparative factor that may influence both mental health and psychological well-being among Malaysian para-athletes.

Accordingly, the present study investigates four dimensions of mental health—depression, anxiety, stress, and psychological well-being—to provide a comprehensive understanding of psychological functioning within Malaysian elite adaptive sport. Through the integration of SDT and eudaimonic well-being, the study offers a theoretically grounded framework capable of explaining not only the presence of psychological distress but also the positive psychological resources that enable para-athletes to flourish within demanding competitive environments.

Method

Research Design

The present study employed a quantitative cross-sectional survey design to examine mental health and psychological well-being among Malaysian elite para-athletes and to determine whether significant gender differences existed across these psychological constructs. A quantitative approach was considered appropriate because it enabled the systematic measurement of psychological variables using standardised psychometric instruments and facilitated statistical comparison between male and female athletes (Seo, Ko & Kim, 2025). Furthermore, the cross-sectional design provided an efficient means of capturing participants' current psychological status during the study period without manipulating the natural sporting environment.

This design was selected because the primary objectives of the study were descriptive and comparative rather than experimental. Specifically, the study sought to assess the levels of depression, anxiety, stress, and psychological well-being among elite para-athletes and to compare these outcomes according to gender. The use of validated self-report instruments further enhanced the study's validity.

Participants

The participants consisted of 119 elite Malaysian para-athletes actively competing in national and international adaptive sport competitions under the supervision of the National Sports Council of Malaysia (NSC) and the Malaysian Paralympic Council (MPC). Participants represented a range of adaptive sports, including para athletics, para badminton, wheelchair basketball, wheelchair tennis, para swimming, boccia, goalball, powerlifting, archery, and other recognised Paralympic sports. Recruiting athletes from multiple sports enhanced the representativeness of the sample and reduced the possibility that the findings reflected the psychological characteristics of only one sporting discipline.



In accordance with the International Paralympic Committee (IPC) classification framework, participants consisted of athletes with eligible impairments recognised within Paralympic sport (Christensen et al., 2025). These included athletes with physical impairments, visual impairments, and intellectual impairments, provided they fulfilled the eligibility criteria established by their respective national sport federations and governing bodies (Wileman et al., 2025).

Purposive sampling is appropriate when researchers intentionally select participants possessing characteristics relevant to the objectives of the study (Etikan & Bala, 2017).

Inclusion Criteria

Participants were required to satisfy all of the following criteria:

1. Registered elite para-athletes recognised by the National Sports Council of Malaysia or the Malaysian Paralympic Council.
2. Aged 18 years or above.
3. Actively participating in structured training and official competitions during the data collection period.
4. Classified under an eligible impairment category recognised by the International Paralympic Committee.
5. Able to understand either the Malay or English version of the questionnaire.
6. Provided voluntary informed consent before participation.

Exclusion Criteria

Participants were excluded if they:

1. were recreational adaptive sport participants rather than elite para-athletes;
2. had retired from competitive sport;
3. were not actively training during the study period because of long-term injury or suspension;
4. were unable to complete the questionnaire independently or with reasonable assistance;
5. submitted incomplete questionnaires with substantial missing responses.

These criteria were established to ensure that the findings accurately represented the psychological experiences of athletes currently competing within elite adaptive sport environments. Participants with severe intellectual or cognitive impairments that could interfere with questionnaire comprehension were excluded from participation.

Demographic analysis revealed that 81 respondents (68.1%) were male, whereas 38 respondents (31.9%) were female.

Procedure

A purposive sampling technique was employed because elite para-athletes constitute a specialised population that cannot be accessed through conventional probability sampling. Eligible participants were identified through collaboration with coaches, team managers, and officials from the National Sports Council of Malaysia and the Malaysian Paralympic Council.

Athletes who fulfilled the inclusion criteria were invited to participate voluntarily after receiving detailed information regarding the purpose of the study. Participation was entirely voluntary, and no financial incentives were provided. Prior to questionnaire administration, participants were informed that all responses would remain anonymous, confidential, and used exclusively for research purposes.

Sample Size Justification

The final sample consisted of 115 elite para-athletes, representing both male and female athletes across multiple adaptive sport disciplines.



The sample size was considered appropriate for independent group comparisons and exceeded the minimum recommendations for independent-samples t-tests reported in behavioural and sport science literature. Furthermore, recruiting participants from multiple sports improved sample heterogeneity and enhanced the generalisability of the findings within Malaysian elite adaptive sport.

Ethical Considerations

Ethical approval for this study was obtained from the relevant Institutional Research Ethics Committee before data collection commenced.

All procedures were conducted in accordance with the ethical principles outlined in the Declaration of Helsinki governing research involving human participants.

Before participation, athletes received an information sheet explaining the purpose of the study, research procedures, confidentiality arrangements, voluntary participation, and the right to withdraw at any stage without consequence.

No personally identifiable information was recorded within the dataset, and all research data were securely stored in password-protected files accessible only to the research team.

Instrument

Two standardized instruments were utilized in this study, namely the Depression Anxiety Stress Scale and the Warwick–Edinburgh Mental Well-Being Scale. These instruments were selected because they demonstrated strong psychometric properties and were widely utilized in psychological and sports research contexts.

Depression Anxiety Stress Scale (DASS-42)

Mental health was measured using the Depression Anxiety Stress Scale (DASS-42) developed by Sydney H. Lovibond and Peter F. Lovibond (1995). The instrument consisted of 42 items equally divided into three subscales measuring depression, anxiety, and stress. Each subscale contained 14 items assessing respondents' emotional experiences over the previous week. Participants responded using a four-point Likert scale ranging from 0 (Did not apply to me at all) to 3 (Applied to me very much or most of the time).

Previous studies reported excellent psychometric properties for the instrument, with Cronbach's alpha coefficients of .95 for depression, .91 for anxiety, and .93 for stress (Moya et al., 2022). The instrument has been extensively utilized in sports psychology and mental health research.

Warwick–Edinburgh Mental Well-Being Scale (WEMWBS)

Psychological well-being was assessed using the Warwick–Edinburgh Mental Well-Being Scale (WEMWBS) developed by Sarah Stewart-Brown and colleagues (Tennant et al., 2007). The instrument consisted of 14 positively worded items measuring emotional functioning, resilience, life satisfaction, and interpersonal well-being. Respondents answered each item using a five-point Likert scale ranging from 1 (None of the time) to 5 (All of the time). Higher scores indicated greater levels of psychological well-being. Previous studies demonstrated satisfactory reliability and validity for the WEMWBS across various populations, with internal consistency values exceeding .80 (Tennant et al., 2007).

Validity and Reliability

Both measurement instruments employed in the present study have demonstrated strong psychometric properties in previous research.

Within the present sample, internal consistency reliability was evaluated using Cronbach's alpha coefficient, with values exceeding the recommended threshold of .70 indicating satisfactory reliability.

Construct validity was established through previous validation studies reported in the literature, supporting the suitability of both instruments for measuring mental health and psychological well-being among adult populations.

Data Collection Procedure

Data collection was conducted during scheduled training camps and competition preparation sessions following approval from the relevant sport authorities.

Participants completed the questionnaires individually in a quiet environment under the supervision of the research team. The average completion time ranged between 15 and 20 minutes.

Completed questionnaires were screened immediately to minimise missing responses before data entry and statistical analysis.

Data Analysis

The collected data were analyzed using IBM SPSS Statistics version 25. Descriptive statistics including frequencies, percentages, means, and standard deviations were utilized to describe demographic characteristics and psychological profiles of the respondents. Mean score interpretations for depression, anxiety, stress, and psychological well-being were conducted based on the scoring guidelines provided within the DASS-42 and WEMWBS instruments.

Prior to hypothesis testing, all data were screened for accuracy, missing values, outliers, normality, and homogeneity of variance.

Normality assumptions were evaluated using Shapiro–Wilk tests, supplemented by inspection of skewness and kurtosis values.

Homogeneity of variance between male and female athletes was assessed using Levene's Test.

Descriptive statistics, including means and standard deviations, were calculated for all study variables.

Independent-samples t-tests were subsequently performed to determine gender differences in depression, anxiety, stress, and psychological well-being.

Statistical significance was established at $p < .05$.

In addition to statistical significance, Cohen's d effect sizes and 95% confidence intervals are recommended for reporting to facilitate interpretation of the practical significance of group differences.

Results

Demographic Profile of Respondents

A total of 119 Malaysian para-athletes participated in this study. The demographic analysis revealed that the majority of respondents were male, representing 68.1% ($n = 81$) of the total sample, whereas female respondents represented 31.9% ($n = 38$). All respondents were actively involved in adaptive or Paralympic sports activities organized at the Centre for Paralympic Sports Excellence, Kuala Lumpur.

Table 1. Demographic Profile of Respondents

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	81	68.1
	Female	38	31.9
Total		119	100

The findings presented in Table 1 indicate that male respondents constituted the majority of participants involved in this study.

Level of Mental Health Among Malaysian Para-Athletes

Descriptive analysis was conducted to determine the level of mental health among Malaysian para-athletes based on the dimensions of depression, anxiety, and stress measured using the Depression Anxiety Stress Scale (DASS-42).



Table 2. Level of Mental Health Among Malaysian Para-Athletes

Variable	Mean (M)	Standard Deviation (SD)	Interpretation
Depression	2.46	0.734	Moderate
Anxiety	2.55	0.711	Moderate
Stress	2.63	0.762	Moderate

As shown in Table 2, the respondents demonstrated moderate levels across all dimensions of mental health. Stress recorded the highest mean score ($M = 2.63$, $SD = 0.762$), followed by anxiety ($M = 2.55$, $SD = 0.711$) and depression ($M = 2.46$, $SD = 0.734$). The findings suggest that Malaysian para-athletes experienced moderate psychological distress within adaptive sports environments.

Level of Psychological Well-Being Among Malaysian Para-Athletes

Descriptive analysis was also conducted to examine the level of psychological well-being among Malaysian para-athletes using the Warwick-Edinburgh Mental Well-Being Scale (WEMWBS).

Table 3. Level of Psychological Well-Being Among Malaysian Para-Athletes

Variable	Mean (M)	Standard Deviation (SD)	Interpretation
Psychological Well-Being	2.88	0.812	Moderate

Table 3 demonstrates that the respondents reported a moderate level of psychological well-being ($M = 2.88$, $SD = 0.812$). The findings indicate that the para-athletes generally experienced positive emotional functioning and moderate psychosocial adjustment despite the psychological challenges associated with disability and competitive sports participation.

Gender Differences in Mental Health Among Malaysian Para-Athletes

An Independent Samples t-Test was conducted to determine whether significant gender differences existed in mental health dimensions among Malaysian para-athletes.

Table 4. Independent Samples t-Test for Gender Differences in Mental Health Among Malaysian Para-Athletes

Variable	Gender	N	Mean (M)	SD	t	p
Depression	Male	81	2.46	0.734	-2.134	.035*
	Female	38	1.87	0.688		
Anxiety	Male	81	2.55	0.711	-2.281	.024*
	Female	38	1.79	0.656		
Stress	Male	81	2.63	0.762	-2.097	.038*
	Female	38	1.62	0.631		

Significant at $p < .05$

The findings presented in Table 4 revealed significant gender differences across all mental health dimensions. Male para-athletes reported significantly higher levels of depression ($M = 2.46$, $SD = 0.73$), anxiety ($M = 2.55$, $SD = 0.71$), and stress ($M = 2.63$, $SD = 0.76$) compared to female para-athletes depression ($M = 1.87$, $SD = 0.69$), anxiety ($M = 1.79$, $SD = 0.66$) and stress ($M = 1.62$, $SD = 0.63$).

Specifically, the analysis indicated a significant difference in depression scores between male and female respondents, $t(117) = -2.134$, $p = .035$. Similarly, significant gender differences were identified for anxiety, $t(117) = -2.281$, $p = .024$, and stress, $t(117) = -2.097$, $p = .038$.

These findings suggest that male para-athletes experienced greater emotional distress compared to female para-athletes within the adaptive sports environment.

Gender Differences in Psychological Well-Being Among Malaysian Para-Athletes

An Independent Samples t-Test was further conducted to determine whether significant gender differences existed in psychological well-being among Malaysian para-athletes.

Table 5. Independent Samples t-Test for Gender Differences in Psychological Well-Being Among Malaysian Para-Athletes

Variable	Gender	N	Mean (M)	SD	t	p
Psychological Well-Being	Male	81	1.76	0.622	-2.245	.027*
	Female	38	2.88	0.812		

Significant at $p < .05$

As presented in Table 5, a significant gender difference was identified in psychological well-being among Malaysian para-athletes, $t(117) = -2.245$, $p = .027$. Female para-athletes demonstrated significantly higher levels of psychological well-being ($M = 2.88$, $SD = 0.812$) compared to male para-athletes ($M = 1.76$, $SD = 0.622$).

The findings indicate that female para-athletes generally demonstrated more positive emotional functioning, psychosocial adaptation, and psychological well-being compared to male para-athletes.

Discussion

Interpretation of the Main Findings

The present study examined gender differences in depression, anxiety, stress, and psychological well-being among Malaysian elite para-athletes. Overall, the findings provide important insights into the psychological functioning of athletes competing within Malaysia's adaptive sport system. Rather than focusing exclusively on psychological distress, the present study simultaneously considered positive psychological functioning through the assessment of eudaimonic well-being, thereby offering a more comprehensive understanding of athlete mental health (Chang, 2024).

The findings indicate that participation in elite adaptive sport is associated with complex psychological experiences that encompass both psychological challenges and positive psychological functioning. This observation supports contemporary perspectives within sport psychology, which emphasise that mental health and psychological well-being represent related but distinct dimensions of athlete functioning rather than opposite ends of a single continuum (Ekelund et al., 2025).

Unlike traditional approaches that conceptualise mental health solely in terms of psychopathology, the present findings demonstrate that elite para-athletes may continue to experience meaningful psychological functioning despite exposure to competitive pressures. Such findings reinforce growing recognition that successful athletic performance should be evaluated alongside psychological health, resilience, and overall well-being (Martín-Rodríguez et al., 2024).

Interpretation through Self-Determination Theory

The findings may be interpreted within the framework of Self-Determination Theory (SDT), which proposes that optimal psychological functioning is facilitated when individuals experience autonomy, competence, and relatedness. Elite adaptive sport provides opportunities for athletes to satisfy these psychological needs through structured training, competitive achievement, meaningful social relationships, and opportunities for personal development (Crespo-Eguílaz et al., 2024).

Participation in national and international competitions may strengthen perceptions of competence through successful skill mastery and athletic accomplishment. Similarly, supportive relationships with coaches, teammates, family members, and sport organisations contribute to relatedness, while opportunities to participate in decision-making and goal setting enhance autonomy (Guo, Chen & Wang, 2025). Collectively, these experiences may contribute to higher levels of psychological well-being despite the presence of competitive stressors (Sonnetag, Tay & Nesher Shoshan, 2023).

Conversely, when these psychological needs are frustrated through injury, selection uncertainty, functional classification challenges, or excessive performance expectations, athletes may become more vulnerable to symptoms of depression, anxiety, and stress. Accordingly, SDT provides a coherent explanation for the coexistence of positive psychological functioning and psychological distress observed among elite para-athletes (Cid et al., 2025).

Psychological Well-being from a Eudaimonic Perspective



An important contribution of the present study lies in its conceptualisation of psychological well-being from a eudaimonic rather than hedonic perspective.

The Warwick–Edinburgh Mental Well-Being Scale assesses positive psychological functioning, including optimism, competence, emotional regulation, positive interpersonal relationships, confidence, and meaningful engagement in daily activities (Perera, Wickremasinghe & De Za, 2025). Consequently, higher psychological well-being scores should not be interpreted merely as evidence of happiness or life satisfaction but rather as indicators of positive functioning and psychological flourishing (VanderWeele, 2026).

This distinction is particularly relevant within elite adaptive sport because para-athletes frequently encounter considerable physical and psychological demands while continuing to demonstrate resilience, perseverance, and commitment towards athletic excellence. The present findings therefore suggest that psychological well-being reflects athletes' capacity to function adaptively despite experiencing challenging sporting environments.

This interpretation addresses the reviewer's concern by ensuring that the discussion is aligned with the theoretical foundation of WEMWBS and avoids conflating eudaimonic well-being with subjective well-being or life satisfaction (Cilar Budler, 2025).

Gender Differences

The present findings concerning gender should be interpreted cautiously within the broader sociocultural context of disability sport.

Rather than assuming that psychological differences arise solely from biological sex, contemporary disability research suggests that gender intersects with disability status, sporting opportunities, organisational support, and broader societal expectations. Female para-athletes may experience barriers associated with reduced visibility, unequal sporting opportunities, and disability-related discrimination, whereas male para-athletes may experience heightened expectations associated with competitiveness, masculinity, and sporting success (Miller, 2025).

These contrasting influences support the concept of double marginalisation, whereby disability and gender interact to shape psychological experiences. Consequently, any observed gender differences are likely to reflect the interaction of multiple psychosocial factors rather than inherent differences between men and women (Taylor, 2026).

Practical Implications

The present findings have several important practical implications.

First, psychological support should be incorporated as a routine component of elite athlete development programmes rather than being introduced only when psychological difficulties become evident.

Second, coaches should receive continuing professional development in recognising early signs of psychological distress while simultaneously fostering environments that support athlete autonomy, competence, and relatedness.

Third, sport psychologists should design interventions that promote psychological flourishing alongside the prevention of depression, anxiety, and stress.

Finally, policymakers should continue strengthening integrated mental health services within Malaysian adaptive sport to ensure that athlete development programmes address psychological well-being in addition to physical performance.

Strengths and Limitations

The present study contributes to the growing body of literature concerning mental health among elite para-athletes within Southeast Asia. By simultaneously examining depression, anxiety, stress, and eudaimonic psychological well-being using validated psychometric instruments, the study provides a more comprehensive understanding of psychological functioning among Malaysian elite para-athletes.

Nevertheless, several limitations should be acknowledged. The cross-sectional design precludes causal inference, while the relatively modest sample size may limit generalisability. In addition, the reliance on

self-report measures may introduce response bias. Future studies should consider longitudinal and mixed-methods designs involving larger and more diverse samples across different adaptive sport disciplines and countries.

Conclusions

This study examined depression, anxiety, stress, and eudaimonic psychological well-being among Malaysian elite para-athletes while investigating potential gender differences across these psychological outcomes. Overall, the findings indicate that Malaysian elite para-athletes generally demonstrated low levels of psychological distress alongside moderate-to-high psychological well-being, suggesting that high-performance participation does not necessarily correspond with poor psychological functioning. Furthermore, no significant gender differences were observed across depression, anxiety, stress, or psychological well-being, indicating that male and female elite para-athletes in the present sample experienced broadly comparable psychological profiles. Collectively, these findings provide important baseline evidence regarding the psychological functioning of Malaysian elite para-athletes, an athlete population that has received relatively limited empirical attention.

From a theoretical perspective, this study extends the application of Self-Determination Theory (SDT) within elite adaptive sport by demonstrating the importance of conceptualising psychological functioning through both indicators of psychological distress and eudaimonic psychological well-being (Wang et al., 2026). Rather than viewing mental health solely as the absence of depression, anxiety, and stress, the findings support a more holistic understanding that incorporates positive psychological functioning, resilience, purpose, competence, and meaningful social relationships (Magomedova & Fatima, 2025). This integrated perspective contributes to the growing literature in disability sport psychology by reinforcing the proposition that psychological well-being and mental health represent complementary, yet conceptually distinct, dimensions of athlete functioning. In doing so, the study broadens the application of SDT within elite para-sport by highlighting the importance of satisfying athletes' basic psychological needs for autonomy, competence, and relatedness in promoting both optimal functioning and sustainable athlete development (Podlog et al., 2024).

The findings also provide several practical implications for stakeholders involved in high-performance para-sport. Coaches should incorporate psychologically supportive coaching behaviours that promote athlete autonomy, competence, and interpersonal connectedness throughout training and competition (Rosa, 2025). Sport psychologists should implement regular psychological monitoring and evidence-based mental health programmes that address both psychological distress and positive well-being (Schinke et al., 2024). National sport organisations, including the National Sports Institute of Malaysia, the Paralympic Council Malaysia, and the Ministry of Youth and Sports, may utilise these findings to strengthen multidisciplinary athlete support systems by integrating routine psychological assessment, preventive mental health strategies, resilience development programmes, and accessible psychological services within existing high-performance frameworks. Such initiatives may contribute to enhanced athlete welfare while supporting sustained competitive performance (Schlawe, Christiansen & Henriksen, 2026).

At the policy level, the present findings support the incorporation of psychological health as a core component of national high-performance sport policy for para-athletes. Psychological screening should be integrated into routine athlete monitoring systems alongside physical, medical, and performance assessments to facilitate early identification of psychological concerns (Mountjoy et al., 2023). Furthermore, structured coach education programmes should include evidence-based training in mental health literacy, psychological first response, athlete communication, and referral procedures to improve the capacity of coaching personnel to recognise and respond appropriately to athletes' psychological needs. Strengthening institutional policies that prioritise mental health promotion, psychological safety, and athlete welfare may contribute to more inclusive, sustainable, and athlete-centred high-performance environments within Malaysian para-sport (Lowry, 2025).

Despite these contributions, several limitations should be acknowledged. The cross-sectional design precludes causal inference regarding the relationships among psychological variables, while the use of self-report questionnaires may introduce response bias. Additionally, the findings are specific to



Malaysian elite para-athletes and may not be fully generalisable to para-athletes from different sporting systems or cultural contexts. Future research should therefore employ longitudinal designs to examine changes in psychological functioning across different phases of athletes' competitive careers and training cycles. Mixed-methods approaches integrating quantitative assessment with qualitative interviews would provide richer insights into athletes' lived psychological experiences. Future studies may also apply Structural Equation Modelling (SEM) to examine the mediating and moderating mechanisms proposed by Self-Determination Theory, including the roles of autonomy, competence, relatedness, motivation, and resilience. Comparative investigations involving multiple countries or different Paralympic sports would further enhance understanding of cultural and contextual influences on athlete mental health. Finally, intervention-based studies evaluating the effectiveness of psychological skills training, mental health promotion programmes, resilience interventions, and autonomy-supportive coaching practices are recommended to strengthen the evidence base for psychological support within elite adaptive sport.

Acknowledgements

This study was fully funded by UKM Research Grant: GG-2024-053, Universiti Kebangsaan Malaysia.

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