

Reduced behavioural variability in the cognitive profile and wellbeing of expert meditators

Joanna Greer, Lea Martinon, Sheridan Edwards, Vicky Ferguson, Elliot Stockdale, Leigh Riby
Northumbria University, Newcastle-upon-Tyne, United Kingdom

Background: Experienced meditators are widely reported to be experts in attentional control and having a bias towards ‘here and now’ thinking. Importantly, changes in attention of this nature along with greater behavioural inhibition are linked to significant health and wellbeing outcomes (e.g. reduced pain, ruminations, increased positive mood, and lower levels of depression, anxiety, and stress). The current study systematically explored different components of attentional and inhibitory processing using well-established neurocognitive tasks with a view to understanding the information processing style of expert meditators. **Methods:** A group of novice meditators and expert meditators performed two versions (easy vs. difficult) of the Sustained Attention to Response Task (SART: Robertson et al., 1997), a Go / No Go paradigm used extensively with typically developing and clinical populations to probe 1) the efficient processing of detail in the environment, 2) overall levels of attention and task focus, 3) inhibitory control, and 4) the ability to monitor task performance. **Results:** Our preliminary behavioural analyses (alongside EEG brain imaging data from our lab) indicate enhanced attentional focus to both task relevant and irrelevant information in the expert meditators. This was evidenced by reduced variability in both hit rates and reaction time measurements. Also, lower false alarm rates along with lower variability between the expert meditators is indicative of more efficient inhibitory control, suggesting that expert meditators are able to compensate for greater cognitive load and are less susceptible to attentional drift. Furthermore, self-report measures of wellbeing including quality of life, subjective happiness, and emotion regulation were consistently related to our abovementioned cognitive control measures. **Conclusions:** The implications of this work are twofold. First, the data address the fact that attention is a broad construct and here we pinpointed the contributions of specific aspects of these functions in expert meditators. Second, as the observed behavioural profiles were linked to wellbeing measures, this highlights the direction for further intervention work in this area.