Effects of progressive fatigue and expertise on self-talk content in running: an ambulatory assessment approach

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Introduction
In this study we investigated how progressive fatigue differentially affects self-talk use (nr. of statements) and content (instructional, motivational, positive, negative) in recreational and competitive runners, by using a new ambulatory assessment method called "PsyqRun" – a smartphone application that enables online assessment of psychological states and variables (e.g. self-perceived exertion, self-talk) during exercise.

Methods
42 participants (20 recreational runners, 22 competitive runners) performed a strenuous running exercise in which they attempted to reach a maximal distance over eight 2-minute intervals. Self-perceived exertion (RPE) and self-talk were assessed at the end of every interval by using the PsyqRun application. Heart rate was measured continuously with a heart rate monitor. Results
RPE scores and heart rate measurement confirmed that fatigue systematically increased as a function of exercise interval. Under high levels of fatigue (i.e., at later intervals) participants generally reported more self-talk statements than under low levels of fatigue (i.e., at earlier intervals). More specifically, with increasing fatigue, participants’ use of positive and motivational self-talk strongly increased at the cost of instructional self-talk, which strongly decreased. Finally, a marginally significant effect of expertise (p = .058) indicated that competitive runners used more instructional self-talk than recreational runners – also under high levels of fatigue.

Discussion
Using modern smartphone technology, the current study was the first to provide an online assessment of fatigue and self-talk in running. Findings indicated that participants actively focused on their running technique at the start of the exercise (e.g., "keep running smoothly") but shifted to self-motivation and perseverance during later intervals, when they became more fatigued (e.g., "just one more interval"). These results are consistent with research on fatigue and attentional focus and indicate that – with increasing fatigue – runners’ thoughts and attention are automatically drawn inwards towards the monitoring of internal states and processes. Finally, it is suggested that by using more instructional self-talk, competitive runners may be able to...
maintain a more efficient running technique, also under high levels of fatigue. Further development of the PsyqRun application should clarify this matter, by relating the assessment of self-talk to objective measures of running technique and performance.

Abstract text

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Keyword III: self-talk