Paper Outline

Title Ideas:

1. How Retrospective Analysis Can Inform the Future of Data-Driven Return-to-Learn Protocols
2. What Twenty Years of Educational Concussion Data Can Teach Us about the Future of Return-to-Learn

Introduction/literature review:

* History of RTL
  + recognition of established RTP guidelines and collective call for similar RTL guideline
* Examples of theoretical/proposed models in existing literature
  + Gioia 2016
  + Dachtyl and Morales
  + Davies
  + Knollman-Porter (university example)
  + McAvoy, K: Eagan-Johnson 1
  + McAvoy, Eagan-Johnson2
* What we think RTL needs
  + Method of identification of concussed student. (especially for concussion events that occur off campus)
  + communication between teachers and support staff
  + staff trainings on concussion and what students need following concussion
  + Standardized methods of evaluating/assessing concussed students individualized needs throughout concussion recovery
  + Method of monitoring concussed students throughout RTL process
  + Criteria based discharge from RTL
* Purpose of this paper:
  + who/what is HCAMP
  + mission
  + description of RTP protocol in place (Tamura et al, 2020)
  + rationale for why understanding symptom cluster reporting at time of ImPACT testing can influence the development of data-driven RTL to improve student outcome

Introduction

* concussion is evolving
* understanding symptom profile immediately after injury is crucial to understanding student needs
* limited evaluation of RTL models
  + what do models have in common?
  + do models align with what the data found?
  + tie the existing models to the purpose of the paper
  + need to include commonalities of models
* HCAMP background and purpose

Method:

* description of data (e.g., data structured into four specific populations based upon the number of ImPACT tests completed)
* description of how PCSS data was organized into clusters and rescaled to be compared
* Do we want to include any SIMS data information or data on specific ImPACT test scores? (test scores seem to do deviate from purpose of paper based on previous discussions)

Results:

* can provide summaries of various variables, such as gender, age, sport
* ANOVA results for each cluster comparison with rescaled data

Discussion:

* what is the value of this retrospective data analysis?
* how can it influence the future of RTL?
* what are the trends in cluster severity scores that reflect student needs and can shape the needs of an RTL protocol?
* what are the measurement limitations that we need to address to developing effective and replicable protocols to support students through the RTL process?
* What are the measurement limitations that we need to address to develop effective and replicable monitoring instraments to provide clinicians with reliable and valid information in determining RTL management decisions.
* What are the limitations that we need to address to develop a proposed RTL model that will fit or adjust to various grade levels, socio-economic environments, and student populations.

Discussion:

* answers to research questions
* how does this impact RTL?
* need to experimentally evaluate models
* what’s needed (e.g. early supports) and how they can occur
* don’t want to over-identify females but important to be aware of – should continued to be monitoring
  + could be a variety of factors (e.g. behavioral, hormonal, physiological)
* consider importance of initial symptom severity
  + can this lead to cut-off scores to get people involved more quickly
* findings support what’s been done
  + next step is to experimentally evaluate models that can successfully return students to classroom that can be completed in the school setting

1. McAvoy K, Eagan-Johnson B, Halstead M. Return to learn: Transitioning to school and through ascending levels of academic support for students following a concussion. *NeuroRehabilitation.* 2018;42(3):325-330.

2. McAvoy K, Eagan-Johnson B, Dymacek R, Hooper S, McCart M, Tyler J. Establishing Consensus for Essential Elements in Returning to Learn Following a Concussion. *The Journal of school health.* 2020;90(11):849-858.