Comparison of Subjective and Objective Measures of Internal Training Load in Female Youth Soccer Players
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Determination of internal training loads (TL) in athletes is important for proper monitoring and prescription of exercise, and self-reported session rating of perceived exertion (sRPE) has been suggested as a simple, inexpensive means to determine TL. While sRPE and objective measures of TL have been compared among adults and male youth athletes, we are aware of no prior research which has evaluated this relationship in female youth athletes.

**Purpose**: To compare sRPE and heart rate based measures of internal training load among female youth soccer players.

**Methods**: Female soccer athletes (ages 13-18) were monitored over 7 weeks (3 sessions per week) of training using sRPE and heart rate based measures of internal training load [Edwards TL and Banister's training impulse (TRIMP)]. Spearman rank correlation coefficients were determined between methods using daily average TL for the entire group as well as using individual TL for the entire group and separately for each age group.

**Results**: For average TL from 21 training sessions, correlations were significant and strong between sRPE and Edwards TL ($r=0.79$, $p<0.001$) and Banister's TRIMP ($r=0.80$, $p<0.001$), as well as between Edwards TL and Banister's TRIMP ($r=0.99$, $p<0.001$). Correlations of TL from 425 individual sessions were significant and moderate between sRPE and Edwards TL ($r=0.40$, $p<0.001$) and Banister's TRIMP ($r=0.41$, $p<0.001$), but strong between Edwards TL and Banister's TRIMP ($r=0.97$, $p<0.001$). Correlations from individual sessions for each age group were moderate and similar between sRPE and Edwards TL ($r=0.260.45$, $p<0.001$ for all) and Banister's TRIMP ($r=0.260.51$, $p<0.001$ for all).

**Conclusion**: Subjective and objective measures of TL appear similar when using daily averages, and may be interchangeable for monitoring an entire group of youth female soccer players. The relationship is weaker on an individual level, however, but similar across age groups. This suggests that objective and subjective TL measures should not be used interchangeably when prescribing or monitoring exercise intensity on an individual level in female youth soccer players.