The paper “Psychometric Properties of the PLAYSelf in a Cohort of Secondary School Student-Athletes” is directed to undertaking a psychometric eval of the play self tool in grade 8-12 student athletes, which fills a gap in the literature.

I read this paper with interest, and find it can make a good contirbutuion to the literature with revision.

- missing some references for comparison
- need to justify the athlete argument a bit more
- need to justify an EFA when your language is CFA

> Authors’ Response: Thank you for the constructive and thorough manuscript review. We have responded to each recommendation below.

Abstract

The purpose was to extend validation to older age group, so the background is incomplete story for setting the rationale for the study. Need to add a line stating this rationale.

> Authors’ Response: We have adjusted the abstract to reflect the purpose more clearly.

design of the PLAY Self tool was based upon the IPLA definition of physical literacy (Whitehead 2010) not the 2015 abbreviated “public” definition of the Aspen Institute from Project Play. I see why you’d want to use the abbreviated def but it is not true to the origin of the construct, specifically “reported measure of ability, confidence, and desire”. Please revise.

> Authors’ Response: Thank you for this feedback. We have adjusted the physical literacy definition and used the IPLA definition throughout the manuscript.

The results and conclusions in abstract are nicely stated.

Introduction

The paper illustrating a relationship of PLAY Self to PA, and that PL may be protective against PA erosion (in the pandemic) should be cited in the intro paragraph (ref- when the world stops- Houser et al). This not only substantiates the relationship of PL to elevated PA (and btw directly to the tool of interest), but PL may be protective against PA erosion.

> Authors’ Response: Thank you for sharing the Houser et al. article with our team. We have added the following statement at the end of the first paragraph to better set the stage for the connection between physical activity and physical literacy.
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> > “More recently, Houser et al. found that children with higher levels of physical literacy before the coronavirus disease (COVID-19 (9) were protective of the decline of physical activity during the pandemic [6].”

Line 29-30 implies a physically illiterate threshold – possible rephrase ?

Authors' Response: We believe that the reviewer is referring to the line, "Physical activity and physical literacy levels in children and adolescents are strongly related to adulthood behaviors." We are unsure of the implication but are very open to rephrasing if the reviewer or editor could expand on this comment or provide a suggestion on the preferred rephrasing.

The definition choice does not fit with the references cited, most of these referfences adopt the IPLA definition 33-34. Further the definition you cite arose from Aspen Project Play 2015 document "PHYSICAL LITERACY IN THE UNITED STATES A MODEL, STRATEGIC PLAN, AND CALL TO ACTION". Please revise. Further, the domains that you state are associated with the IPLA def, the Canadian Consensus statement (2015) as well as other consensus statements (Australia 2019, Ireland 2022 and England 2023) – so lines 33-39 should be coherent in this regard.

Author Response: Thank you for this point and the attention to detail. We recognize that the field cannot move forward cohesively without precision and transparency on the definitions and constructs that are measured. We have streamlined our information to align with the IPLA definition with supportive references from the Canada and Ireland Consensus Statements. The Australia and England statements did not seem to so directly use the same IPLA definition so we did not include them in our reference support. Thank you again for holding us accountable in our pursuit to advance the physical literacy science.

Lines 39-43 seem letter placed with the first intro paragraph. And I would suggest adding the Danish work showing mediation effects of PL to PA to health, and PL directedly to health.

Author Response: The introduction has been rearranged and expanded upon to better support the need for this study and to reflect the existing physical literacy work. The Danish citation has been added.

Line 46 – PLAY suite of tools was released in Banff, Canada at the first international physical literacy conference in 2013. And the tools were design for people aged 7 years and over, but original intent was for children and youth (to 18+), but clearly the PLAY SELF tool has one unidimensionally distinct set of items relating to literacies which doesn't work well with people out of school. Further there are over 25 studies that have reported on PL self description that you don't cite here and its potential value. I don't think you have to but your references are "biased" toward the physical activity and guideline achievement goals. Just a note to consider.

Authors' Response: Thank you for this point, as this has prompted much internal discussion on the tone and intention of our reference choices and reasoning throughout the paper. For this particular point, "Psychometric analyses have been conducted for the PLAYself in younger adolescents (8-13 years of age) [14], middle school children [16], Canadian children 8-14 years of age [17], college-age adults (18-25 years of age) [18], but not with adolescent student-athletes at the secondary school level (i.e., high school)…" we were focused on papers that were specifically evaluating psychometric properties of the PLAYSelf; however we have tried to include additional PLAY SELF resources throughout the introduction as recommended by the reviewer in order to be more comprehensive describing the gap this paper fills.

Line 48-51 – the PLAY self tool has been applied in older adults, and indeed adapted for older aged individuals esp by the Chinese. These should be mentioned to support your "gap" statement at line 51.

Author Response: while we want to be inclusive of populations with physical literacy tools available, this particular line is specific to the PLAY self, so we have not included these references (Chien-Yu et al., 2022; Huang et al., 2020; Wang et al., 2023).

Line 50 – the need to associate with country should either be provided for each assessment or dropped.

Author Response: We agree and have removed the specificity of the United States and have expanded on our reasoning around the specificity of athletes and the age group studied.

Line 51 – you identify the "gap" in validation here to adolescent, high school student – athletes

- Line 53-54 "Adolescent student-athletes are in a stage of physical and emotional development, making this a critical time…" I was not compelled by the statement above about the need for student -athlete validation, please explain why this is more important that additional validation at high school in students in general? Are you implying for a performance excellence trajectory in sport contexts? As opposed to a general student's trajectory to be active for life? (which is you foundation in the first two paragraphs). You could make a better story about sport using the ADM and LTD3 documents and those pathways!

  Author Response: Thank you for this suggestion to strengthen our paper. We have embedded information about the LTAD model to support this point and make a stronger case for the investigation of secondary school aged athletes.

- Further, this "student-athlete" statement is not inclusive of others that are in performance development such as those that are "student artists" like those in development for circus or ballet. There is a paper on the special considerations for development of circus artists using PL by Stuckey et al that might be handy to ref here? Stuckey M, Richard V, Decker A, Aubertin P, Kriellaars D. Supporting Holistic Wellbeing for Performing Artists During the COVID-19 Pandemic and Recovery: Study Protocol. Front Psychol. 2021 Feb 4;12:577882. doi: 10.3389/fpsyg.2021.577882. PMID: 33613376; PMCID: PMC7889520.
- High performance artists DO NOT identify as athletes by in large, FYI.

  Authors' Response: Thank you for broadening our knowledge base to include student artists (we like this term!). We could not find a citation that validated the PLAY*self* in a sample of high-performance artists and, therefore, did not include a reference within this specific section as it relates to the psychometric properties of the PLAY*self*. However, we did include in the limitation section that our research team acknowledges the narrow focus of the term 'student-athlete', and future research should use a broader definition.

- Line 54 – is it age appropriate you are seeking or athlete specific validation? Because the age range validated from the listed studies is 8-25! Which encompasses your ages but NOT specific to athletes. Also if the athlete focus is indeed the focus of the study, there will have to be studies of non-student athletes, and professional athletes at this age as well.

  Author Response: We believe the psychometric properties of PLAYself have been evaluated in 8-14 and 18-25 but not in the secondary school population that we have evaluated with this study. We have incorporated your helpful feedback to try to better highlight this gap and make a stronger case for athlete population. We agree that future

studies should also evaluate those important populations of non-student athletes and elite level athletes in this age group and have suggested it as a future direction in the paper.

Line 56 to 58. Well if you state this (alignment with existing domains), which I tend to agree with, then a EFA would be the wrong choice and a CFA should be deployed! Please defend.

Authors' Response: We appreciate the opportunity for justification with our analytic procedures. Our team takes the approach that anytime a tool is used in a new population, the validation process should start over (Boateng et al., 2018). We also didn't want to determine structure fit, as the seminal papers for this work (i.e., Jeffries et al., 2021; Caldwell et al., 2020) were conducted in a sample of 8-14 year olds, which does not align with our cohort of interest. At the same time, we understand that when a clear theoretical framework has been established (i.e., Jeffries et al., 2021), a CFA would better determine data/structure fit. To appropriately navigate the differences between EFA and CFA models, we have removed "aligning with the different domains" to make it clear that we are seeking to determine if the PLAY*self* is unidimensional or not in this novel sample. We have added a statement within the limitations and future direction sections that a CFA, in a new cohort, is needed to complete the validation process.

"Additionally, to complete the validation process, a confirmatory factor analysis needs to be conducted with a new cohort of student-athletes in the secondary school set to ensure the factor structure is maintained."

61 – what was the purpose of the cross sectional larger study? The sentence in 61-63 is hard to decipher as to the intent of the larger study. Please explain.

Authors' Response: We added text to better articulate that this manuscript and validation portion was part of a larger study.

"We conducted a large cross-sectional study using survey methodologies to assess physical literacy, sports specialization, and social determinants of health in secondary school student-athletes recruited from three schools in the Southwestern United States. This manuscript focuses on the validation process of the larger study."

Line 64 – what is a "rural city" ? versus and "urban city" versus a large metropolitan area. I would revise this statement.

Authors' Response: Thank you for this recommendation. We removed the descriptions of "urban" and "rural" and instead focused on the composition of the student body as presented by a national organization.

Line 65-67 If you are describing the student body of the one school using ref 19, how about the other schools? And also, does the average student body demographics represent the "student athlete " group? There a plenty of studies indicating that the athletes at school of typically not representative of the student body as a whole!

Authors' Response: The reference (formally 19, now 25) is the US News and World Report, which allows for searching the school name to assess various student body characteristics; therefore, it

is the same website for all three schools. We would prefer not to cite the actual school due to the privacy of the participants. We had added text to the limitations section to highlight that, indeed, while we have diversity in the participants, they may not be fully representative of the overall student body.

> "Also, while diverse secondary schools were recruited and student-athletes participated in this study, these student-athletes may not represent the overall study body characteristics and may be a more homogeneous cohort."

Line 68 – so if the athletes were in Off season that would disregarded? Please explain. Also what if they were enrolled in a competitive sport that was not high school related? The were discarded? You state two semesters to be captured at line 101, so . why do you make the off season statement?

Authors' Response: For this initial study, we focused on current student-athletes participating in secondary-school sponsored athletics. We fully recognize that athletes who participate in only club sanctioned sports would be excluded. We have added this as a limitation within the manuscript. Student-athletes who only competed in the Winter sports season are not represented in the sample surveyed.

Line 73-74 – need consent document number and university listed.

Authors' Response: We have listed the consent document number (i.e., project number) and will add the University's identification after the manuscript is accepted.

Line 70 – minor assessment form? What is that, is this an assent form? So the participants provided written assent, and the parent provided written consent ? please be specific

Authors' Response: We have added the following text to make the distinction clear.

> "Willing parents signed the informed consent, and then the student-athletes signed the minor assent who were 17 and younger. Student-athletes who were 18 could sign the informed consent form as legal age adults."