



Burnout syndrome according to psychological inflexibility in volleyball coaches

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Abstract

This study examined the relationship between psychological inflexibility and burnout in volleyball coaches. A total of 187 federated coaches participated (72.7% male). Psychological inflexibility was measured using the Acceptance and Action Questionnaire; burnout was assessed using the Athlete Burnout Questionnaire. Women showed higher scores in psychological inflexibility, but after conducting a cluster analysis, results showed no gender-based differences in psychological inflexibility clusters. However, female coaches were more likely to fall into high-burnout categories. After conducting a regression analysis, psychological inflexibility was shown to be a relevant predictor of exhaustion, with a 4.3 fold increased risk of developing high levels of burnout (OR = 4.328). Neither coaching qualifications nor competitive level were associated with burnout. These findings highlight a significant link between inflexibility and burnout, underscoring the need for further research in sports settings.

Keywords Burnout · Psychological Inflexibility · Mental Health · Volleyball Coaches

Introduction

Sports coaches play multiple roles within team dynamics and are susceptible to psychological strain [1]. Burnout and stress among coaches are well-established concerns in sport psychology [2]. Burnout results from prolonged failure to manage work-related stress [3] and is defined by three main components: emotional/physical exhaustion, reduced sense

of accomplishment, and devaluation of sport [4]. It can contribute to coaches leaving the profession [5], although its onset may be mitigated [6, 7].

Burnout conceptualized within a behavioral framework is closely tied to psychological flexibility [8]; which holds clinical significance due to its potential for intervention. Psychological flexibility involves being present with internal experiences without avoidance, and acting in accordance with personal values despite discomfort [9]. In contrast, psychological inflexibility refers to the rigid dominance of unhelpful internal experiences over meaningful actions [8, 10]. In sports, psychological inflexibility has been linked to increased symptoms of anxiety, depression, and related issues [11]. Psychological inflexibility typically involves avoidance of aversive stimuli or situations, often expressed through rigid behavioral patterns that may lead to disengagement [8–10]. This inflexibility is associated with less effective behavior and missed opportunities for optimal performance [12, 13].

The aim of the present study is to examine the extent to which psychological inflexibility scores predict burnout levels among volleyball coaches. Based on previous evidence, the first hypothesis proposes that female coaches, compared with male coaches, will obtain higher scores in psychological inflexibility. Likewise, the second hypothesis states that

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coaches with higher levels of psychological inflexibility will also exhibit higher levels of burnout.

Method

Participants

The sample consists of 187 volleyball coaches (72.7% male), with a mean age of 42.72 years ($SD = 12.02$), ranging from 20 to 77 years. Regarding coaching experience, the average tenure is 14.99 years ($SD = 11.91$), with a range from 3 to 52 years (Table 1). They report that they train on average 3.75 days ($SD = 1.19$) and 8.38 h ($SD = 5.31$) per week.

The inclusion criteria were being over 18 years of age, having more than 3 years of experience as a coach registered with the Royal Spanish Volleyball Federation or Territorial Federations, holding a coaching qualification, and signing the informed consent form. The exclusion criterion was being on sick leave due to an incapacitating illness or taking medication that would prevent the participant from

completing the questionnaires and carrying out their duties as a coach.

All participants completed the assessments; no missing data were recorded, as responses had to be filled in to proceed. All participants provided informed consent to be included in the study, and the research received approval from the Andalusian Ethics Committee of Biomedical Research.

Instruments

Sociodemographic data were collected, including coaching qualifications categorized into three levels: Level I (infant and cadet categories), Level II (youth and junior categories), and Level III (Honor Division and Superliga), the latter requiring specific federation authorization. Competition category of the team being coached.

The Acceptance and Action Questionnaire (AAQ-II; [10], in its adaptation to Spanish [14]) was used to assess psychological inflexibility. This instrument provides a general measure of psychological flexibility-inflexibility

Table 1 - Characteristics of the sample according to gender of the volleyball coaches

	Total 187	Man 136(72.7)	Woman 51(27.3)		<i>p</i>
Coaching Qualification:				$\chi^2_{(2,187)} = 10.097$	.006
Level I	27(14.4)	13(9.6)	14(27.5)		
Level II	78(41.7)	58(42.6)	20(39.2)		
Level III	82(43.9)	65(47.8)	17(33.3)		
Category trained				$\chi^2_{(2,187)} = 4.321$	.115
Provincial	73(39.0)	47(34.6)	56(51.0)		
Regional	72(38.5)	57(41.9)	15(29.4)		
National–International	42(22.5)	32(23.5)	10(19.6)		
Assistant Coach				$\chi^2 = 0.419$	.517
Yes	79(46.7)	58(48.3)	21(42.9)		
No	90(53.3)	62(51.7)	28(57.1)		
Technical Team				$\chi^2 = 6.022$	.014
Yes	62(36.7)	51(42.5)	11(22.4)		
No	107(63.3)	69(57.5)	38(77.6)		
AAQ-II-TOTAL	18.46(8.16)	17.65(7.91)	20.61(8.51)	$t = 2.227$	.027
CLUSTER- AAQ-II				$\chi^2_{(1,187)} = 3.109$	.078
High AAQ-II	69(36.9)	45(33.1)	24(47.1)		
Low AAQ-II	118(63.1)	91(66.9)	27(52.9)		
ABQ-TOTAL	10.897(3.49)	10.623(3.33)	11.627(3.82)	$t = 1.765$	.079
ABQ-EPE	11.70(4.37)	11.39(4.25)	12.53(4.62)	$t = 1.594$	.113
ABQ-RSA	11.12(3.96)	10.76(3.73)	12.06(4.39)	$t = 2.008$	.046
ABQ-SD	9.87(4.45)	9.71(4.36)	10.29(4.72)	$Z = -0.637$	.524
CLUSTER-ABQ				$\chi^2_{(1,187)} = 4.650$	.031
High ABQ	86(46.0)	56(41.2)	30(58.8)		
Low ABQ	101(54.0)	80(58.8)	21(41.2)		

Note: For quantitative variables M(SD) and categorical variables *n*(%). *Z*: *U* Mann–Whitney; *AAQ-II* Acceptance and Action Questionnaire, *ABQ* Athlete Burnout Questionnaire, *ABQ-EPE* Athlete Burnout Questionnaire-emotional/physical exhaustion, *ABQ-RSA* Athlete Burnout Questionnaire-reduced sense of accomplishment, *ABQ-SD* Athlete Burnout Questionnaire- sport devaluation

consisting of a 7-item questionnaire concerned with how the individual relates to their private events and to what extent they perceive these events as an obstacle to leading the life they wish. Participants respond on a Likert-type scale (1 = never to 7 = always) to indicate the extent they believe the statements to be true. High scores indicate greater inflexibility. The test used in this study has shown high internal consistency (Cronbach's $\alpha = 0.91$).

Burnout was assessed using the Athlete Burnout Questionnaire (ABQ; [15], in its Spanish adaptation [16]). The instrument measures three dimensions: emotional and physical exhaustion (EPE), reduced sense of accomplishment (RSA), and sport devaluation (SD). It consists of 15 items rated on a five-point Likert scale (1 = Almost never to 5 = Almost always). The total score of the scale is obtained by calculating the mean score of the three subscales. Reliability coefficients were acceptable: Total ($\alpha = 0.87$), EPE ($\alpha = 0.87$), RSA ($\alpha = 0.71$), and SD ($\alpha = 0.82$).

Procedure

This study uses a non-probabilistic sampling methodology with a cross-sectional, anonymous, and online design. The Royal Spanish Volleyball Federation and its Territorial Committees were contacted. Through its Training and Technical Department, the link to the questionnaires was sent to all active federated coaches, requesting their collaboration in completing the surveys.

Data analysis

The following was carried out descriptive analyses were conducted to characterize the main research variables. The normality of the variables is confirmed when analysed using the Kolmogorov–Smirnov test. The Mann–Whitney U test was used to analyze variables that did not conform to normality. The reliability of the tests was calculated using Cronbach's alpha. The comparison of quantitative variables was carried out using the Student's t-test for independent groups. Cluster analysis was carried out when considering the grouping of participants on the variable psychological inflexibility for comparison on the basis of the dependent variables. In the case of quantitative variables with more than two categories, an ANOVA test was conducted, with Snedecor's *F* statistic and Bonferroni's post hoc tests. In the case of categorical variables, the Chi-Square test was used. Odds Ratios were calculated. Associations between the variables were analyzed by Pearson correlations. Analyses were conducted using the SPSS statistical package (IBM version 25.0, SPSS).

Results

Male coaches had more years of coaching experience ($M = 16.18$, $SD = 12.70$) than female coaches ($M = 11.80$, $SD = 8.82$), $t = 2.265$, $p = 0.025$. Men also coached more days ($M = 3.94$, $SD = 1.17$ vs. $M = 3.24$, $SD = 1.07$), $t = 3.753$, $p < 0.001$, and more hours per week ($M = 9.02$, $SD = 5.70$ vs. $M = 6.66$, $SD = 3.34$), $t = 2.761$, $p = 0.006$.

Based on the Kolmogorov–Smirnov test, psychological inflexibility ($Z = 1.096$, $p = 0.181$), ABQ-Total ($Z = 1.181$, $p = 0.123$), EPE ($Z = 1.346$, $p = 0.053$), and RSA ($Z = 1.214$, $p = 0.105$) followed a normal distribution, while SD did not ($Z = 1.873$, $p = 0.002$).

As shown in Table 1, women were more likely to hold a Level I qualification, whereas men commonly held Level III. Additionally, women typically lacked a technical support team, unlike their male counterparts.

There were no significant differences in the distribution of coaches based on the competitive category of their teams or the presence of an assistant coach. When conducting a K-means cluster analysis using the iterate-and-classify method, the groupings derived for the variable psychological inflexibility yielded two clusters among the participants: a low cluster < 20.29 points ($M = 13.32$, $SD = 4.350$) and a high cluster > 20.29 points ($M = 27.25$, $SD = 5.057$). Likewise, the variable burnout produced two clusters: a low cluster < 11.13 points ($M = 8.254$, $SD = 1.618$) and a high cluster > 11.13 points ($M = 14.00$, $SD = 2.43$). Although women scored higher on psychological inflexibility, no significant differences emerged when categorized into high or low-inflexibility groups. Regarding burnout, considering the total score as the mean of the three subscales, the only gender-based difference appeared in the reduced sense of accomplishment subscale. When grouped by burnout level, women were more likely to fall into the high-burnout category, whereas men were more often in the low-burnout group ($Phi = 0.158$).

Analysis of the total burnout scores revealed that coaches classified in the high psychological inflexibility cluster ($M = 12.34$, $SD = 3.14$) scored significantly higher than those in the low inflexibility cluster ($M = 10.05$, $SD = 3.41$). This difference was statistically significant ($t = 4.546$, $p < 0.001$) and corresponded to a medium effect size ($d = 0.70$).

In the ABQ-EPE subscale, individuals in the high inflexibility group ($M = 13.35$, $SD = 4.30$) also scored significantly higher than those in the low inflexibility group ($M = 10.74$, $SD = 4.24$), as indicated by the t-test results ($t = 4.104$, $p < 0.001$), again reflecting a medium effect size ($d = 0.63$).

Similarly, on the ABQ-RSA subscale, coaches with high psychological inflexibility ($M = 12.46$, $SD = 3.60$)

exhibited significantly higher scores than their low inflexibility counterparts ($M = 10.33, SD = 3.96$), a difference supported by statistical testing ($t = 3.676, p < 0.001$) and associated with a medium effect size ($d = 0.56$).

Finally, regarding the ABA-SD subscale, individuals in the high inflexibility group ($M = 11.20, SD = 4.11$) scored significantly higher than those in the low inflexibility group ($M = 9.09, SD = 4.47$). This difference was statistically significant ($Z = -3.897, p < 0.001$), with a medium effect size ($d = 0.49$). Thus, individuals with high burnout scores had a greater risk of belonging to the high inflexibility group ($OR = 4.328, 95\% CI [2.293, 8.168]$) compared to those with low scores ($\chi^2_{(1,187)} = 21.553; p < 0.001; Phi = 0.339$).

After verifying the assumptions of the regression models—including homoscedasticity and multicollinearity assessed using the variance inflation factor (VIF)—significant models were identified. In the final models for the sample according to the burnout scale and subscales, the VIF values indicated acceptable levels of collinearity for gender (VIF = 1.027) and psychological inflexibility (VIF = 1.027). Table 2 presents the results obtained from the linear regression analysis used to predict the scores on the scale assessing burnout.

All the models generated were statistically significant when using sex and psychological inflexibility as predictor variables. Together, these predictors accounted for between 6.3% and 12.8% of the variance in the total score and the subscales. However, the contribution of sex was not statistically significant. In contrast, psychological inflexibility demonstrated a robust predictive capacity, reaching a coefficient of $\beta = 0.338$ for the total burnout score.

Burnout scores did not differ significantly by coaching qualification: ABQ-Total ($F_{(2,186)} = 0.629, p = 0.534$), EPE ($F_{(2,186)} = 0.004, p = 0.996$), RSA ($F_{(2,186)} = 1.790, p = 0.170$), and SD ($F_{(2,186)} = 1.423, p = 0.244$). Similarly, no significant differences were found based on the category trained of the team: ABQ-Total ($F_{(2,186)} = 1.508, p = 0.224$), EPE ($F_{(2,186)} = 2.258, p = 0.107$), RSA ($F_{(2,186)} = 0.364, p = 0.695$), and SD ($F_{(2,186)} = 1.195, p = 0.305$).

Discussion

The first hypothesis posited that female coaches, compared to their male counterparts, would exhibit higher levels of psychological inflexibility. This hypothesis was supported by the data and aligns with previous findings [17–19]. However, when participants were categorized into high and low inflexibility groups, the distribution across genders was comparable. With regard to burnout, and contrary to earlier research such as Heidari [20], which reported higher burnout levels among women, the present study did not identify significant gender differences in overall burnout scores, except for the reduced sense of accomplishment subscale. Notably, female coaches demonstrated a significantly higher likelihood of belonging to the high-burnout group.

The second hypothesis proposed that coaches exhibiting higher levels of psychological inflexibility would also present higher levels of burnout. The findings confirmed this hypothesis, identifying psychological inflexibility as a robust predictor of burnout scores. Although research examining this association within sport settings remains limited,

Table 2 - Linear regression analysis, scores on the burnout (ABQ) and its subscales (ABQ-EPE; ABQ-RSA; ABQ-SD) as the predicted variable and gender and psychological inflexibility as predictor variables, according to gender in soccer refereeing

ABQ	β	t	p	R ²	p	F _(2,186)	p
Model				0.128	<.001	13.451	<.001
Gender	.074	1.063	.289				
Psychological Inflexibility	.338	4.838	<.001				
ABQ-EPE	β	t	p	R ²	p	F _(2,186)	p
Model				0.116	<.001	12.131	<.001
Gender	.064	0.910	.364				
Psychological Inflexibility	.325	4.630	<.001				
ABQ-RSA	β	t	p	R ²	p	F _(2,186)	p
Model				0.085	<.001	8.531	<.001
Gender	.105	1.467	.144				
Psychological Inflexibility	.255	3.574	<.001				
ABQ-SD	β	t	p	R ²	p	F _(2,186)	p
Model				0.063	.003	6.168	.003
Gender	.018	0.254	.800				
Psychological Inflexibility	.247	3.416	.001				

Note: ABQ Athlete Burnout Questionnaire, ABQ-EPE Athlete Burnout Questionnaire-emotional/physical exhaustion, ABQ-RSA Athlete Burnout Questionnaire-reduced sense of accomplishment, ABQ-SD Athlete Burnout Questionnaire- sport devaluation

available evidence indicates that psychological inflexibility is closely linked to variables that facilitate or intensify burnout-related symptomatology [19, 21–25]. Furthermore, research in healthcare contexts has demonstrated that greater psychological inflexibility is associated with higher burnout levels [26] and predicts both burnout and psychological distress among nursing professionals. Experiential avoidance has been shown to account for approximately 28% to 48% of the variance in psychological symptoms, further underscoring the central role of psychological flexibility in mental health processes [27].

Taken together, these relationships suggest that individuals with high psychological inflexibility may experience greater difficulty managing the demands of the sporting environment, thereby increasing their vulnerability to emotional exhaustion. Competitive sports require the ongoing regulation of pressure, anxiety, external expectations, and insufficient recovery opportunities. When such stressors are persistent and intense, the likelihood of burnout increases, particularly in the absence of flexible coping strategies. Psychological inflexibility amplifies these maladaptive responses: efforts to avoid unpleasant internal experiences—such as fear of failure, self-imposed pressure, or frustration—reduce athletes' capacity for self-regulation, ultimately heightening their emotional burden.

This study contributes to the understanding of the relationship between psychological inflexibility and burnout in the sports context, where it has been scarcely examined. However, it presents several limitations that should be considered in future research. It should be noted that the use of questionnaires entails consequences derived from social desirability bias. Moreover, the sample size and the sampling procedure limit the external validity of the findings and their generalizability to the broader coaching population. Additionally, socio-sport variables that could influence, increase, or moderate burnout responses were not controlled for (e.g., work–family balance, the point in the competitive season when data were collected, etc.).

Conclusion

This study concludes that burnout syndrome is closely linked to psychological inflexibility. Individuals with higher levels of burnout are more likely to rely on rigid and ineffective coping strategies. In fact, psychological inflexibility emerges as a robust and significant predictor of burnout scores. However, sex did not demonstrate differential predictive capacity regarding burnout. Given the limited research connecting these constructs in the sports context, further studies are needed. Importantly, both burnout and psychological inflexibility are modifiable, highlighting the potential

for targeted interventions to improve coaches' mental health and performance.

Author contributions Data are available on the open science framework **OMITTED FOR REVIEW**

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Data availability All anonymized raw participant data are openly available in the Open Science Framework –OSF.

Declarations

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Approved by the Andalusian Ethics Committee of Biomedical Research Approved by the Andalusian Ethics Committee of Biomedical Research (Evaluation Committee of Huelva. Act: 05/24. Date of approval: 14-May-2024, Internal Code: SICEIA-2024-001020, Study code: 21071.

Conflicts of interest The authors declare no competing interests.

Informed consent Informed consent was obtained from all individual participants included in the study.

Institutional review board All procedures were in accordance with the ethical standards of the responsible committee on human experimentation (institutional and national) and the Declaration of Helsinki of 1975, revised in 2013. Approved by the Andalusian Ethics Committee of Biomedical Research Approved by the Andalusian Ethics Committee of Biomedical Research (Evaluation Committee of Huelva. Act: 05/24. Date of approval: 14-May-2024, Internal Code: SICEIA-2024-001020, Study code: 21071.

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References

1. Giges B, Petitpas AJ, Vernacchia RA (2004) Helping coaches meet their own needs: challenges for the sport psychology consultant. *Sport Psychol* 18(4):430–444
2. Dimitrios B, Athanasios K, Eleni Z, Koutiva M, Sdoliaris L, Barbi I (2013) Job satisfaction and job burnout of coaches—a review of the international literature. *Int J Hum Resour Man* 3(3):27–38

3. Olusoga P, Bentzen M, Kentta G (2019) Coach burnout: a scoping review. *Int Sport Coach J* 6(1):42–62. <https://doi.org/10.1123/iscj.2017-0094>
4. Lee YH, Chelladurai P (2018) Emotional intelligence, emotional labor, coach burnout, job satisfaction, and turnover intention in sport leadership. *Eur Sport Manage Q* 18:393–412. <https://doi.org/10.1080/16184742.2017.1406971>
5. Schaufeli WB, Salanova M, González-Romá V, Bakker AB (2002) The measurement of engagement and burnout: a two sample confirmatory factor analytic approach. *J Happiness Stud* 3:71–92. <https://doi.org/10.1023/A:1015630930326>
6. Altfeld S, Kellmann M (2015) Are German coaches highly exhausted? A study of differences in personal and environmental factors. *Int J Sports Sci Coach* 10(4):637–654. <https://doi.org/10.1260/1747-9541.10.4.637>
7. Lundkvist E, Gustafsson H, Davis PA (2016) What is missing and why it is missing from coach burnout research. In: Davis PA (ed) *The psychology of effective coaching and management*. Nova Science Publishers, New York, pp 407–427
8. Hayes SC, Strosahl KD, Wilson KG (2016) *Acceptance and Commitment Therapy. Process and practice of mindful change*, 2nd edn. Guilford Press, New York, NY
9. Chen LH, Wu CH, Chang JH (2017) Gratitude and athletes' life satisfaction: the moderating role of mindfulness. *J Happiness Stud* 18(4):1147–1159. <https://doi.org/10.1007/s10902-016-9764-7>
10. Bond FW, Hayes SC, Baer RA, Carpenter KM, Guenole N, Orcutt HK, Waltz T, Zettle RD (2011) Preliminary psychometric properties of the Acceptance and Action Questionnaire-II: a revised measure of psychological inflexibility and experiential avoidance. *Behav Ther* 42(4):676–688. <https://doi.org/10.1016/j.beth.2011.03.007>
11. Arbinaga F (2025) Pain catastrophizing related to psychological inflexibility, self-reported injuries and perfectionism in soccer referees. *J Sci Sport Exerc* 7(1):84–96. <https://doi.org/10.1007/s42978-023-00234-z>
12. Moore ZE (2009) Theoretical and empirical developments of the Mindfulness-Acceptance-Commitment (MAC) approach to performance enhancement. *J Clin Sport Psychol* 3(4):291–302. <https://doi.org/10.1123/jcsp.3.4.291>
13. Zhang CQ, Chung PK, Si G, Liu JD (2014) Psychometric properties of the acceptance and action questionnaire-II for Chinese college students and elite Chinese athletes. *Meas Eval Counsel Dev* 47(4):256–270. <https://doi.org/10.1177/0748175614538064>
14. Ruiz FJ, Langer A, Luciano C et al (2013) Measuring experiential avoidance and psychological inflexibility: the Spanish version of the Acceptance and Action Questionnaire-II. *Psicothema* 25(1):123–129
15. Raedeke TD, Smith AL (2004) Coping resources and athlete burnout: an examination of stress mediated and moderation hypotheses. *J Sport Exerc Psychol* 26(4):525–541. <https://doi.org/10.1123/jsep.26.4.525>
16. Pedrosa I, García-Cueto E (2012) Spanish adaptation of the athlete burnout questionnaire (ABQ) in a Spanish sample of athletes. *Ansiedad y Estrés* 18(2–3):155–166
17. Arbinaga F, Díaz-Rodríguez J, Gutiérrez-Fernández JN, Moreno-San-Pedro E, Díaz-Ceballos I (2025) Psychopathological symptoms in volleyball coaches: An approximation of their relationships with coping strategies and psychological inflexibility. *Sport Coach. J.*, Advance online publication, Int. <https://doi.org/10.1123/iscj.2025-0001>
18. Marín-Romero B, García Lecumberri C (2023) Psychological inflexibility and psychopathological profile in substance addicts: sex differences. *J Psychopathol Clin Sci* 28(3):167–186. <https://doi.org/10.5944/rppc.37221>
19. Ronkainen H, Lundgren T, Kenttä G, Ihalainen J, Valtonen M, Lappalainen R (2024) Psychological flexibility skills and mental wellbeing in athletes: an exploration of gender differences. *Psychol Behav Sci* 13(2):43–55. <https://doi.org/10.11648/j.pbs.20241302.14>
20. Heidari S (2013) Gender differences in burnout in individual athletes. *Eur J Exp Biol* 3(3):583–588
21. Glandorf HL, Madigan DJ, Kavanagh O, Mallinson-Howard SH, Donachie TC, Olsson LF, Rumbold JL (2024) Athlete burnout and mental and physical health: a three-wave longitudinal study of direct and reciprocal effects. *Sport Exerc Perform Psychol* 13(4):412–431. <https://doi.org/10.1037/spy0000355>
22. Johles L, Gustafsson H, Jansson-Fröjmark M, Classon C, Haselqvist J, Lundgren T (2020) Psychological flexibility among competitive athletes: a psychometric investigation of a new scale. *Front Sports Act Living* 2:110. <https://doi.org/10.3389/fspor.2020.00110>
23. Lin C-H, Lu FJH, Chen T-W, Hsu Y (2021) Relationship between athlete stress and burnout: a systematic review and meta-analysis. *Int J Sport Exerc Psychol* 20(5):1295–1315. <https://doi.org/10.1080/1612197X.2021.1987503>
24. White, R. G., Bethell, A., Charnock, L., Leckey, S., & Penpraze, V. (2021). *Acceptance and Commitment Approaches for Athletes' Wellbeing and Performance: The Flexible Mind*. Springer. <https://link.springer.com/book/https://doi.org/10.1007/978-3-030-64942-5>
25. Wood S, Turner MJ (2025) Using acceptance and commitment therapy with athletes. *Scand J Sport Exerc Psychol* 7:1–9. <https://doi.org/10.7146/sjsep.v7i.150889>
26. Jiménez-Fernández R, Corral-Liria I, Trevissón-Redondo B et al (2022) Burnout, resilience and psychological flexibility in front-line nurses during the acute phase of the COVID-19 pandemic (2020) in Madrid, Spain. *J Nurs Manag* 30(7):2549–2556. <https://doi.org/10.1111/jonm.13778>
27. Sairanen E, Lappalainen P, Hiltunen A (2018) Psychological inflexibility explains distress in parents whose children have chronic conditions. *PLoS ONE* 25(7):e0201155. <https://doi.org/10.1371/journal.pone.0201155>

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