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Wellness factors that distinguish responders and non-responders to training in rowing

Tran, J.¹, Main, L.C.¹, Rice, A.J.², Gastin, P.B.²

¹: Centre for Exercise and Sport Science, Deakin University (Melbourne, Australia) | ²: National Rowing Centre & Australian Institute of Sport (Canberra, Australia)

INTRODUCTION

To continue achieving exceptional athletic performance, sports science requires further understanding of how training stressors interact with adaptive responses to ultimately influence performance outcomes. Researchers have tended to focus on the relationships between training and athlete wellness, with relatively little exploration of how wellness subsequently impacts the ultimate outcome of interest – performance. Therefore, the purpose of this study was to investigate self-reported symptoms of training distress, motivation, and burnout that could distinguish between responders and non-responders to training in rowing.

METHODS

Nineteen sub-elite rowers (11 males, 8 females) were monitored throughout a 12-week training block. The athletes completed a 6 x 6 min step test on a rowing ergometer with slides before and after the training block. Athletes were grouped as Responders if their rowing performance improved (n = 10), or as Non-Responders if their performance stagnated or did not improve after 12 weeks (n = 9). Three measures of training load – total training duration, 2-minute training loads (Tran et al., 2012), and Session-RPE (Foster et al., 2001) – were recorded weekly, to comprehensively assess external and internal training loads. Training distress was monitored weekly using the Multidimensional Training Distress Scale (MTDS; Main & Grove, 2009). Motivation and burnout were monitored monthly, using The Sport Motivation Scale (SMS; Pelletier et al., 1995) and Athlete Burnout Questionnaire (ABQ; Raedeke & Smith, 2001). Due to athlete compliance issues, the data were averaged within four 3-week periods for analysis.

RESULTS

The training loads completed by the two groups were not different. However, significant differences between Responders and Non-Responders were observed for select subscales in each of the three wellness measures (Figs. 1-5). These differences were large enough to overcome considerable within-group variability in the data. In all cases, Responders reported more pronounced scores for undesirable aspects of wellness than Non-Responders. Spearman’s correlation analysis revealed moderate to very strong positive relationships between Group and select subscales (rho range = 0.50-0.89), indicating that those who were experiencing positive training adaptations were more likely to score highly on negative dimensions of wellness (Fig. 5).

DISCUSSION

Responders provided higher ratings than Non-Responders for several undesirable wellness factors. Poor wellness responses may not necessarily indicate maladaptation. The large within-group variability observed and the unexpected findings of this study illustrate that wellness responses are volatile and highly individual. As such, care must be taken to accurately interpret psychosocial wellness data. This may be assisted by retrieving additional information (e.g., initiating follow-up conversations with athletes) to provide necessary context to the data.

References

[Provide a list of references here.]

Figures

Figure 1. Training distress (top) and burnout (bottom) scores, for Responders versus Non-Responders in Period 1.

Figure 2. Motivation scores for Responders versus Non-Responders in Period 2.

Figure 3. Training distress (top) and burnout (bottom) scores, for Responders versus Non-Responders in Period 3.

Figure 4. Training distress scores for Responders versus Non-Responders in Period 4.

Figure 5. Wellness subscales that correlated with Group, and distinguished between Responders and Non-Responders in a sub-elite rowing cohort, throughout a 12-week training block.