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Commentary

Moving towards individualised and interdisciplinary approaches to treat persistent post-concussion symptoms

Kannan Singaravelu Jaganathan, Karen A. Sullivan*

School of Psychology and Counselling, Queensland University of Technology (QUT), Brisbane, Queensland, Australia

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Significance to research

Post-concussion symptoms (PCS) present a global healthcare problem that incurs considerable economic burden. Most patients recover well after a concussion but persistent PCS (PPCS) have been reported in 10% to 25% of patients [1]. Functional outcomes such as cognition, social skills and employment can be impacted for protracted periods in those affected [2]. Current consensus suggests that complex interactions between physiogenic and psychogenic factors contribute to symptoms after injury [3], and understanding the aetiology of PPCS is further challenged by variability in symptom presentation and the absence of objective markers [4]. Given these complexities, it is perhaps understandable that self-reported symptom reduction to pre-injury levels is often the primary yardstick to determine the effectiveness of any intervention. The pursuit towards establishing a stronger evidence base on how to achieve this outcome should be welcomed. While the need for more research is abundantly clear, the way forward must cater for specific patient needs by using a flexible, individualised approach. Thatsum et al. [5] are on track towards this objective. They have developed and evaluated a novel and individualised interdisciplinary intervention to treat PPCS in an at-risk group. Their work is timely, clinically relevant and makes a significant contribution to PPCS rehabilitation literature.

In the context of current clinical practice

A biopsychosocial perspective helps conceptualise the myriad pre, peri and post-injury factors contributing to PPCS. Interdisciplinary intervention approaches strive to address one or more of these factors. The past decade has seen mixed evidence for specific treatment modalities such as physical therapy [6], non-pharmacological interventions [7], psychological therapy, [8] as well as interdisciplinary approaches for reducing PPCS [9–11]. While the positive outcomes resulting from interdisciplinary interventions fuel optimism, the challenges in developing, delivering, evaluating, costing, and translating such approaches cannot be understated. Coordination between different healthcare professionals, logistical demands, sharing of patient information and high costs can make such interventions appear impractical. Notwithstanding these challenges, the overall benefits of such programs can arguably outweigh the gains from a cookie-cutter or single modality approach. In this light, the Thatsum et al. study is clinically relevant because it has (1) considered a participant pool that is representative of an at-risk demographic, (2) adapted the treatment for individual preferences and cost effectiveness, and (3) developed the intervention based on established principles of cognitive behavioural therapy and contemporary return-to-activity protocols.

Unanswered questions

More clinical and comparative trials of interdisciplinary interventions will be needed, and more specific information to guide future efforts will be beneficial. Future work can explore the applicability of the Thatsum et al. [5] intervention to other at- risk populations, such as older adults. Further insights into the essential elements of an interdisciplinary intervention could improve cost effectiveness and the eventual translation, including to underserviced communities who may otherwise have limited access to interdisciplinary care. Key questions for further consideration include establishing the ideal treatment dose, and to assist with planning, if this can be estimated for individuals before treatment begins. It will also be important to determine the contribution of individual and interacting therapeutic modalities, and how they affect specific symptoms, symptom clusters, and longer-term, complex outcomes, such as quality of life. It is also not yet clear how the social effects of group-based modalities could add benefit to the intervention, and if so, the subgroups for whom this is the case. With the current proliferation of app-based supports and remote symptom monitoring for many conditions, we also see the potential to harness technology for supervising and aiding intervention delivery and evaluation.

Key messages

While unravelling the specific mechanisms behind the onset of PPCS continues to be the holy grail in concussion research, expanding

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* Corresponding author.
E-mail address: karen.sullivan@qut.edu.au (K.A. Sullivan).

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the work done on PPCS rehabilitation is just as, if not more, important. With the consensus now moving towards the idea that the best outcomes are achieved through individualised, multimodal intervention, the goal to determine optimal techniques for treating PPCS and making it accessible for those in need should continue to take centre stage.

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