

女子野球選手における自律神経機能の特徴～競技と仕事の両立に着目して～

学籍番号 4124033

氏名 竹内 くらら

【目的】

本研究では、仕事と競技活動を両立する女子野球選手における自律神経機能、心理状態、主観的疲労の特徴を明らかにし、一般社会人女性との比較からデュアルキャリアが心身に及ぼす影響を検討する。

【方法】

対象は女子野球選手8名と社会人女性9名とし、各被験者に対して3日間、自律神経測定センサー(VM302)を用いてLF、HF、TP、LF/HF、CCVTPといった自律神経指標を測定した。心理状態はPOMS2、主観的疲労はChalder Fatigue Scaleによって評価し、3回分の平均値を算出した上で群間比較を行った。統計解析にはt検定またはMann-Whitney U検定を用い、自律神経指標と心理指標の関連はSpearmanの順位相関係数を算出した。

【結果】

LF、HF、TP、LF/HF、CCVTPなど全ての自律神経指標で群間差はみられず、POMS2やChalder疲労尺度も両群でほぼ同程度であった。一方、相関分析では特徴が分かれ、女子野球選手群ではLF/HFとPOMS2混乱(CB)の正の相関が認められ、交感神経優位が心理的混乱と関連していた。社会人女性群ではLF/HFが疲労(FI)増大や活気(VA)低下と関連し、交感神経優位が疲労や気分状態に影響している可能性が示された。

【結論】

女子野球選手と社会人女性では、自律神経活動と心理反応の関連パターンが異なることが明らかとなった。デュアルキャリア選手は、勤務後の限られた時間で競技に取り組む特性上、ストレスや心理的混乱が生じやすい可能性があり、競技と仕事の両立のためには心理調整や疲労管理が重要であることが示唆された。

Balancing competitive sports and employment in female baseball players: A correlation among significant factors

Student ID Number: 4124033

Name: TAKEUCHI, Kurara

[Purpose]

This study aimed to find the correlation among the autonomic nervous system activity, psychological states, and subjective fatigue in female baseball players who balance work and competitive sports, and to examine the influence of the dual-career lifestyle by comparing them with adult working women.

[Methods]

Participants were eight female baseball players and nine working women. Autonomic activity was measured for three days using the VM302 sensor (LF, HF, TP, LF/HF, and CCVTP). Psychological states were assessed with the POMS2, and subjective fatigue on the Chalder Fatigue Scale. Mean values across three measurements were used for group comparisons via t-tests or Mann–Whitney U tests. Associations between autonomic and psychological indicators were examined using Spearman's rank correlation.

[Results]

No significant differences were found between the groups in any autonomic indices, including LF, HF, TP, LF/HF, and CCVTP. Likewise, no group differences were observed in the POMS2 subscale scores or the total T-score. The Chalder Fatigue Scale showed similar levels of subjective fatigue between the groups (15.9 points for players and 16.7 points for working women).

Correlation analyses revealed that, among female baseball players, LF/HF was positively associated with the POMS2 Confusion (CB) score, suggesting that greater sympathetic dominance corresponded to increased psychological confusion. In contrast, among working women, LF/HF showed significant negative associations with Fatigue (FI) and Vigor (VA), indicating decreased sympathetic responsiveness in individuals experiencing higher fatigue and lower vitality.

[Conclusion]

These findings suggest that female baseball players tend to experience heightened sympathetic activity before practice after work, which is linked to psychological confusion. Working women, on the other hand, showed associations between autonomic activity and daily fatigue or vitality. Overall, the results highlight distinct stress-response patterns between the groups and emphasize the importance of psychological adjustment and fatigue management for dual-career athletes.