[1,2*] [2,3] [4] . B [2] B [2]
[2,3]

B : (A) (36),
A (A -2).

: (n = 205, = 9.50 ,
= 1.14, 50.7%), A -2
1 A ,
2 ( )
( ).

: 16
A ,
;
A -2:
A -2
($\chi^2_{(63)} = 81.45$, **p** = 0.06, = 0.908, A = 0.038, 90% (0.00, 0.060)).

C : 12
A -2.

:

The Canadian Assessment of Physical Literacy (CAPL) [1] is a comprehensive instrument designed to assess children's physical literacy. Physical literacy can be defined as "the motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engagement in physical activities for life" [2]. Although debate exists as to whether or not physical literacy needs to be and can be quantified [3], some have argued that appropriate measurement of physical literacy should be established if physical literacy is to serve as a key outcome of physical education curricula [4]. The CAPL comprises four interrelated domains: Physical Competence; Daily Behaviour; Motivation and Confidence; and Knowledge and Understanding.

Recently, confirmatory factor analyses were used to refine the 25 aggregated indicators of the CAPL, and results supported the factor structure of a 14-aggregated-indicator version called the CAPL–Second Edition (CAPL-2; see [5]). Nevertheless, this move toward a more parsimonious model did not successfully resolve issues about participant and administrator burden or about the theoretical anchoring for the Motivation and Confidence domain. Therefore, the overall objectives of this paper were to: (1) further refine the CAPL Motivation and Confidence domain by reducing the number of items participants needed to complete and by enhancing instructional clarity; and (2) ensure the Motivation and Confidence domain was theoretically

demonstrated good factor structure and reliability. It is important to note that our purpose was to use existing questionnaires that have demonstrated initial score reliability and validity in children and youth for the assessment of motivation and confidence. Our intention was not to re-develop items, item response formats, or create new items. Rather, our goal was to refine existing CAPL questionnaires and add existing questionnaires to theoretically anchor the Motivation and Confidence domain within CAPL. We view the development of CAPL as an ongoing process, and this contribution should be seen as one initial step in the ongoing process of validation.

Finally, although we recognize that Whitehead's concept of charting progress in physical literacy is well aligned to objective measurements [6], the CAPL was specifically developed to address calls for the development of standardized assessments of physical literacy [4]. To this end, the purpose of this contribution was not to advance the debate about how or whether phys-

pleasure and fun; "being active is fun"); identified regula-

Endurance Run ([25] was completed and scored in number of laps completed.

D

Data screening and cleaning was conducted in R using the psych package [26, 27]. Participants were removed (= 17; [28]) if they did not provide data on age or gender, or if their scores fell outside 1.5*Interquartile range [28]. Age- and gender-matched z-scores were calculated for each variable, and no outliers (z > 5.00) were present. Descriptive statistics for each item are presented in Additional file 4. The main analyses were estimated in Mplus version 8.0. All syntax is provided in Additional file 5.

Analyses proceeded in sequential steps. In the first step, confirmatory factor analyses were calculated separately for each individual measurement scale. Coefficient H and omega total were calculated as estimates of score reliability for each subscale (formulas provided in Additional file 5). Coefficient H is an assessment of max-

two cross-loadings from predilection to two items of ad-

and Predilection for Physical Activity Scale [8], for which correlated errors have been reported in the Spanish version [32]. Given previous reports that the structured alternative response format could create method effects [12], we conducted an exploratory factor analysis to further investigate the factor structure of the alternative response items. We found evidence for a four-factor solution that we further narrowed down (based on the factor loadings and consideration of content representation) to three meaningful factors. To further reduce participant burden and also to reduce content overlap with other domains within CAPL, three items were selected for each of predilection and adequacy. These short measures of adequacy and predilection provided an excellent fit.

Consistent with the findings of Sebire and colleagues [19], we found that the factor structure of scores from the children's adapted Behavioural Regulation in Exercise Questionnaire and five positively worded perceived competence satisfaction items were a good fit. Nevertheless, we also found that score reliability was low for intro-

physical literacy researchers often use quizzes to test spe-
cific aspects of explicit knowledge (e.g., knowledge of

A