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EDITORIAL

Embracing the Future: Transitioning to a Completely Open-Access Platform

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In the dynamic and ever-evolving field of academic publishing, change is not merely inevitable but essential. This sector, characterised by rapid advancements and a continuous influx of new knowledge, requires ongoing adaptation to maintain the dissemination of high-quality, relevant, and timely information. Integrating digital platforms, open-access models, and advanced analytical tools is crucial for expanding accessibility and enhancing research integrity. Embracing these diverse perspectives, innovative peer review processes, and sustainable practices ensures that academic publishing can effectively support and reflect the global research community's needs and challenges.

We are thrilled to announce a new and significant milestone in the history of *International Sports Studies* (ISS): the transition from a subscription-based model (with an open-access option) to a fully open-access publishing platform. This progressive step marks the beginning of a new chapter focused on inclusiveness, accessibility, and scholarly collaboration in knowledge dissemination. Our valued readership will now have unlimited access to numerous high-quality articles.

The traditional subscription model has been the backbone of academic publishing for decades, providing a sustainable mechanism for maintaining the highest standards of quality and rigour in journals. However, it also created barriers to access, leaving researchers, students, and practitioners—especially those from underfunded institutions or developing nations—on the periphery of cutting-edge research, limited by paywalls and subscription fees. This affects individuals and hampers global progress in knowledge generation and innovation. This move by the ISS journal echoes the broader trends toward open science worldwide, emphasising transparency, replicability, and public engagement in scientific research. Open access facilitates extensive collaboration and research innovation, increasing visibility and reach. Unrestricted downloading and citing open-access articles is one way that their content can be made accessible to more people.

Our decision to switch to an open-access format stems from our commitment to supporting the learning process. We view research as a common good that should not be confined within the walls of well-resourced institutions. Our goal is to eliminate financial barriers that hinder the equal distribution of information, enabling anyone to access, replicate, or modify the results we publish with proper attribution. This change reflects our belief in the capacity of all researchers to contribute meaningfully to knowledge production. However, this transition presents intrinsic challenges. Sustaining a journal with rigorous peer review standards under an open-access model requires careful planning and support. To

address this, we have adopted a socialised Article Processing Charge (APC) system to supplement submissions with an end-to-end scholarly publishing platform and other editorial software and services. The APC model ensures we can continue to provide high-quality editorial services now and in the future.

Recognising the financial constraints many scholars face, particularly those from underprivileged countries, we have implemented a substantial discount system. This scheme offers discounts based on membership in the *International Society for Comparative Physical Education and Sport* (ISCPES) and location in low-income regions. Additionally, we are actively seeking grants and other funding opportunities to sustain our open-access initiative.

As this transformative journey begins, we aim to engage with you all—readers, authors, and reviewers—actively. Your support, feedback, and engagement are invaluable to our mission of making scholarly knowledge a global public good. Together, we can overcome barriers to learning and foster an inclusive, vibrant, and innovative research environment, uniting the global academic community for a common purpose.

In conclusion, we extend our heartfelt thanks to the ISS editorial team, whose volunteer service has been crucial to this transition. We also appreciate our esteemed reviewers collaborating with us to help authors craft their manuscripts into publishable material. This teamwork is a testament to our shared effort to build knowledge and nurture an open and collaborative scholarly ecology. We are excited about the multiple advantages that open access brings, and your contribution is immense.

Welcome to the new era of *International Sports Studies*: open, accessible, and dedicated to the free flow of knowledge!

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ORIGINAL RESEARCH

An International Survey of Sports Coaches' Knowledge, Understanding, and Definitions of Physical Literacy

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Abstract

Physical literacy (PL) has become a popular term in international policy, advocacy, and practice discourses, and a part of this lies in its claimed role in bringing together traditionally distinct settings – physical education, physical activity, sports coaching (the focus of this paper) – into coherent research and practice agenda. However, questions remain about the coherence and commensurability of the definitions used within the PL field. This study explores the knowledge, understanding, and personal definitions of 521 sports coaches from 37 countries. Using Leximancer semantic software to analyse qualitative data from an international cohort of coaches, we sought to gather a relatively unbiased and trustworthy representation of their perceptions of PL. Relevance ranged from 100% for concepts 'movement,' 'physical,' and 'activity' to 8% and 6% for concepts 'coordination,' 'need,' 'control,' and 'efficiently,' respectively. The dominant accounts of PL in our sample prioritised movement skills and sport, in contrast to influential academic theories that stress multi-factorial constructs. These findings support arguments that definitions of PL are widely divergent and that the imposition of a unified conception of the term may be an unattainable and unnecessary ambition.

Introduction

Physical literacy (PL) has entered many countries' policy, advocacy, and practice discourses. UNESCO's "International Charter of Physical Education, Physical Activity and Sport" (2015a) and "Quality Physical Education (QPE) Guidelines for Policy-Makers" (2015b) both cite PL as a desirable outcome of physical education (PE). Endorsements have also been offered by SHAPE America (2013), the Australian Sports Commission (Keegan et al., 2017), and the International Council of Coaching Excellence (2013). It has "become a major focus of physical education, physical activity and sports promotion worldwide" (Giblin et

al., 2014: p. 1177), with a "breath-taking rapidity of the growth of interest" (Jurbala, 2015: p. 367). Part of PL's topicality lies in its positioning as a vehicle for bringing together traditionally distinct settings – PE, sports coaching, sport development, and health-enhancing physical activity – into a coherent agenda for research and practice (Bailey, 2020).

Despite its popularity, questions remain about the coherence of the definitions used within the PL field (Keegan et al., 2017). Some commentators have expressed concerns that this undermines the potential of PL to act as a metaphor to capture attention and inspire collaborative action for physical activity (Jurbala, 2015). Others have claimed that competing and potentially incommensurable accounts indicate an immature field vying for dominance (Bailey, 2020). Thus, it has become common to distinguish two popular stances: 1) one associated with the ideas of Margaret Whitehead and the International Physical Literacy Association (IPLA) (Whitehead, 2019) and 2) a less-defined cluster of positions linking PL with Fundamental Movement Skills (Balyi et al., 2013). Alternatives can also be added to these accounts, such as self-knowledge related to health (Cairney et al., 2019: p. 85), moral behaviour and meaningful connections (Allan et al., 2017), and sports skills (Higgs et al., 2008).

Research into stakeholder groups' perceptions is surprisingly rare, especially when contrasted with the increasingly voluminous literature on definitions and assessment (Bailey, 2020; Liu & Chen, 2021). Studies identified in this area are summarised in Table 1. Most studies sampled school teachers, though one recruited multiple stakeholder groups, including coaches, teachers, decision-makers, and academics (Belton et al., 2022).

The preponderance of studies has focused on education settings, specifically PE. This is unsurprising, as PE writers have primarily driven the PL agenda (Young et al., 2021). It is interesting to note, however, that most studies that sampled teachers reported low levels of engagement with the concept. Perhaps even more intriguing are the interpretations offered for respondents' poor comprehension. Many of these articles explicitly referred to published frameworks or theories informing normative judgements about respondents' understanding of PL[1]. So, rather than just providing descriptive accounts of respondents' perceptions of PL, these articles drift into making qualitative evaluations of statements by comparing them to pre-determined 'correct' responses. An explicit example of this comes from Robinson and colleagues (2018), who describe some participants' conflation of PL and PE as "hugely disturbing and potentially harmful" and "reductionist" (p. 292). Their justification for this claim appears to be based on the views of a single author (i.e., Margaret Whitehead) and drawing on no empirical data (e.g., Whitehead, 2013). The authors' overt bias becomes even more explicit when they write: "These leaders are largely unable to articulate conceptions of physical literacy that are in line with contemporary perspectives" (p. 289). Likewise, Essiet and colleagues (2022) coded as "partial understanding" (p. 7) responses that failed to express "its lifelong holistic nature and constituting domain/elements," "a clear and comprehensive knowledge of PL and its broader attributes" (p. 12), and other features of Whitehead's "theory." However, the authors definitions, conceptualisations, and operationalisations" (p. 2). Belton and

[1] Goss et al. (2021) investigated views of PL assessment, so their commentary largely falls outside discussions of the nature of PL, per se.

Table 1. Summary of previous PL stakeholder perception studies

Source & Location	Method & Sample	Headline findings
Robinson et al. (2018) Canada	Interviews: 12 teachers.	Leaders are largely unable to articulate conceptions of PL that are in line with contemporary perspectives.
Harvey & Pill (2020) Global	Synchronous online Twitter #Chat conversations: 79 PE teachers.	An 'everyday philosophy' of PL emerged. A lack of sophistication was evident in PE teachers' understanding and operationalisation of PL.
Stoddart & Humbert (2020) Canada	Interviews: six teachers.	Regardless of whether they were specialists or generalists, participants exhibited limited understanding of the overall concept of PL.
Nesdoly et al. (2021) Canada	Community-based participatory research: 11 Indigenous educators, coaches, and youth mentors.	5 themes were identified: (a) wisdom sharing (b) being mindful in teachings, (c) youth-centred approaches, (d) culture and spirituality as part of being active for life, and (e) relational support.
Goss et al. (2021) Global	Semi-structured focus groups: 39 6-7-year-olds, 57 children 10-11-year-olds, 23 teachers/teaching assistants, and 21 self-described experts.	All stakeholders viewed the assessment of PL as important, but not a priority in many schools, resulting in a variability in practice. There was no reported assessment of the affective and cognitive domains of PL.
Belton et al. (2022) Northern Ireland, UK	Questionnaire: 1,241 individuals from different stakeholder groups.	Respondents were aware of an existing definition of PL, but this varied by stakeholder group (greatest awareness among higher education; the lowest among coaches). All stakeholders rated the importance of the physical domain of PL higher than the affective or cognitive domains of PL.
Essiet et al. (2022) Australia	Online survey: 174 (mostly specialist) schoolteachers, with follow-up interviews with nine survey participants.	Participants were aware of PL, but often held a narrow understanding. There were no differences in PL understanding by teacher training, age group, or number of years of teaching experience.

colleagues (2022) primarily focus on describing and analysing the patterns of responses within their sample but drift into unjustified judgement when applauding

comments that promote "the importance of a proactive and salutogenic approach to promoting physical literacy and … a 'life-long' physical literacy journey" (p. 11). The same methodological slip can be found in Stoddart & Humbert's (2020) equation of "a lack of knowledge pertaining to physical literacy" (p. 12), in part with an understanding of "how physical literacy and physical education were linked" (p. 12). There is an evident tension here between practitioners and researchers, and it is highly problematic to recognise a concept as contested and then condemn respondents for failing to provide the 'right' one. This raises the spectres of researcher bias and an assumed conceptual ownership.

Only two of the studies in Table 1 manage potential researcher bias appropriately (e.g., Harvey & Pill, 2020; Nesdoly et al., 2021). They do this by following the stated objectives of the studies, namely by investigating respondents' views of PL in their specific contexts. This does not mean these studies avoid evaluative statements; for example, Harvey and Pill (2020) discuss a "lack of sophistication evident in the PE teachers' understanding and operationalisation of PL" (p. 11). They justify this claim by referring to the enthusiastic advocacy of specific, formalised positions rather than more nuanced positions adapted to the participants' distinctive work contexts and life histories. In other words, Harvey and Pill equate a lack of sophistication with an absence of reflective or critical engagement with the various formulations of PL. This seems a much more reasoned and balanced stance as its normativity is not restricted, as it stands, to extra-textual points of reference.

The present study explored sports coaches' knowledge, understanding, and personal definitions of PL. Sports coaches represent one of the main stakeholder groups associated with developments in PL (Belton et al., 2022), and this study is the first to focus only on the views of sports coaches. The avoidance of researcher bias, and specifically some of the biases inherent through content analysis, was instrumental in the preparation of the study's methodology. This led to the decision to utilise Leximancer semantic software (https://www.leximancer.com) to increase the data analysis's rigour, transparency, and trustworthiness (Lemon & Hayes, 2020). Moreover, the choice of Leximancer reflected Sotiriadou and colleagues' (2014) call for critical assessment and qualitative data analysis software selection in line with contextual, specific, and philosophical considerations. This approach was particularly necessary due to the contested nature of PL (Bailey, 2020) and the controversies related to the definition, scope, and assessment described elsewhere in the literature (Young et al., 2022). Although Leximancer has been widely adopted within some disciplines (e.g., business and management), its usage is in its infancy within PE and other sport-related areas. We know only one study that adopted this analysis tool within PL (Hyndman & Pill, 2018), which used the software to analyse the research literature.

Methodology

Research Questions

The research questions for this study were:

1. How do the participants define and explain PL?
2. In their judgments, how widely known is PL among their colleagues and organisations?
3. How confident are they in understanding PL?

Design

This was an observational study with data collected using an online self-report survey. The rationale for the use of self-report was as follows:

- Access to Internal States: Self-reporting is one of the few methods available to researchers to collect information on subjective experiences, perceptions, feelings, and intentions. This method offers insights into personal emotions and ideas otherwise unavailable to outside observers.
- Cost-Effectiveness: Our technique was low-cost, especially with the goal of facilitating the distribution and collection of survey data across broad geographic areas and populations.
- Easy Administration: Our survey could be administered to a large number of people simultaneously without the need for specialised tools or training, allowing for efficient data collection from a large sample size.
- Flexibility: Self-report tools can be designed and modified to examine a variety of subjects and adapted for different settings, making them versatile tools in research.

An institutional ethics committee approved the study. Informed consent was obtained from all participants before data collection commenced. The survey was anonymous, although participants were invited to indicate if they wished to be informed about the research outcomes by providing their email address; the email address was sometimes indicative of participants' identity but played no part in our analysis.

Participants

Participants were recruited using the following inclusion criteria: 1) adults aged 18 or over; 2) experience of coaching sport, though not time-bound in the number of years of experience; and 3) the ability to understand and communicate in English. Potential participants were not excluded on any specific criteria other than their ability to meet the inclusion criteria.

Sampling and Sample Size

A non-probability convenience sampling approach was adopted, following three strategies: 1) targeted invitations to social media groups for sports coaches; 2) open calls for participants via Twitter; and 3) cascade email requests through the authors' networks.

Procedure

Targeted invitations to social media groups for sports coaches occurred over a four-month period from November 2020 – to February 2021. Some of these groups were known to the authors (e.g., the 'Coaching Science' Facebook group), and others emerged by using the search function on the platform. Open calls for participants were made using Twitter, including a link to the participant information sheet, consent form, and questionnaire. Lastly, invitations to participate and requests for the invitation to be cascaded were made via personal email contact to individuals known to the authors. These individuals were identified and selected based on their role in the learning and development of sports coaches. They were a mixture of coaches and coach developers working in private capacities and for national federations.

As the questionnaire was hosted via an online platform (onlinesurveys.ac.uk), participants could choose a day and time convenient to them to complete it. The landing page presented the participant information sheet that could be visited and revisited whilst individuals contemplated their (non)participation in the study. Once participants had consented to their involvement in the study, they completed a one-time exploratory questionnaire.

The questionnaire was split into three sections. First, geographic (i.e., country where primarily based) and demographic

(i.e., age, primary sport coached, primary age group coached, employment status as a coach) information were collected. Next, participants were asked about the perceived importance of PL to their work, how widely the concept of PL is known amongst their colleagues and organisations, and how confident they were with their understanding of PL. Finally, participants were asked to define or describe PL as if they were describing it to the parent of a player they coached.

Data Analysis

Simple frequency counts and percentage calculations were performed using data collected from the first two sections of the questionnaire. Several Pearson correlation coefficients (r) were conducted to assess relationships between participants' age, sex, primary sport coached, country, and perceptions of the importance of PL to their work, knowledge of PL amongst colleagues and their organisation, and their confidence in understanding PL. The significance for all statistical analyses was fixed at the .01 level.

Leximancer text analysis software was used to automatically analyse the conceptual content of the qualitative data generated through the questionnaire. Leximancer uses word-association information to elicit emergent concepts from these data (Smith & Humphreys, 2006). This approach allows for generating a tailored taxonomy for the data set and creates conceptual and relational analyses of the text that are then presented graphically.

The concept map is a graphical representation of generated concepts clustered into themes represented as colour-coded bubbles to depict concepts that occur together in the text (Buhmann & Kingsbury, 2015). The closer the theme and concepts are together on the concept map, the closer they are conceptually in the analysed text. Colours indicate relevance, with warmer colours (e.g., red, orange, yellow) showing increased relevance to the analysed text when compared to less warm colours on the colour wheel (e.g., green, purple) (see Figure 1).
Leximancer is an almost entirely automated machine-learning tool. It was adopted to eliminate some of the biases inherent in content analysis, increase the rigour, transparency, and trustworthiness of the analysis (Lemon & Hayes, 2020), and strengthen the decision to withhold from taking an *a priori* stance toward PL.

Content Analysis

Leximancer performed automated content analysis, a standard and widespread qualitative research technique that "seeks to analyse data within a specific context in view of the meaning someone (…) attributes to them" (Krippendorf, 1989, p. 403). In addition to generating themes and concepts, this process also highlights relationships between those themes and concepts (Thomas, 2014).

After importing all open-ended responses, the percentage of name-like concepts was adjusted to 'null' and set the number of concept seeds to 'automatic' (concept seeds are words the programme identifies by their frequency in text, representing the starting point for the definition of concepts). Then, before the programme generated the thesaurus (a list of terms linked to seeds), the concept seeds were edited to merge the words that had the same or very similar meanings (e.g., ability and able; activity, activities and active; child and children; confident and confidence; jump and jumping; movement and movements; sport and sports). No additional user-defined concepts were added to the initial thesaurus.

Results

Expert Information

Six hundred nineteen eligible participants from 38 countries completed the questionnaire between November 2020 and February 2021. Following data cleaning, 521 responses were included in the analyses.

Participant characteristics can be seen in Tables 2 and 3. Participants were mostly male (81.8%), aged between 35 and 44 years old (36.5%); coaching groups aged 11-16 years old (37.4%); primarily coaching soccer (39.5%); working in the United Kingdom (35.5%); and engaged in a voluntary capacity (40.3%).

Table 2. Participant characteristics

Characteristic	*n*	%
Sex		
Male	427	81.8
Female	94	18.00
Prefer not to say	1	0.20
Age		
18-24 years	37	7.1
25-34	81	15.5
35-44	190	36.5
45-54	142	27.3
55-64	61	11.7
65-74	9	1.7
75+	1	0.2
Country		
Australia	21	4.0
Canada	30	5.8
Finland	5	1.0
Ireland	89	17.1
Spain	6	1.2
Switzerland	10	1.9
United Arab Emirates	6	1.2
United Kingdom	185	35.5
United States	38	7.3
Other*	50	9.6
Primary age group coached		
Under 5	6	1.2
6-10 years	136	26.1
11-16	195	37.4
17+ years	184	35.3
Employment Status as a Coach		
Full-time (40 hours per week)	147	28.2
Part-time (fewer than 40 hours per week)	141	27.1
Volunteer (unpaid)	210	40.3
Other	23	4.4

*Countries with fewer than 5 responses were included as 'other'

*The response marked "prefer not to say" for gender was not counted in the analysis

Most respondents (81.3%) identified that PL was very important or extremely important to their work. Respondents reported that PL was slightly or moderately known (68.1%) amongst their colleagues or organisations. Respondents' rating of their confidence and understanding of PL was predominantly in the range of 'moderate' to 'very confident' (68.7%).

Table 3. Primary sports coached by participants

Sports	*n*	%
Adventure sports (kayaking, canoeing, climbing)	4	0.8
American Football	2	0.4
Archery	1	0.2
Athletics	12	2.3
Australian rules football	2	0.4
Badminton	2	0.4
Baseball	1	0.2
Basketball	15	2.9
Beach volleyball	1	0.2
Boxing	2	0.4
Cricket	2	0.4
Curling	1	0.2
Dance	2	0.4
Figure skating	1	0.2
Floorball	3	0.6
Football (soccer)	206	39.5
Gaelic football	33	6.3
Golf	34	6.5
Gymnastics	5	1.0
Handball	3	0.6
Hockey	20	3.8
Hurling	5	1.0
Ice hockey	5	1.0
Lacrosse	2	0.4
Martial arts	24	4.6
Multi-sports	11	2.1
Netball	11	2.1
Olympic Weightlifting	3	0.6
Rowing	7	1.3
Rugby	56	10.7
Sailing	1	0.2
Skiing	1	0.2
Squash	4	0.8
Surfing	1	0.2
Swimming	11	2.1
Tennis	10	1.9
Triathlon	5	1.0
Volleyball	10	1.9
Yoga	2	0.4

Table 4 shows that almost half of the participants (48.9%) indicated that PL was extremely important in their work as coaches, though they reported that PL is only slightly known amongst their colleagues and organisations (34.5%).

Table 4. Participant responses to Physical Literacy-specific questions (n=521)

Responses	*n*	%
Importance of PL to participants' work		
Not at all important	12	2.3
Slightly important	17	3.3
Moderately important	68	13.1
Very important	169	32.4
Extremely Important	255	48.9
How widely known PL is amongst respondents' colleagues and organisation		
Not known at all	54	10.4
Slightly known	180	34.5
Moderately known	175	33.6
Very well known	84	16.1
Extremely well known	28	5.4
Respondents' confidence in understanding PL		
Not at all confident	17	3.3
Slightly confident	70	13.4
Moderately confident	198	38.0
Very confident	160	30.7
Extremely confident	76	14.6

Amongst the participants, several significant relationships were identified between socio-demographic characteristics and PL, as shown in Table 5. For instance, how widely PL is known amongst participants' colleagues and their organisation, $r(519) = .13$, $p < .01$; and participants' confidence in their understanding of PL, $r(519) = .28$, $p < .01$. There were also negatively correlated relationships between participants' employment as a coach and the importance of PL to their work, $r(519) = -.24$, $p < .01$; how widely PL is known amongst participants' colleagues and their organisation, $r(519) = -.29$, $p < .01$; and participants' confidence in their understanding of PL, $r(519) = .18$, $p < .01$.

Table 5. Relationships between socio-demographic information and physical literacy in practice

Socio-demographic	Importance of PL to your work	How widely known PL is amongst colleagues and organisation	Confidence in understanding PL
Age	.07	.06	.07
Sex	.04	.05	.06
Country	.41**	.13**	.28**
Primary sport coached	-.03	-.03	-.05
Employment status as a coach	-.24**	-.29**	-.18**

***p < 0.01*

Content Analysis Findings

Although the overall sample of the study was larger, content analysis was performed on the answers of 307 coaches who explicitly responded to the request: "Please define/describe Physical Literacy as if you were explaining it to a parent of a child you coach". Leximancer yielded 24 concepts and 11 themes. The relevance of the concepts for the overall analysed text is expressed through percentages, whereas the number of hits indicates the number of times this concept was found in the text. Relevance ranged from 100% for concepts ‘movement,' 'physical,' and ‘activity’ to 8% and 6% for concepts ‘coordination,’ ‘need,’ ‘control,’ and ‘efficiently,’ respectively. A complete list of concepts generated is available in Table 6.

Table 6. List of generated concepts

Concept	Count	Relevance (%)	Concept	Count	Relevance (%)
movement	252	100	body	34	13
physical	252	100	competence	31	12
activity	251	100	perform	31	12
ability	172	68	different	31	12
skills	130	52	understanding	30	12
sport	90	36	knowledge	26	10
child	82	33	balance	24	10
literacy	80	32	range	22	9
jumping	55	22	coordination	21	8
life	50	20	need	20	8
motivation	45	18	control	20	8
basic	39	15	efficiently	16	6

The themes were named after the most relevant concept within the theme. The most relevant theme was ‘physical’ (252 hits), encompassing concepts of ‘physical,’ ‘skills,’ and ‘sport,’ followed by ‘movement’ (252 hits) with concepts of ‘movement,’ ‘activity,’ and ‘ability.’ Next, themes ‘child’ (114 hits), ‘literacy’ (80 hits), ‘motivation’ (75 hits), ‘jumping’ (71 hits), ‘life’ (50 hits), ‘range’ (41 hits), ‘body’ (34 hits), ‘control’ (34 hits), ‘coordination’ (21 hits) were identified in the data. The illustration of all 11 themes and corresponding concepts, as well as their interactions, is presented in Figure 1. Furthermore, Table 7 includes illustrative examples of respondents’ replies.

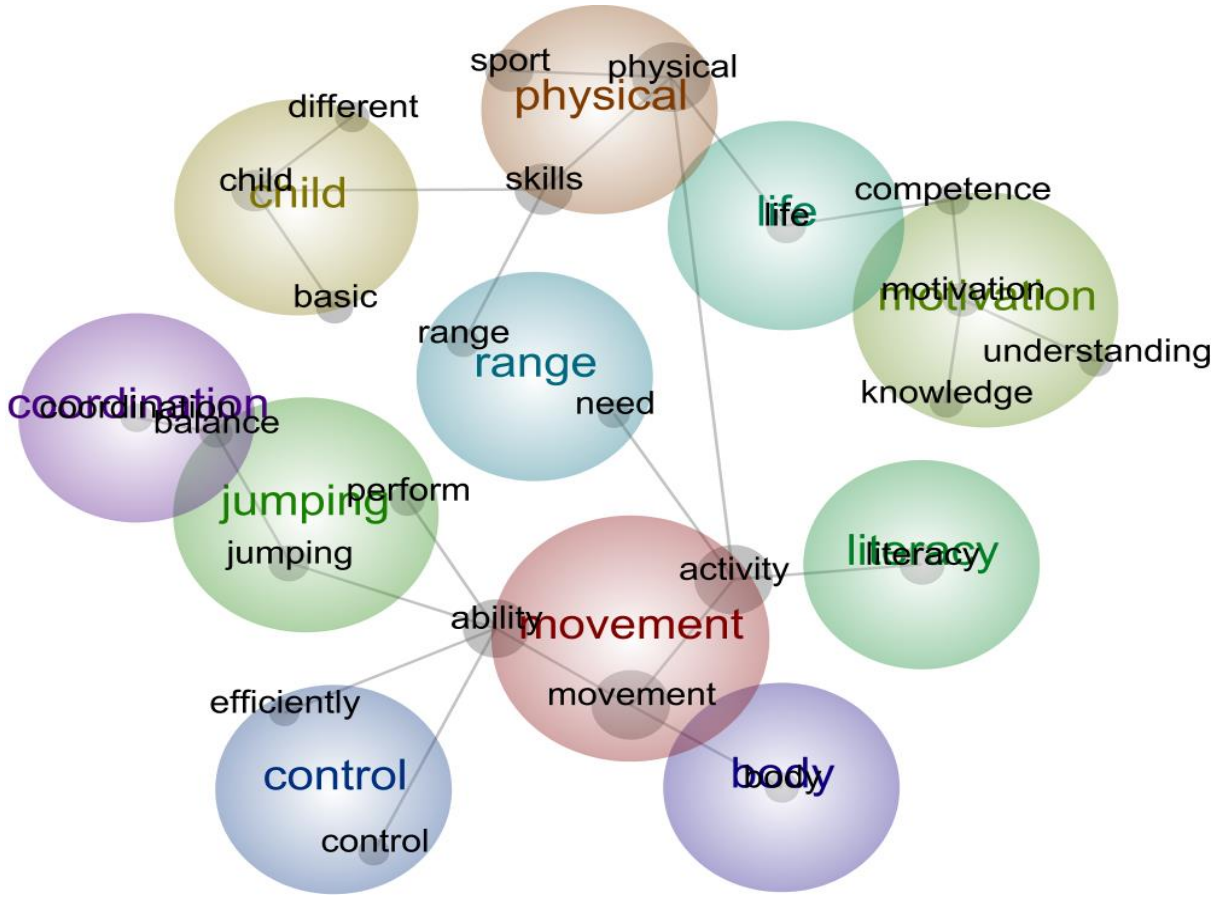

Figure 1. Concept map of coaches’ responses

Table 7. Generated themes and examples of responses

Theme	Hits	Associated concepts	Illustrative quotation(s)
physical	252	physical, skills, sport	"To ensure you are confident in physical activity and motivated to carry on any type of physical activity for the rest of your life."
movement	252	movement, activity, ability	"It is the building blocks of how we move…understanding and recognising the inherent capabilities and primary drive we all have to move with freedom."
child	114	child, basic, different	"It is not a GAA [Gaelic Athletic Association] thing, a soccer thing or a rugby thing. It is about developing the skills to allow children to participate in physical activity for life."
literacy	80	literacy	"Physical literacy is: Your child's confidence in his/her own capabilities and how to develop them. Their understanding (of) their own physical capabilities and boundaries."
motivation	75	motivation, competence, understanding, knowledge	"PL is to be able to move with competence, confidence and have the motivation to develop and value an active lifestyle today and for all the days that come."
jumping	71	jumping, perform, balance	"A child's physical movements that can be developed over time to aid skill adaptation: involving - running, jumping, hopping, turning, falling, climbing, balancing."
life	50	life	"To be able to fully develop your body's movements, have a feeling that you are in control and that your body does not limit you when you exercise or in your daily life has many positive effects on the quality of your life. Confidence, self-esteem and self-worth rise which increases your performance and joy in life."
range	41	range, need	"The ability to demonstrate a wide range of movements. Making easier to learn new movements."
body	34	body	"The basic fundamentals of the body physiology, the working of the muscle groups, recovery and nutrition."
control	34	control, efficiently	"To execute the movement you want / need to do at the right time, in the right direction, with the right kind of force. ...or... To be able to execute and control all the movements required to solve the puzzle in front of you."
coordination	21	coordination	"E.g. when: catching striking running jumping throwing bowling stopping diving sliding It includes elements of agility, balance and coordination. It also relates to strength, speed and general fitness."

Discussion

This study was devised to contribute to the literature on stakeholders' perceptions of PL, focusing on the views of sports coaches. The study is timely and warranted, considering the increasing policy profile of PL in relation to sport, PE, and physical activity. The existing literature reveals very little about how coaches perceive and operationalise PL. Therefore, an international survey was devised and conducted with a mixture of closed and open-ended questions to gather various data to explore the importance coaches attribute to PL.

The findings of Leximancer analysis reflect many of the themes of earlier studies

of perceptions of PL (e.g., Belton et al., 2022; Essiet et al., 2022) and theoretical accounts (e.g., Jurbala, 2015; Whitehead, 2019). Differences become more apparent when the strength of associations of importance and relevance are considered (which, after all, is an important element of the rationale for using Leximancer in the first place). Then, it becomes apparent that the participants in this study tend to adopt an account of PL that prioritises movement skills and sport. This stance is not just at odds with the 'official' position of the IPLA (IPLA, 2017); it has been explicitly rejected by several of its leaders (Almond, 2013; Whitehead, 2019). It might be argued that this difference is one of context, reflecting the practical demands of coaches in the real world rather than the scholarly realm of academics, as Higgs (2010) claimed. However, this overlooks fundamentally different conceptions of PL (Bailey, 2020).

Specifically, Leximancer found the most relevant theme to be 'physical,' followed by 'movement.' This is indicative that coaches understand PL to be primarily and most explicitly about physical characteristics (in this respect, the present study reiterates the findings of Hyndman & Pill, 2018). Although the theme 'physical' can be attributed to the subject of the inquiry and the word 'physical' in the PL syntagm, 'physical' encompasses the concepts 'skills' and 'sport,' which is far from the word 'literacy' as a suffix. The concept of 'sport' was also attributed to importance. The concept of 'skills' connected to the concept of 'child,' presumably reflecting the samples' primary point of interest as over 67% of the coaches in the sample worked with children. 'Skills' was also connected to the concept 'range,' possibly pointing to the importance of learners mastering a broad range of skills. This was further strengthened by the concept of 'different,' suggesting the importance of a variety of movements (rather than focusing on a limited range of skills). The concept of 'physical' was then linked to the concept of 'life,' implying a role for PL in supporting the quality of everyday life.

The theme 'movement' encompassed the concepts 'activity,' 'ability,' and 'movement,' again indicating the importance of the physical dimension in PL. This was further strengthened by the connection of 'movement' with 'body.' Coaches expressed, for example, that physiology, muscle groups, recovery, and nutrition were important for the concept. The concept of 'ability' was linked with the themes 'control' and 'jumping'. Particularly, it is linked with concepts of 'control' and 'efficiently'. This seems to be an expression of the relevance coaches gave to controlled and efficient movements and is in proximity to what can be called 'fundamental movement skills,' of which jumping was the most prominent. Closely related to jumping were coordination and balance as underlying abilities of fundamental movement skills.

The fifth theme ranked by relevance was motivation, encompassing the concepts 'of motivation,' 'competence,' 'understanding,' and 'knowledge.' They were grouped and pointed to the relevance of motivational and cognitive aspects of PL. This is particularly relevant to 'life', the proximal theme that emphasises the long-term benefits of PL for daily life.

Even though these coaches perceive PL as important to their work, they think PL is not well-known within their organisational environments. This may indicate a slow or non-existent translation of international policies that use the concept of PL (e.g., International Charter of Sport, Physical Education, and Physical Activity) to grassroots and other contexts. An alternative explanation might be that PL, regardless of its perceived importance, is a concept that still needs to be operationalised in a way that has a pragmatic relevance for sports clubs. Thus,

even though coaches are aware of the concept, PL might need to be more relevant within their clubs as a subject of meaningful conversation.

It is becoming increasingly apparent that imposing a unified conception of PL may be a hopeless ambition. PL is "a promiscuous concept" (Bailey, 2020, p. 13), applied in many settings with different aims, approaches, and audiences. It has been used as attractive new packaging for ideas that have been around for a long time, such as basic movement skills or PE, and as a label for alternative ways of understanding the body and movement in human development. Moreover, just as its acceptance has been casual, so has its usage, resulting in PL fracturing into different camps. The recent contribution by Young et al. (2022) is particularly valuable in this regard. Their analysis of the PL literature found that "we are not dealing with different perspectives of PL bending or being bent towards a unified concept, but rather a multiverse ... of physical literacies" (p. 14). The authors highlight three *physical literacies*: 1) PL as health-promoting physical activity, 2) PL as motor competence, and 3) PL as phenomenological embodiment. The third PL is asserted by the IPLA; the second relates closest to views expounded by the coaches in this study. Claims by Higgs (2010) and others (Edwards et al., 2018; Green et al., 2018), notwithstanding, such distinctions are significant as "(e)ach of these is framed by different problems, objectives, actors and obligations" (Young et al., 2022, p. 14).

Conclusion and Recommendations

This study has several limitations. Perhaps the most obvious relates to gathering data via an online survey, albeit forced by the context of a global pandemic. Although this is now a common practice in quantitative and qualitative research methodologies (Braun et al., 2021), there remains the likelihood that the sample was over-selected for individuals with an interest in PL. As such, coaches interested in or have been exposed to discussions of PL may have been more inclined to participate. Likewise, those familiar with social media and online activities may have been more inclined to participate in the study. Since this is – in effect – a scoping study, this is a valuable finding but does not invalidate the findings.

The research team succeeded in engaging respondents from 37 countries. However, most countries' response rates were relatively low (28 with fewer than five responses). Previous authors have pointed to the influence of geography (via national bodies) and advocated accounts of PL, so this uneven distribution of responses may have skewed results. The range of countries in the sample is encouraging. Still, it is important to acknowledge the bias toward Western, English-speaking countries, presumably because the social media posts were delivered in English. Whilst there is little we can do to address this issue now, we intend to extend the scope of research by including non-English language sources in future studies.

For similar reasons, the large numbers of football (soccer) coaches and, to a lesser extent, rugby, golf, and Gaelic football among the sample should be considered a limitation. Although it may be seen as a restriction, the substantial presence of football (soccer) coaches in the sample adds significantly to the study's value in a number of important ways. First of all, because football is a widely popular sport worldwide with various coaching styles and a broad influence, insights gained from its coaches are extremely pertinent and generally applicable. This large dataset offers a solid foundation for comprehending coaching dynamics that may exist in other sports but may not be as prominent. A range of coaching cultures and approaches are also introduced

with the addition of coaches from sports, including rugby, golf, and Gaelic football, albeit to a lesser degree. Due to this diversity, a comparative analysis is made possible, which aids in identifying features that are common to and unique from many sports disciplines. Instead of seeing the majority of football coaches as a limitation, it should be seen as a foundation upon which to build a more nuanced understanding of sports coaching in general. This approach not only leverages the depth of data from football coaching but also enriches it with insights from other sports, offering a comprehensive view of the coaching landscape.

Another potential risk of online research is that it is impossible to rule out the likelihood that some respondents carry out research to help them answer specific questions. The design of the central question in the survey, namely, to define or describe PL as if describing it to a parent of a player who was coached, was chosen to reduce the likelihood that 'correct' or explicit definitions in the literature would simply be reproduced and (hopefully) increase the tendency towards personal or implicit theories of PL (Woolfolk-Hoy & Murphy, 2001). Nevertheless, it is impossible to exclude the possibility that respondents did their research before answering the questionnaire. Of course, this is not a limitation restricted to online surveys, as any non-supervised data-gathering tool suffers from the same concern.

Several studies have been published that examine professionals' views of the nature of PL. However, this is the first to focus on the perspectives of sports coaches and also the first to utilise a text analysis methodology to explore these perspectives. As discussed earlier in this article, there has been a disappointing tendency in some previous studies (of teachers) to impose normative standards onto respondents' views. The selection of the Leximancer program for data analysis was specifically motivated by a desire to examine stated views in an unbiased and non-judgemental way. Subsequent research into practitioners' perceptions of PL should, we suggest, steer clear of arbitrating the quality or accuracy of respondents' views through the lens of the researchers' theoretical assumptions. Such practices undermine the authority of the analysis and conclusions drawn. Leximancer is a valuable tool in this regard.

Words matter, but not as much as the things and activities they seek to represent. What practitioners think about PL affects their practices and, consequently, the opportunities they do or do not provide learners. So, it is essential to discover what people in the field believe about PL and how they view its importance in specific settings. This is the first self-report study of the views of sports coaches about PL, and it draws on the insights of practitioners from around the world. Overall, these coaches seem to have adopted what could be called the 'PL-as-fundamental-movement-skills' stance, indicating a close-knit between the aims, scope, and content of PL and the development of basic motor skills (Bailey, 2020; Young, 2022). This seems to be a widely held equation among practitioners (Essiet et al., 2022; Harvey & Pill, 2020), and perhaps it deserves more serious consideration than it tends to receive from academic theorists (e.g., Robinson et al., 2018; Belton et al., 2020).

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Disclosure statement

The authors report no potential competing interests. The data are not publicly available because they contain information that could compromise the privacy of research participants. They did not consent to sharing their data with anyone outside the research team.

Data availability

The data supporting this study's findings are available from the UNIVERSITY REPOSITORY (https://uclandata.uclan.ac.uk/) upon reasonable request.

Ethics approval

This study was approved by an institutional research ethics committee (Ref: HEALTH/0125).

Consent to participate

All respondents provided informed consent before participating in the survey.

Consent for publication

All respondents consented to using data (anonymous) for research purposes and publications.

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ORIGINAL RESEARCH

Investigating Factors Associated with Physical Education Classes in Mexico During COVID-19

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Abstract

This study analysed the physical education (PE) sessions during the COVID-19 forced confinement from the perspective of teacher participation. Participants in the study included 674 PE teachers from different cities in Mexico, of which 446 (66.2%) are women and 228 (33.8%) are men. With an average age of 40.39 ± 10.3, they taught at the preschool (14.8%), elementary (77%) and high school (8.2%) educational levels. An ad hoc questionnaire called "The Physical Education Session during Confinement by COVID-19" was designed for this study. This instrument was reviewed and corrected by experts in PE teaching and research. The first section of the questionnaire consisted of sociodemographic information, and the second section comprised 22 items encompassing five factors: hygiene recommendations, planning, space and material distances, collaboration and teamwork, and use of technology. PE classes during COVID-19 were conducted 60 to 80 per cent online, and the most frequent means of communication was WhatsApp (65.4%). The questionnaire showed adequate psychometric properties (RMSEA= .05; GFI= .88, CFI= .99, NFI= .97; Chi-square/gl= 3.66). The factors showed no significant differences by gender (p > .05); teachers who were university graduates scored higher on all factors (p < .01) than those from normal schools. Finally, all factors were positively and significantly correlated (p < .01). The study concludes that teaching PE during the COVID-19 contingency involved modifications of the teaching intervention. Understanding how to tailor-fit these interventions to respond to student needs appropriately is of utmost importance in maintaining physical and mental health during a global health crisis.

Keywords:
well-being, mental health, accessible education, primary education, secondary education

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Introduction

The impact of the COVID-19 crisis on educational institutions, educators, students, and their families has been profound. One of the earliest and most significant impacts felt globally was the swift action taken by school authorities to mitigate the disruption to the academic calendar and ensure the continuity of learning. In March 2020, UNESCO convened an online assembly of education

ministers to share insights into the various strategies adopted by their respective nations to support teachers, parents, and students in navigating the challenges of remote learning (Huang et al., 2020). As a result, the Government of Mexico disseminated comprehensive preventive measures to the public, suspending in-person classes and commencing distance learning initiatives (Secretaría de Educación Pública, 2020).

Authors such as Chang and Yano (2020) have proposed various alternatives to mitigate the educational interruptions caused by the pandemic, aiming to ensure the universal continuity of the teaching-learning process. Their primary recommendation involved expanding existing forms of distance education and disseminating educational content through digital and traditional media channels, including television. In response to these exigencies, educators, particularly those in PE, were compelled to adapt rapidly. They recalibrated and refined their pedagogical strategies, initially designed for in-person instruction, to innovate for virtual student engagement, concurrently undergoing preparation and acquiring proficiency in the use of technology (Lloyd, 2020).

Oranburg (2020) posits that achieving optimal practices in online education necessitates both time and resources. Designing and implementing a successful online course requires hundreds of hours, a luxury that is unavailable amidst the urgency of the global crisis. The states of emergency declared worldwide demanded swift responses. Nevertheless, amidst this crisis, the primary objective remains to create an optimal student experience. The conception, planning, design, and development of an online course or program can consume up to a year of faculty training and collaboration with instructional designers.

Moreover, it often necessitates guidance and support from students and a sophisticated technological infrastructure. Throughout the COVID-19 pandemic, educators encountered various challenges, particularly in the pedagogical domain of PE. Teachers were required to navigate a non-traditional context, delivering instruction outside the conventional classroom setting. This necessitated the implementation of a virtual framework with diverse avenues for guiding students in developing their motor skills (Juanes Giraud & Rodríguez Hernández, 2021). This shift complicated the provision of feedback, correction, movement tracking, and assessment of students' progress and evolution (Hall-López & Ochoa Martínez, 2020). The role of PE teachers in elementary school students is to facilitate the development of physical literacy, which can be achieved when students encounter a range of appropriate opportunities at each stage and age.

Blended Learning is a pedagogical approach combining online and face-to-face instruction to harness both strengths for more efficient learning. This approach has emerged as a transformative modality in distance education, enriched by new technological resources and innovative methodological proposals. It has overcome challenges and progressed toward new possibilities that ensure the quality of semi-presential education (García-Ruiz et al., 2017). Furthermore, information and communication technologies (ICTs) are regarded as instruments that facilitate parental involvement in their children's education, given their pervasive integration into contemporary societies. Moreover, research indicates a positive stance among families towards using ICTs to facilitate children's learning. Teachers significantly influence how parents utilise ICTs to support their children's education. Teachers' beliefs regarding the role of families in children's education also influence parents' use of ICTs (Urías et al., 2017).

PE plays a pivotal role in the comprehensive development of students. As such, ensuring its delivery safely and responsibly is essential, prioritising the well-being of teachers and students. Adherence to health recommendations is thus paramount to facilitating the development of fundamental competencies among students and providing them with the skills and opportunities necessary to promote health and well-being, which is particularly vital in these uncertain and challenging times (CONSEJO COLEF, 2020). Virtual PE should aim to enhance physical abilities and cultivate critical thinking and adaptive strategies for navigating the post-COVID-19 era, which is characterised by its unique challenges (Carrasco Coca et al., 2021). It is well-established that engaging in moderate to vigorous physical activity significantly contributes to maintaining cognitive functions and is directly associated, in most cases, with improved mental health outcomes (Cruz-Sánchez et al., 2011). Furthermore, engagement in physical activity enables students to fulfil their psychological needs and perceive their well-being more positively (Mahecha Matsudo, 2019).

Another concerning aspect is the prevalence of poor nutrition and sedentary behaviours, which contribute to Mexico's staggering obesity rate of 72.5%, placing it among the top five countries globally affected by this issue (Flores Olivares et al., 2021). Implementing lockdown measures during the pandemic prompted a shift in lifestyle behaviours, increasing sedentary activities (Hall-López et al., 2020). This is a significant public health concern, as sedentary behaviour is the fourth leading cause of mortality worldwide and is responsible for 27% of global diabetes prevalence, 30% of ischemic heart disease, and over 20% of breast and colon cancers (Bull et al., 2020). The World Health Organization, the American Heart Association, and the American Diabetes Association frequently emphasise the importance of maintaining an active lifestyle (American Heart Association, 2024). However, the temporary closure of sports and recreational facilities during lockdowns has hindered physical activity opportunities. Physical activities mitigate physical health problems and alleviate psychological issues (Warburton & Bredin, 2017).

Establishing a programme for virtual PE classes during quarantine and sustaining these activities post-quarantine as normalcy resumes is imperative (Tascón, 2020). Beyond the COVID-specific circumstances, preparing students adequately for a future that must and can be improved is paramount (Hall-López & Ochoa Martínez, 2020). This study is particularly relevant in promoting adaptations to circumstances surrounding COVID-19. Physical education instructors are cognizant of the impact of conducting their classes online on maintaining students' physical activity levels and overall health, particularly in fortifying the immune system and mitigating sedentary behaviour and obesity. Thus, this study aims to scrutinise the factors associated with PE during COVID-19 confinement.

Methodology

The present study is a non-experimental cross-sectional study conducted within the same timeframe (Ato et al., 2013). Comparative and correlation analyses were performed using criteria from the PE questionnaire constructed and administered during the COVID-19 confinement.

The study's target population was in-service PE teachers in basic education. A sample of 674 PE teachers was drawn, of which 446 (66.2%) are women and 228 (33.8%) are men, with an average age of 40.39 ± 10.3. An ad hoc questionnaire called "Factors associated with the Physical

Education class during confinement by COVID-19 from the teacher's perspective" was designed for this study. PE teaching and research experts reviewed and corrected this instrument. It consisted of a first section with eight questions on sociodemographic data: age, gender, educational level and system, academic training, federal entity, media, and percentages of application of the PE program during confinement. The second section had 22 items encompassing five factors: hygiene recommendations, planning, distances, spaces and materials, collaboration and teamwork, and use of technology, employing a Likert-type response scale ranging from 1 (totally disagree) to 7 (totally agree).

The questionnaire was digitally captured through the Google Forms® platform. It incorporated a section informing the participant about the research objectives, stating the confidentiality of the data, and requesting their consent to participate. Subsequently, the survey was distributed exclusively to PE teachers through e-mails and social networks. As inclusion criteria, only PE teachers who were in service at the time of the study and who answered the survey in their entirety were considered in the study. Due to the questionnaire's characteristics and questions, the participants' integrity and morals were always respected. Ethical aspects of qualitative research are considered, with a social and scientific value where a study that leads to the production of knowledge that provides opportunities for improvement or solution of problems in the field of Physical Education is proposed (Cámara de Diputados del H. Congreso de la Unión, 2014). The Research Coordination of the School of Sports Organization of the Universidad Autónoma de Nuevo León (REPRIN-FOD-74) approved and registered the project. Once the data were captured, they were analysed using the SPSS v25 statistical program. First, the data were cleaned and analysed for quality. Second, descriptive statistics of frequencies and percentages of the sociodemographic data were obtained. After that, the items included in the instrument were analysed using mean, standard deviation, skewness, and kurtosis. Then, the exploratory factor analysis (EFA) was performed with half of the sample, obtaining the Kaiser-Meyer-Olkin coefficient (KMO), Bartlett's test of sphericity, and conducting the principal component analysis extraction method, and the Varimax rotation method. In addition, the confirmatory factor analysis (CFA) was performed using the model's goodness-of-fit indexes (Jöreskog & Sörbom, 2006). Reliability was determined for each factor, and the results were calculated using Cronbach's alpha index. Comparisons were also carried out using the student's t-test according to gender and academic training, and finally, the correlations between factors using Pearson's coefficient were computed.

Results

The results of the teacher's perspective in the PE class during COVID-19 confinement are described below. First, the frequencies and percentages of the sociodemographic variables are described. Subsequently, the instrument's EFA and CFA were carried out with half of the sample since it is a new questionnaire. Finally, the factors are compared by gender and type of academic training (regular school and university), and a correlation analysis is presented.

Sociodemographic Data

The socio-demographic data are shown in Table 1, with higher participation of PE teachers in the age groups of 31-40 years (31.5%) and 41-50 years (30.6%). Higher participation of women (66.2%) with teaching at the primary education level (77%) belonging to the federal education system (79.8%) with university education (51.9%),

and the primary communication system between teacher and student was WhatsApp (65.4%)

Table 1. Frequencies and percentages for the age groups of PE teachers

Sociodemographic variables		Frequencies	Percentages
Age	< 20 years old	5	7
	21-30 years old	132	19.6
	31-40 years old	212	31.5
	41-50 years old	206	30.6
	> 51 years old	119	17.7
Gender	Female	446	66.2
	Male	228	33.8
Educational level	Preschool	100	14.8
	Primary	519	77
	High School	55	8.2
Educational system	Federal	538	79.8
	State	96	14.2
	Private	40	5.9
Academic background	Normal School	324	48.1
	University	350	51.9
Social Media	E-mail	33	4.9
	Facebook	88	13.1
	WhatsApp	441	65.4
	Virtual Platform	94	13.9
	Phone Call	18	2.7

Descriptive Statistics of the Items

A normality test (skewness and kurtosis), as well as the mean and standard deviation of the items, was performed. The items did not comply with normality by having values outside the range of -1 and 1, as seen in Table 2.

Table 2. Descriptive statistics of the items

Items	Mean	SD	Skewness	Error of Skewness	Kurtosis	Error of Kurtosis
1	6.10	1.28	-1.667	.133	2.833	.266
2	5.35	1.42	-.668	.133	-.003	.265
3	5.77	1.44	-1.209	.133	.814	.265
4	6.22	1.07	-1.484	.133	1.893	.265
5	6.21	1.23	-1.757	.133	2.626	.265
6	5.91	1.44	-1645	.133	2.570	.265
7	5.73	1.68	-1.328	.134	.861	.266
8	6.13	1.33	-1.995	.133	4.159	.265
9	6.25	1.28	-2.189	.134	4.927	.267
10	6.10	1.45	-2.014	.133	3.830	.266
11	5.95	1.44	-1.539	.133	1.931	.266
12	5.83	1.50	-1.405	.133	1.376	.266
13	5.82	1.37	-1.095	.133	.420	.266
14	5.59	1.69	-1.126	.133	.381	.266
15	4.82	1.63	-.689	.134	-.116	.266
16	6.56	.97	-3.130	.133	12.075	.266
17	6.46	1.13	-2.781	.133	8.526	.266
18	6.49	1.03	-2.989	.133	10.908	.266
19	6.54	.98	-2.797	.133	9.203	.266
20	6.44	1.17	-2.613	.133	7.104	.266
21	6.29	1.34	-2.239	.133	4.933	.266
22	6.42	1.21	-2.458	.134	5.943	.266

Note: SD= Standard Deviation

Exploratory Factor Analysis

The EFA of the instrument was performed with half of the sample (n=337) is shown below. The sample adequacy index KMO (Kiser Meyer Olkin) was satisfactory (KMO = .916). Bartlett's test of sphericity presented values of chi-square (X2) = 4357.929, g/l = 231, and p = .000, which are highly significant, thus assuming that the variables present high correlations.

Table 3 shows the factorial structure of the tool to evaluate the perception of the PE teacher regarding online classes, where the distribution of the items in each resulting factor is observed. The weights load on five factors: F1 Hygiene recommendations (from items 1 to 7), F2 Planning (from items 8 to 12), F3 Distances, spaces, and materials (from items 13 to 16), F4 Collaboration and teamwork (from item 17 to 19), F5 Technology (from item 20 to 22).

Confirmatory Factor Analysis

Confirmatory Factor Analysis allows us to observe the theoretical model's relevance or goodness of fit, representing the relationship between the studied variables. According to Jöreskog and Sörbom (2006), to check the fit between the theoretical model and the data matrix, adequate fit indices are obtained: (RMSEA= .05; GFI= .88, CFI= .99, NFI= .97; Chi-square/gl= 3.66).

Table 3. Factor structure matrix

Items	Hygiene recommendations	Planning	Distances, spaces and materials	Teamwork	Technology	Communalities
1	.869					.842
2	.854					.833
3	.849					.811
4	.835					.797
5	.833					.782
6	.816					.766
7	.790					.751
8		.732				.577
9		.651				.528
10		.631				.532
11		.615				.485
12		.600				.551
13			.748			.676
14			.702			.667
15			.677			.627
16			.631			.532
17				.787		.710
18				.781		.764
19				.716		.638
20					.859	.811
21					.830	.762
22					.594	.647

Comparisons of the Factors

When performing the Kolmogorov-Smirnov normality test, significant differences were reported in the factor averages ($p < .01$), which shows that they do not have a normal distribution. Table 4 shows that no significant differences were found between the factors by gender ($p > .05$), which means that women and men perceive each factor very similarly.

Table 4. Comparison of factors by gender

Factors	Gender	N	Media	DE	Mann-Whitney U Test	Z	P value
1. Hygiene recommendations	Female	445	6.48	1.04	49171.500	-.317	.751
	Male	224	5.51	.88			
2. Plannning	Female	446	5.92	.98	49569.000	-.257	.797
	Male	225	6.99	.79			
3. Distances, spaces and materials	Female	446	5.96	1.18	49477.500	-.204	.839
	Male	224	6.01	1.05			
4. Teamwork	Female	445	6.04	1.17	48751.000	-.377	.706
	Male	223	5.97	1.20			
5. Technology	Female	445	5.37	1.32	49481.000	-.153	.879
	Male	224	5.36	1.29			

When comparing the factors by academic training, significant differences ($p < .01$) were observed in all factors, with those who were university graduates scoring higher (Table 5).

Table 5. Comparison of factors by academic training

Factors	Training	N	Media	DE	Mann-Whitney U Test	Z	P value
1. Hygiene recommendations	Normal school	324	6.44	.98	49411.500	-2.902	.004
	University	345	6.54	.99			
2. Planning	Normal school	324	5.85	.94	49126.000	-2.836	.005
	University	347	6.03	.90			
3. Distances, spaces and materials	Normal school	323	5.86	1.16	48525.500	-3.045	.002
	University	347	6.09	1.11			
4. Teamwork	Normal school	324	5.89	1.21	48157.500	-3.107	.002
	University	344	6.13	1.14			
5. Technology	Normal school	324	5.24	1.29	48261.500	-3.067	.002
	University	345	5.48	1.33			

Table 6 shows the mean, standard deviation, correlation, and Cronbach's Alpha for each factor in the diagonal line. All factors correlate positively and significantly ($p < .01$).

Table 6. Mean, standard deviation, correlation, and reliability of factors

Factors	1. RH	2. Planning	3. DEM	4. TE	5. Technology
1. RH	.93				
2. Planning	.475**	.77			
3. DEM	.559**	.527**	.82		
4. TE	.450**	.489**	.394**	.78	
5. Technology	.413**	.466**	.390**	.411**	.96

Note: RH = Hygiene Recommendations; DEM= Distances, Spaces and Materials; TE= Teamwork; ** $p < .0$

Discussion

This research investigated the factors associated with teacher participation in PE sessions during COVID-19. To this end, a questionnaire with 22 items encompassing the five factors of Hygiene Recommendations, Planning, Distances, Spaces and Materials, Teamwork, and Technology was designed and administered. Each factor is deemed indispensable for implementing the online class; however, the study sought to analyse the perceptions of PE teachers on the implications of these factors on the teaching and learning of PE amidst the pandemic.

The profile of the PE teacher in Mexico showed an age range of 31 to 50 years old, predominantly women, teaching their classes at the primary education level, belonging to the federal education system, with a university education. The findings reveal that WhatsApp was the primary means of communication between teachers and students. Training PE teachers has been an essential component of the educational policy in Mexico, which orients its plans and programs toward affirming core educational principles and, particularly, the integral development of students in basic education (Secretaría de Educación Pública, 2002). There are teacher training schools (specific to teaching) and universities, with the latter offering diverse programs for graduates in PE, physical activity, and sports sciences. This variety in educational backgrounds among the research participants may explain why they registered higher scores in the factors studied.

The integral development of students is fundamental for PE, which is why various hygiene recommendations are provided to allow them to participate in PE activities effectively and safely, reducing the risk of contagion (Blocken et al., 2020). In the present study, the essential recommendations provided by PE teachers were wearing a face mask most of the time unless the activity was of higher intensity and was conducted in outdoor spaces, washing hands frequently, respecting a healthy distance, and using antibacterial gel, among others. For this, it was necessary to establish a work team that coordinated the activities of healthy school action, assessed the needs of students and conducted programs to promote healthy habits that favour the integrity of students (CONSEJO COLEF, 2020).

Although this study was conducted during the COVID-19 lockdown, many hygiene recommendations are still relevant to face-to-face classes post-pandemic. Adherence to these preventive measures is essential for instilling healthy lifestyle habits in students, fostering their development within PE classes, and enabling them to maintain these habits daily.

Although many teachers did not feel prepared to incorporate technology into their classrooms shortly after the pandemic was declared (Molinero Bárcenas & Chávez Morales, 2019), it became necessary to incorporate ICT at home and in the classroom to provide students with quality learning. For the online PE class, different means of communication were used. The present study revealed that WhatsApp (65.4%) was used the most, although Facebook and other virtual platforms were also used less frequently. Baena-Morales et al. (2022) found that 67.8% of learning interactions with Spanish students occurred through virtual platforms like Moodle and Google Classroom. Social networks such as TikTok, Twitter, Instagram, Facebook, WhatsApp, and YouTube were also used to transmit activities and assignments. These platforms have become a fundamental part of young people's and adolescents' lives (Piedra, 2020). Social interactions frequently revolve around these social networks, driven by technological progress transforming how people socialise. For young people, being present and actively engaged in social networks is crucial for acquiring social capital. Many strive to keep up with the latest trends, publish engaging content, gain followers, and become influencers (Enríquez Reyna et al., 2021).

Within this context, PE teachers have an excellent opportunity to provide quality care while enhancing their professional image in society by being responsive to learner needs in a constantly changing world. Their experience during COVID-19 has prepared them for challenges should a resurgence of COVID-19 happen, compelling another social confinement and

restriction to face-to-face education. Hall-López & Ochoa Martínez (2020) emphasise that the use of virtual education, Apps and social networks has become a handy tool in the science of physical activity, the teaching of PE at the basic level, and increasing levels of physical activity during and beyond the pandemic.

Several studies affirm ICT as an essential resource for PE classes (Browne, 2015; López de la Varga et al., 2023); however, most PE teachers admitted to not being used to technology applications in class (Kretschmann, 2015). This becomes a challenge for teachers and parents, who constantly struggle to update themselves, working hard to better use and manage technology. The confinement may have restricted the content taught in PE, either because the virtual mode makes certain activities impossible or because teachers prioritised the content most effective for improving students' psychological and physical health (Baena-Morales et al., 2021).

The General Council of Physical and Sports Education (CONSEJO COLEF, 2020) developed a series of recommendations for online teaching. This means that PE teachers must incorporate the measures described by the council for face-to-face classes with the telematic teaching recommendations they deem appropriate, depending on their students, resources, and computer resources available.

While the study was conducted during the pandemic and may seem limited in relevance to the post-COVID-19 educational system, it highlights the crucial factors that have permanently influenced PE teaching and learning, such as student physical and mental health, innovation and maintenance of sport facilities and equipment, enhancement of collaboration and teamwork across multiple platforms, and, notably, incorporation of ICTs into the PE curriculum. Future research endeavours should explore these factors in greater depth and examine their adaptation to the evolving educational norms, particularly in developing nations.

Conclusion

The closure of schools due to the COVID-19 pandemic compelled the adaptation of remote learning models, with information and communication technologies (ICT) assuming a pivotal and indispensable role across all educational and professional fields, including healthcare. This situation necessitated the need to devise an instrument to assess the implications of the crisis on PE from the lens of teachers in Mexico. This study successfully validated the questionnaire "Factors Associated with Physical Education Classes during the COVID-19 Lockdown from the Teacher's Perspective," demonstrating its validity and reliability through robust psychometric properties.

The continued provision of PE during the pandemic required a rapid adaptation of pedagogical practices, underscoring its critical role in supporting physical and mental well-being during prolonged confinement. Physical education instructors were at the front line of promoting physical activity for the youth within safe home environments, ideally involving family participation. Instilling healthy habits during formative years is a cornerstone for enhancing overall health and establishing sustainable healthy lifestyles into adulthood. In this context, this article examines various factors associated with PE classes, exploring methods of promoting health, addressing the challenges posed by the COVID-19 pandemic, and combating obesity, a serious public health threat in Mexico.

The study revealed that WhatsApp was the primary mode of communication for online PE classes among students, parents, and teachers, with less frequent use of virtual platforms and Facebook. The interactivity

afforded by these platforms, coupled with their extensive accessibility to information resources regardless of temporal or geographical constraints, facilitated the acquisition of relevant knowledge and skills among students in Mexico amidst the global health crisis.

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Disclosure statement

The author declares no conflicts of interest related to this research.

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ORIGINAL RESEARCH

Comparative Investigation of Differential Mood Responses among Elite, Non-Elite, and Non-Athletes in Total Lockdown

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Abstract

The onset of the COVID-19 global health crisis, marked by stringent restrictions on training routines and sudden cancellations of competitive events, precipitated abrupt and radical transformations within the sporting landscape. The emergency alert prompted governments worldwide to enforce various lockdown measures to curb the escalation of the viral outbreak. Recognising the potential psychological repercussions of these circumstances, a rapid assessment of mood states as well-being indicators was conducted during the initial months of the lockdown in the Philippines. A cross-sectional study using Tilly's (1984) variation-finding approach was undertaken to distinguish mood profiles between athletes of different competitive tiers and between athletes and non-athletes. Employing the 16-item version of the Profile of Mood States (POMS-16), mood responses were collected and compared across 705 elite athletes, 1,702 non-elite athletes, and 1,246 non-athletes. Analysis of mean patterns revealed that elite athletes consistently reported greater levels of dejection/anxiety, fatigue, irritability, vigour, and overall mood disturbance than did their non-elite and non-athlete counterparts. The findings affirm the substantial disparities in mood states between athletes of different competitive tiers and between athletes and non-athletes during the pandemic. Nonetheless, despite the elevated scores for negative mood responses, vigour emerged as consistently the highest among all mood responses across all three groups. The results are discussed considering the unique characteristics of elite and non-elite athletes and the protective role of vigour in mental well-being during adversity. By acknowledging athletes' distinct psychological reactions to circumstances hindering competitive sport engagement, this study contributes to understanding how disruptive health crises could affect athletes' well-being, potentially informing the development of targeted support programmes for athletes confronting similar challenges.

Keywords:
global health, mental health, moods, pandemic, psychological well-being

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Introduction

The emergence of the COVID-19 pandemic caused a worldwide health emergency with extensive ramifications, including threats to the psychological health and wellness of high-performance athletes. The intergovernmental lockdown measures to prevent the virus from spreading resulted in sweeping changes in the realm of sport, with

athletes forbidden to train, travel, or compete over a prolonged time. During these periods of halted sports activities, athletes have reported emotional distress and psychological challenges resulting from diminished exercise and training, separation from their sports teams, detachment from the broader sport network, suboptimal coach-athlete relationship, and decreased fanbase interaction and media coverage (Carnevale Pellino et al., 2022; Leguizamo et al., 2021; Örencik et al., 2024; Shukla et al., 2023).

The extant literature has elucidated the psychological repercussions exacted by the COVID-19 pandemic on the general populace, revealing increased levels of stress, anxiety and depressive symptomatology (Brooks et al., 2020; Cenat et al., 2022; Clemente-Suárez et al., 2020; Holmes et al., 2020; Nikolaidis et al., 2021; Pfefferbaum & North, 2020; Rajkumar, 2020; Sun et al., 2023; Torales et al., 2020; Violant-Holz, 2020; Xiong et al., 2020). While these studies assert the widespread psychosocial repercussions of the pandemic, there is still a lacuna in the current understanding regarding how these predicaments affect athletes, a demographic characterised by unique stressors and expectations (Arnold & Fletcher, 2012; Cutler & Dwyer, 2020; Foskett & Longstaff, 2018; Gouttebarge et al., 2015; Kegelaers et al., 2022; Reardon et al., 2019; Schaal et al., 2011; Schinke et al., 2017; Stambulova et al., 2024; Stambulova & Wylleman, 2019).

A systematic review of how the pandemic impacted athletes' mental and emotional well-being (Jia et al., 2023) confirmed that their mental health took a significant hit during the global health crisis. They found that athletes faced heightened levels of depression, anxiety, and stress, just like everyone else. However, athletes had to deal with unique career challenges due to the sudden and extended disruptions in their training schedules and competitions. Such disruptions in sport activities diminished motivation and satisfaction with their daily training regimens, particularly under severely constrained conditions, limited facilities, and restricted in-person interactions with coaches and teammates. Additionally, their findings emphasised the importance of considering competitive levels as a risk factor for athletes. Although there were variations in how the studies in the systematic review categorised athletes based on their competitive tiers (with some categorising athletes into low-level and high-level groups and others including a third category for mid-level athletes), their review highlighted that, compared to those who belong to lower or higher tiers, mid-level athletes were more susceptible to experiencing mental health challenges during the pandemic.

In explaining this situation, Jia et al. (2023) affirmed the claims of Fiorilli et al. (2021), suggesting that mid-level athletes face unique mental health challenges given their limited years of competitive experience, fewer opportunities to transition careers compared to low-level athletes, and lack of financial security or the option to retire enjoyed by high-level athletes. As such, the review team advocated for a nuanced examination of the level of competitive play in relation to mental health during the pandemic, emphasising a comparison based on relative rather than absolute terms. For a more consistent comparison, they recommended contrasting the psychological experiences of elite versus non-elite athletes rather than comparing elite athletes with non-athletes. In this vein, the current study investigated the psychological well-being of elite athletes, non-elite athletes, and non-athletes during the COVID-19 lockdown by comparing the mood responses of athletes from different competitive levels and of athletes with those of non-athletes.

This study adopted the classification system for the eliteness of athletic samples in

research generated by the systematic review of Swann and colleagues (2015). Although their classification further differentiates sport expertise into 'semi-elite,' 'competitive elite,' 'successful elite,' and 'world-class elite,' the current study uses the term 'non-elite' for the 'semi-elite' category and 'elite' to refer to any of the other three elite categories. Elite athletes are distinguished by their engagement in competing nationally or internationally at the highest levels of their sport. They have typically achieved significant success, such as winning major championships, setting records, or representing their country in high-level international competitions. Elite athletes often dedicate their lives to training and competing, investing substantial time and effort to achieve and maintain excellence in their sport. The current study categorises national athletes representing the Philippines in international competitions in this elite competitive tier. On the other hand, non-elite athletes compete at a higher level than recreational or amateur athletes. They may demonstrate exceptional skill in the sport, possess dedication to regular training, and aspire to reach elite status through continued development and success in their sport. However, their competitive performance is usually university-based, involving inter-collegiate, regional, or national competitions. In the present research, student-athletes competing at the largest inter-collegiate sport leagues in the Philippines are categorised in this non-elite competitive tier.

Elite athletes facing higher performance expectations and rigorous scrutiny (Mehrsafar et al., 2021; Reardon et al., 2020; Rice et al., 2016) may experience the psychological impacts of the pandemic distinctively compared to their non-elite and non-athlete counterparts. However, non-elite collegiate athletes have their unique challenges because they juggle academic and sport commitments, a balancing act that may lead to a different stress profile (Cutler & Dwyer, 2020; Stambulova et al., 2024; Stambulova & Wylleman, 2019). Although mental health is increasingly recognised as a crucial determinant of both athletic performance and overall well-being (Dithurbide et al., 2022; Foskett & Longstaff, 2018; Schaal et al., 2011; Schinke et al., 2017), investigations focusing on the comparison of mental health and well-being between these competitive tiers of athletes during the pandemic remain scarce (Taheri et al., 2023).

The necessity for such targeted research becomes even more apparent when considering how athletes' mental health affects their performance, coping ability, resilience, and overall quality of life, particularly under adverse conditions (Hussain et al., 2023; Pitacho et al., 2023). However, despite the scholarly attention given to the psychological impact of the COVID-19 pandemic on athletes, the nuanced differences in psychological experiences between sport participants of varying competitive levels—particularly elite and non-elite athletes—remain insufficiently explored (Uroh & Adewunmi, 2021). The existing body of literature has predominantly focused on the aggregate psychological effects of the pandemic on athletes as a monolithic group, with limited consideration of the stratification within this population (Clemente-Suárez et al., 2020).

Addressing this oversight is essential, given the divergent stressors, expectations, and support systems accessible to elite versus non-elite athletes. Such distinctions are likely to engender varying psychological outcomes, a hypothesis that warrants further investigation. Moreover, the absence of comparative studies on the differential psychological responses to the pandemic involving elite and non-elite athletes from non-Western societies represents a conspicuous gap in the sports psychology

literature. Research in psychology and its sub-disciplines continues to be dominated by samples generated almost exclusively from Western, Educated, Industrial, Rich, and Democratic (WEIRD) societies, assuming them to be representative of the human population and upholding their experiences and views as the standard of human psychology and behaviour (Henrich et al., 2010b; Judd et al., 2012; Lamarche et al., 2023). This study supports the promotion of investigations involving participants and cultural contexts beyond WEIRD populations and settings that are disproportionately underrepresented in mainstream psychological research.

This study notably features the psychological well-being of elite athletes in the Philippines, contextualised in a lower middle-income country that reportedly implemented one of the most stringent and extended COVID-19 restrictions worldwide (Mathieu et al., 2020; See, 2021). A task force led by the armed forces and police was formed to implement the Enhanced Community Quarantine (ECQ) throughout the island of Luzon, including Metro Manila, from March 17 until May 15, 2020. These measures remained in regions with a moderate to high risk of infection until May 31, 2020. Curfews and regular checkpoints were established throughout the island of Luzon, including Metro Manila. A pass system was enforced to restrict movement to essential workers and individuals providing essential goods and services such as groceries, medicine, or healthcare. In effect, there was a total lockdown. The punitive approach proved to be unparalleled as international agencies expressed alarm over the militarised strategy to curtail the spread of COVID-19, with presidential orders to arrest, detain, or shoot to kill those who disobey the regulations (Amnesty International, 2020; International Development Law Organization, 2020).

In compliance with the government directives forbidding mass gatherings (ABS-CBN, 2020), the Philippine Sports Commission (PSC) announced the immediate cancellation of all sporting events for the remainder of the year. Participation in international competitions was likewise suspended indefinitely. Athletes were immediately advised to return to their hometowns and provinces as dormitories and facilities for national athletes were shut down. Driven by a deep concern for the mental health and well-being of the athletes amid these alarming circumstances, the first author, a sport psychologist, initiated this research project with the endorsement of the PSC leadership and the executive boards of the largest collegiate sport leagues in the country. The research project entailed conducting a large-scale survey followed by interviews with several athletes on their well-being during this period. This paper exclusively focuses on analysing the mood responses derived from the survey phase of the project. Additionally, findings from a parallel study on the mood responses of Filipino adults during the pandemic are included for comparative purposes. Through a methodical comparative analysis of the mood states of these distinct athlete cohorts, vis à vis non-athletes, this investigation hypothesises significant differences in mood responses between elite and non-elite athletes, as well as between athletes and non-athletes, during the Philippine lockdown approach to the COVID-19 pandemic.

‘Mood’ is conceptualised as a pervasive set of sentiments or a general disposition, shaping emotional responses and influencing nearly all aspects of a person's behaviour in the external world (American Psychological Association, 2018; Sekhon & Gupta, 2024). It is commonly viewed as lasting longer and being less intense than emotions, often without a clear, identifiable object or trigger (Beedie et al., 2005). For instance, anxiety

may arise when considering a pending deadline or an upcoming event. However, an anxious mood state is more enduring, with someone feeling constantly tense, worried, or on edge, even without any immediate threat. Mood states and mental health are intricately linked, as mood changes can be indicative of various mental health conditions and vice versa (American Psychiatric Association, 2013; Gross et al., 2017; Patel et al., 2015). As such, mood state assessment as a recognised marker of psychological well-being is utilised across populations (Terry et al., 2021).

Mental health is a complex construct influenced by interrelated biological, psychological, social, and environmental factors, rendering it challenging to study using just a few measures. However, examining mood states provides a valuable starting point for exploring mental well-being. Mood states, as observable indicators of an individual's emotional state at a specific time, offer an opening to understanding well-being by providing insights into how individuals react to different situations. Thus, moods are typically checked for early detection of psychological concerns such as anxiety, stress, or depression, enabling timely and targeted intervention and support (Drake et al., 2013; Furukawa, 2010; van Genugten et al., 2021). In the field of sport, mood states are extensively studied as psychological correlates of athletic output and achievement (Beedie et al., 2008; Lockbaum et al., 2021), preliminary indication of overtraining (Grant et al., 2012; Nederhof et al., 2008), a predictor of injury (Appaneal et al., 2009; Galambos et al., 2005; Kleinert, 2007; Van Wijk & Fourie, 2017), and a gauge of psychological well-being (Parsons-Smith et al., 2022; Terry & Parsons-Smith, 2021). This research focused on evaluating athletes' mood states across competitive categories to understand their overall emotional outlook. This assessment was conducted in the context of a total government lockdown, when their training routines and competition schedules were abruptly halted due to the global health crisis, with no certainty of when they might resume their sport careers.

Methodology

Study Design

A cross-sectional study using Tilly's (1984) variation-finding approach was conducted to test the hypothesis that there are statistically discernible differences in mood states between Filipino elite athletes, non-elite athletes, and non-athletes during the pandemic. This strategy focused on pinpointing distinctions to understand the changes in the manifestation or degree of an observation. Online data collection was conducted to allow broad participation despite pandemic restrictions on in-person interaction. By merging this method with a large-N approach to enhance the generalisability of the findings, the study endeavoured to identify trends in mood states among athletes from different competitive tiers compared to non-athletes.

Instrument

Mood was assessed using a shortened Profile of Mood Scale (POMS) (McNair et al., 1971). The original version of the POMS has an inventory of 65 items, capturing diverse mood states clustered into six subscales of tension-anxiety, depression-dejection, anger-hostility, fatigue-inertia, confusion-bewilderment, and vigour-activity. The respondents rated each item based on their recent experiences, with choices ranging from "not at all," "a little," "moderately," "quite a lot," to "extremely." The POMS is recognised for its comprehensive evaluation of well-being across various demographics, including the general populace (Morfeld et al., 2007; Yeun & Shin-Park, 2006), those with chronic ailments (Cella et al., 1987;

Dilorenzo et al., 1999; Guadagnolim & Mor, 1989), psychiatric patients (Lavey et al., 2005; Norcross et al., 1984), and specialised cohorts such as athletes and exercisers (Berger & Motl, 2000; LeUnes & Burger, 2000; Lochbaum et al., 2021; Terry & Lane, 2000). It has also been reported to have acceptable internal consistency in collegiate (McGurgan et al., 2020; Shichiri et al., 2016; Yamanaka et al., 2021) and athletic samples (Selmi et al., 2023; Saïdi, 2020).

Several shorter iterations of the POMS were validated over time. The 16-item concise version developed by Petrowski et al. (2020), which was rigorously tested with a large national and representative sample from Germany, is utilised in this study. Analysis of these 16 items yielded subscores for "depression/anxiety ($\bar{X}$ = 3.1)," "vigour ($\bar{X}$ = 12.89)," "fatigue ($\bar{X}$ = 5)," and "irritability ($\bar{X}$ = 6.38)." In rapid assessments of mood states where an instrument's brevity is desirable, using the POMS-16 is highly recommended.

In the same year the POMS-16 was published, Brand et al. (2020) engaged the International Research Group (IRG) on COVID-19 and Exercise in a large-scale investigation involving 13,696 respondents from 18 countries, including the Philippines. The first author of the current study, a member of the IRG, participated in the Filipino translation of the POMS-16 and recruited the respondents from the Philippines. The POMS-16 generated "good" internal consistency, with Cronbach $\alpha = 0.89$ across all translations. The POMS-16 scores from 1246 Filipino respondents yielded the following mean scores: depression/anxiety ($\bar{X}$ = 9.48), vigour ($\bar{X}$ = 12), fatigue ($\bar{X}$ = 8.76), and irritability ($\bar{X}$ = 8.63). At almost the same time, the first author initiated this study involving 2,407 Filipino athletes who were asked to describe how they felt "since the COVID-19 restrictions were imposed" by responding to the POMS-16. The scale showed "good" internal consistency (α = 0.880; ω= = 0.889), confirming that it is a reliable tool for measuring mood states in a sample of Filipino athletes.

Procedure

The data were collected from April to May 2020, amidst the extreme lockdown measures adopted by the Philippine government in response to the World Health Organisation declaration of the COVID-19 pandemic on March 11, 2020. After the first author secured the endorsement of the Philippine Sports Commission (PSC), University Athletics Association of the Philippines (UAAP), and National Collegiate Athletic Association (NCAA) executive boards for the conduct of the study, national and varsity coaches, managers, and directors were contacted to facilitate the dissemination of research instruments to their respective athletes. Potential participants were invited to join the study by sharing the link to a Google Form containing the questionnaire.

The athlete-participants could respond to the English or Filipino version of the POMS-16. A professional translator proficient in both languages ensured the accuracy of the translation. Furthermore, another translator reverted the questionnaire to its original language. This back-translated scale version underwent scrutiny against the original scale to identify discrepancies or misinterpretations. Thoughtful consideration of distinct cultural nuances and emotional expressions was instrumental in enhancing the relevance and relatability of the scale for the target sample. After this step, the translated questionnaire was piloted with a select group of participants who were fluent in both languages. Their feedback on the clarity, comprehensibility, and relevance of items in the Filipino iteration of the POMS-16 vis-à-vis its English prototype was solicited. This iterative process aimed to guarantee that the final version faithfully

captured the essence and intent of the original questionnaire.

The POMS-16 data from the Philippine sample in the study of Brand et al. (2020) were incorporated into the variation-finding research strategy to broaden the comparison of the mood states between the elite and non-elite athletes and those of the general adult population during the COVID-19 pandemic. Brand and colleagues provided access to the country datasets to the individual national representatives at the IRG, many of whom generated further research on their respective datasets. Thus, the first author of the present study included the POMS-16 results of the Filipino respondents, providing the comparative mood profiles for non-athletes.

Ethical Considerations

The investigation adhered to ethical research standards following the "Data Privacy Act of the Philippines" (Republic Act 10173 of 2012). In keeping with this governmental mandate, personal data were treated akin to personal property, warranting explicit consent from the owner prior to any entity's collection, processing, or storage unless specified by law. Furthermore, due to the conduct of the study during the COVID-19 pandemic, adherence to the implementing regulations of the "Bayanihan to Heal as One Act of the Philippines" (Republic Act 11469) was ensured, following prescribed public health protocols aimed at mitigating the spread and severity of the pandemic crisis. Face-to-face data gathering was restricted without special authorisation during this period; only clinical trials on COVID-19 were permitted for onsite and in-person research activities. Consequently, most related research has been conducted remotely, utilising online platforms such as email correspondence, mobile calls, and internet-based video communications.

Although endorsed by sport governing bodies in the Philippines, this study did not undergo formal institutional ethics due to the priority given to pandemic-related clinical trials during this period. Nonetheless, the study complied with national regulations on ethical research practices and adhered to the ethical principles of the Declaration of Helsinki. All participants were thoroughly informed about the study's purposes, procedures, potential risks, and benefits. They provided informed consent and were aware of their right to withdraw from the study at any time without consequences. Athletes under 18 were required to provide assent apart from informed consent from a parent or legal guardian. Additionally, all collected data were anonymised to protect participant privacy and confidentiality, with access restricted to the research team. Similarly, ethical review and approval were not required for the international research study involving Filipino respondents (Brand et al., 2020), as participants provided written informed consent to participate in the study following local legislation and institutional requirements.

Participants

Table 1 features the demographic profile of the athlete participants. The sample comprised 2,407 athletes, with a gender distribution of 1,051 females (43.7%) and 1,356 males (56.3%). Regarding the competitive level, 705 national players (29.3%) were classified as elite athletes, while 1,702 collegiate student-athletes (70.7%) were categorised as non-elite. The majority engaged in non-parasport activities (96.7%, n=2,328), with a smaller segment participating in parasport events (3.3%, n=79) before the pandemic.

Table 1. Demographic characteristics of athletes (n = 2,407)

Category	Frequency	Percentage
Sex		
Females	1051	43.7%
Males	1356	56.3%
Competitive Category		
Collegiate	1702	70.7%
Elite	705	29.3%
Type of Sport		
Parasport	79	3.3%
Non-Parasport	2328	96.7%
Age Group		
Below 18	152	6.3%
18-20	1325	55%
21-23	422	17.5%
24-26	158	6.6%
27-29	92	3.8%
30-33	87	3.6%
34-37	52	2.2%
38-41	30	1.2%
Above 41 years old	89	3.7%
Frequency of Training per Week		
1	16	0.7%
2	37	1.5%
3	180	7.4%
4	126	5.2%
5	645	26.8%
6	812	33.7%
7	591	24.6%

The age distribution within the athlete sample varied, with a marked concentration in the younger age groups. Individuals under 18 years of age accounted for 6.3% (n=152) of the participants. The largest age bracket consisted of athletes aged 18-20, representing 55% (n=1,325) of the sample, followed by the 21-23 age group at 17.5% (n=422). A total of 6.6% (n=158) of the participants were aged 24-26 years, and 3.8% (n=92) were aged 27-29 years. The remaining participants were distributed across older age groups, with 3.6% (n=87) in the 30-33 years range, 2.2% (n=52) in the 34-37 years range, 1.2% (n=30) in the 38-41 years range, and 3.7% (n=89) aged above 41 years.

Table 2 shows the demographic profile of the non-athlete participants. The sample (n=1246) consisted primarily of females (56.3%), followed by males (40.7%). Transgender, non-binary, and other gender identities accounted for a small percentage (3.1%) of the non-athlete cohort. The mean age of this group was 32.3 years old, while the median age was 28 years old.

Table 2. Demographic characteristics of non-athletes (n = 1,246)

Category	Frequency	Percentage
Gender		
Females	702	56.3
Males	507	40.7
Prefer not to say	16	1.3
Non-binary	12	1.0
Other	7	0.6
Transgender	2	0.2
Category	Mean	Median
Age	32.3	28.0

Data analysis

The data from Google Forms were exported to JAMOVI for analysis. The socio-demographic characteristics and sport played by the athlete-participants before the lockdown were examined using frequency and percentage data. Cronbach's alpha and McDonald's omega were used to assess the scale's reliability.

Raw POMS scores were converted to standardised T-scores to facilitate meaningful comparisons between the three cohorts in our sample and account for individual variability within each group. The mean T-scores were then calculated to present the results in a line graph visually.

The researchers used the Kruskal-Wallis test to investigate whether there was a statistically discernible difference in the mood states between elite, non-elite, and non-athletes. This approach is suitable given that the scores in all dimensions of POMS follow a non-normal distribution, as confirmed by the Shapiro-Wilk test (p= <.001). The Kruskal-Wallis test is typically used in behavioural sciences research to analyse non-normally distributed data. (McIntosh et al., 2010). This approach is coherent with studies (Baez, 2021; Santiago & Kang, 2022) employing nonparametric statistics to compare groups with non-normally distributed data.

Results

Table 3 presents the top 10 sporting events played by the 2,407 athlete participants prior to the pandemic. The most common sport was volleyball, with 259 participants (10.8%). This sport is closely followed by athletics, with 248 players (10.3%). Cheerleading and football also garnered substantial participation from 184 (7.6%) and 169 (7.0%) individuals, respectively. Among the other sports, baseball yielded 113 participants (4.7%), while basketball and taekwondo each garnered the participation of 116 (4.8%) and 118 (4.9%) players, respectively.

Table 3. Top 10 sports of athlete participants by frequency and percentage

Sport Played	Counts	% of Total	Cumulative %
Volleyball	256	10.7	10.7
Athletics	248	10.3	21.0
Cheerleading	184	7.6	28.6
Football	169	7.1	35.7
Taekwondo	118	4.9	40.6
Basketball	116	4.8	45.4
Baseball	113	4.7	50.1
Fencing	92	4.0	54.2
Table Tennis	92	3.8	58.0
Chess	87	3.6	61.6

Although not shown in Table 3, the survey findings revealed several sports with lower participation rates among the athlete participants. Wheelchair racing, trampoline, wheelchair badminton, and windsurfing had only two participants, collectively contributing a marginal 0.1% to the sample size. Boccia, dancesport, and powerlifting were among the sport events with minimal representation, with 6, 6, and 10 participants contributing less than 0.5%, respectively. Among the other sports, cycling involved 62 (2.6%), swimming 86 (3.6%), badminton 81 (3.4%), and fencing 96 (4.0%) participants. Unique sports such as *Sepak Takraw*, *Wushu Sanda*, and underwater hockey were also represented by 9 (0.4%), 9 (0.4%), and 22 (0.9%) participants, respectively. Finally, less frequently played sports, such as billiards and shooting, had only 1 participant each, yet they contributed to the diverse spectrum of sports in the dataset.

Table 4 displays the descriptive statistics pertaining to different mood states among elite, non-elite, and non-athletes, as assessed by the POMS-16. In terms of dejection/anxiety, elite athletes exhibited a greater mean score of 8.72 than non-elite athletes, whose mean score was 5.63, but a lower mean score than non-athletes, whose mean score was 9.48. This observation suggested the heightened manifestation of dejection and anxiety symptoms among elite athletes and non-athletes. Furthermore, the lower standard deviation among elite athletes (σ = 0.792) implied greater response consistency than among non-elite and non-athletes, whose standard deviations were 0.999 and 0925, respectively.

A similar pattern is evident for fatigue. Elite athletes demonstrated a mean score of 8.36, indicative of heightened fatigue, as opposed to non-elite athletes, who presented a mean score of 4.56 for this mood but a lower mean score than non-athletes, whose mean score was 8.76. Similarly, the standard deviation was marginally lower for the elite cohort (σ = 0.779), suggesting less variability in their experience of fatigue. In contrast, the trend diverges in the case of vigour. Elite athletes exhibit greater vigour, with a mean score of 13.16, than non-elite and non-athletes, with mean scores of 9.28 and 12.00, respectively. However, the variability in vigour, denoted by the standard deviation, was somewhat greater among elite athletes (σ = 0.977) than among non-elite athletes (σ = 0.955) and non-athlete individuals (σ =

0.768). In other words, while elite athletes, on average, exhibit higher levels of vigour, there is more diversity in their vigour scores, with some reporting very high levels of vigour and others reporting lower levels. On the other hand, non-elite athletes and non-athletes tend to have more consistent levels of vigour, with less variation among their scores.

With reference to irritability, elite athletes exhibited higher average scores of 8.36, suggesting a greater prevalence of irritability, in contrast to non-elite athletes, whose mean score was 5.88, but lower than that of the non-athlete group, who presented a mean score of 8.63. A lower standard deviation among elite athletes ($\sigma = 0.796$) implies greater response consistency. Finally, elite athletes and non-athletes demonstrated a higher mean score of 8.48 for total mood disturbance, indicating a greater degree of overall mood disruption than non-elite athletes, with an average score of 6.00. The narrow standard deviation observed among the elite and non-athletic groups ($\sigma = 0.711$) suggests less variability in their total mood disturbance compared to the non-elite group ($\sigma = 0.899$).

Table 4. Comparison of POMS-16 scores between sub-groups during the COVID-19 pandemic

Mood States	Competitive Category	Mean	Median	SD
Dejection/Anxiety	Elite	8.72	8.00	0.792
	Non-Elite	5.63	6.00	0.999
	Non-Athlete	9.48	9.00	0.925
Fatigue	Elite	8.36	8.00	0.779
	Non-Elite	4.56	5.00	0.960
	Non-Athlete	8.76	8.00	0.984
Vigour	Elite	13.16	13.00	0.977
	Non-Elite	9.28	9.00	0.955
	Non-Athlete	12.00	12.00	0.768
Irritability	Elite	8.36	8.00	0.796
	Non-Elite	5.88	5.00	1.004
	Non-Athlete	8.63	8.00	0.923
Total Mood Disturbance	Elite	8.48	8.00	0.711
	Non-Elite	6.00	5.32	0.899
	Non-Athlete	8.48	8.00	0.711

Figure 1 displays distinct mood profiles expressed as the mean T-scores among elite, non-elite, and non-athletes, as assessed by the POMS-16. Elite athletes consistently scored higher across all POMS dimensions than non-elite and non-athletes. This finding suggests that elite athletes experienced greater mood disturbance than the other two groups during the COVID-19 pandemic. However, their vigour scores emerged highest among their

mood responses. In contrast, non-elite athletes and non-athletes had the lowest vigour scores compared to their scores for dejection/anxiety, fatigue, and irritability. Thus, although elite athletes showed significant mood disturbance, their vigour scores remained notably high. Interestingly, non-athletes exhibited elevated levels of dejection/anxiety and fatigue similar to elite athletes but had lower vigour scores. Additionally, non-athletes displayed mood patterns akin to those of non-elite athletes, albeit with different T-scores.

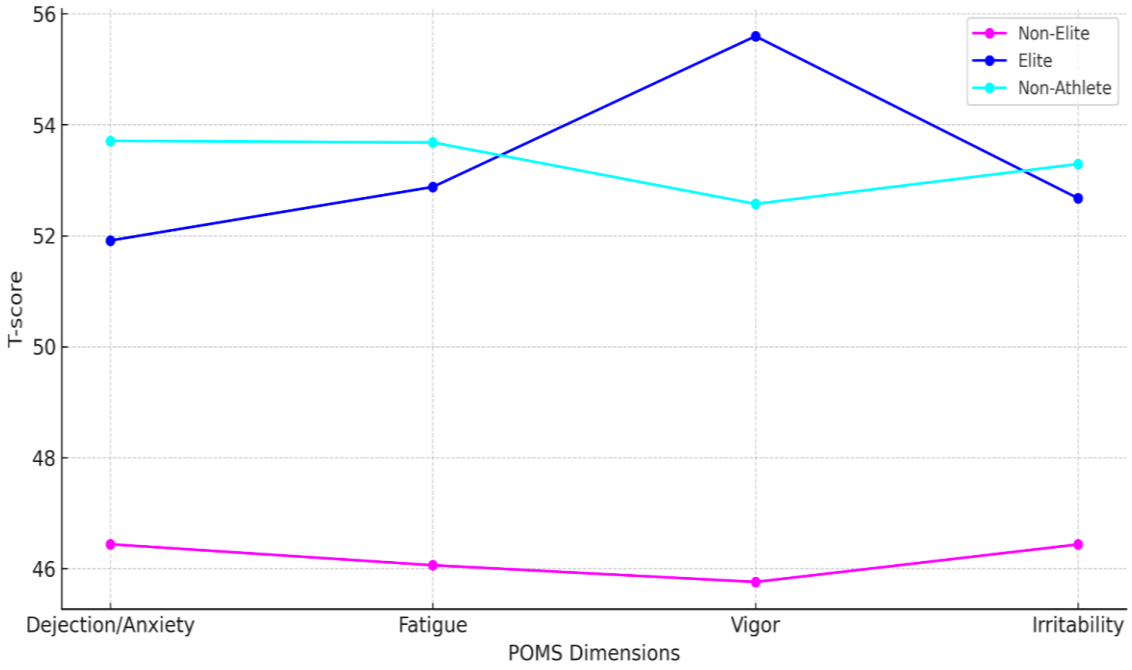

Figure 1. Line graph comparing POMS-16 T-scores by sub-groups

In summary, the elite athletes and non-athletes surveyed in this study reported elevated levels of dejection/anxiety, fatigue, irritability, vigour, and overall mood disturbance compared to non-elite athletes. Moreover, except for vigour, there tends to be less variability with the cohort of elite athletes in these mood states than with non-elite college student-athletes. These findings suggest that elite athletes experienced more pronounced mood states during the first few months of the COVID-19 pandemic.

Table 5 presents the outcomes of the Kruskal-Wallis test statistic alongside corresponding p-values and effect sizes for each mood state, demonstrating noteworthy disparities between the three cohorts. Remarkably, across all categories — irritability, vigour, fatigue, dejection/anxiety, and total mood disturbance—the p-values fall below 0.001. This outcome strongly indicates that the variances in mood states observed between elite, non-elite, and non-athletes hold considerable statistical significance, thus diminishing the possibility of these differences arising by random chance.

Examining the effect size for each mood state, measured by the epsilon square, offers insight into the magnitude of these distinctions. The effect sizes range from moderate to relatively strong, underscoring substantial cohort differences. Specifically, the effect size for vigour was 0.172, which

was the most pronounced among all mood states and indicated a robust presence of this mood state in elite athletes. Fatigue had an effect size of 0.151; irritability an effect size of 0.123; dejection/anxiety an effect size of 0.125; and total mood disturbance an effect size of 0.156. These effect sizes underscore the statistically significant disparities in mood states between the three cohorts, highlighting the considerable magnitude of these differences.

Table 5. Kruskal Wallis Test comparing the POMS-16 between elite and non-elite athletes during the COVID-19 pandemic

POMS Dimensions	χ^2	*p*	ε^2
Dejection/Anxiety	454	<.001	0.125
Fatigue	549	<.001	0.150
Vigour	625	<.001	0.171
Irritability	445	<.001	0.122
Total Mood Disturbance	572	<.001	0.156

To further understand the significant differences in the POMS scores of the three participant groups, as highlighted by the Kruskal Wallis test, the Dwass-Steel-Critchlow-Fligner pairwise comparison test was conducted. The results shown in Table 6 reveal significant disparities across various mood dimensions. The non-elite collegiate athletes reported lower POMS scores than did either of the two groups. Specifically, compared to both elite athletes and non-athletes, collegiate athletes exhibited notably lower levels of dejection/anxiety (W = -19.56, p < .001; W = -28.12, p < .001), fatigue (W = -24.82, p < .001; W = -29.398, p < .001;), irritability (W = -21.76, p < .001; W = -26.85, p < .001;), total mood disturbance (W = -23.88, p < .001; W = -30.75, p < .001;), and lower vigour (W = -28.62, p < .001; W = -28.91, p < .001;) On the other hand, elite athletes displayed significantly lower levels of dejection/anxiety (W = 5.61, p < .001), and higher levels of vigour (W= -8.94, p <.001) than non-athletes, but comparable fatigue (W = 0.824, p = 0.30), irritability (W = 1.27, p = 0.641), and total mood disturbance (W = 3.10, p = 0.072).

Table 6. Dwass-Steel-Critchlow-Fligner Pairwise Comparison of the POMS-16 between sub-groups during the COVID-19 pandemic

POMS Dimensions	Dejection/ Anxiety		Fatigue		Vigour		Irritability		Total Mood Disturbance	
	W	*p*	W	*p*	W	*p*	W	*p*	W	*p*
Elite & Non-Elite	-19.56	<.001	-24.82	<.001	-28.62	<.001	-21.76	<.001	-23.88	<.001
Elite & Non-Athlete	5.64	<.001	9.09	0.87	-9.09	<.001	1.11	0.72	3.10	0.072
Non-Athlete & Non-Elite	-28.15	<.001	-28.83	<.001	-28.83	<.001	-26.75	<.001	-30.75	<.001

The overall evaluation, incorporating the differential T-scores among the groups, Kruskal-Wallis test outcomes, effect size analysis, and the Dwass-Steel-Critchlow-Fligner pairwise comparison confirmed that elite athletes and non-athletes experienced

more negative mood states during the COVID-19 pandemic than non-elite athletes. The moderate to large effect sizes reveal a stark contrast in mood state changes between athletes and non-athletes during the pandemic, with non-athletes experiencing more significant adverse effects.

Discussion

The current comparative analysis of mood responses among elite athletes, non-elite athletes, and non-athletes during the initial phase of the COVID-19 pandemic surfaced several noteworthy trends. The heightened levels of dejection/anxiety and fatigue among elite athletes, in contrast to their non-elite counterparts, emphasise the distinct pressures and uncertainty faced by these cohorts during the global health crisis. These factors may have aggravated pre-existing stress and exhaustion associated with highly competitive sports for elite athletes or the exigencies of adult daily living for non-athletes. Additionally, the low variability in mood states among elite athletes suggests a more uniform emotional experience within this group, indicating a more consistent mood profile. On the other hand, despite experiencing higher levels of dejection/anxiety and fatigue, elite athletes also exhibited higher levels of vigour than did their non-elite counterparts. However, as mentioned earlier in the results section, the vigour scores of the elite athletes were more variable.

Heightened Mood Responses among Elite Athletes

This seeming paradox in the mood responses of elite athletes during the global health crisis highlights the complex nature of their psychological experience. This complexity is likewise reflected in a related investigation by Mehrsafar et al. (2021) on the mental health status, life satisfaction, and mood state of elite athletes over several phases of the COVID-19 lockdown measures. Their study presented elevated depression, irritability, fatigue, tension, and confusion scores for elite athletes from the shortened 30-item POMS version. The authors ascribed the heightened negative feelings of elite athletes to the pandemic-induced fear and loss, including health threats to themselves and loved ones, isolation from team and sport communities, lowered income, lack of societal support, and loss of normality.

Several factors may contribute to elite athletes' more pronounced mood responses than non-elite athletes during the pandemic-induced lockdown. One involves higher performance expectations. Elite athletes often face tremendous pressure to perform at the highest level, whether from themselves, coaches, or sponsors. The disruption of training routines and competition schedules during the pandemic may aggravate stress and anxiety among elite athletes who are intensely concerned about maintaining their performance standards in close anticipation of sport resumption after the pandemic. Research by Stambulova et al. (2021) emphasises the significant stressors elite athletes face, including the pressure to succeed, fear of failure, and uncertainty about the future, amplifying negative affect and mood during times of crisis.

Another factor involves the considerable investment in time and effort elite athletes commit to sport training and competition. In their seminal research on athletic identity, Brewer and colleagues (1993) defined the concept as “the degree to which an individual identifies with the athlete role” (p. 237). They developed the Athletic Identity Measurement Scale (AIMS) to operationalise the construct. Their work has generated extensive sport psychology research, identifying multiple beneficial and adverse effects of a strong athletic identity. For instance, a robust athletic identity is linked to high levels of

commitment to sport training and goal orientation (Horton & Mack, 2000), higher performance outcomes (Lochbaum et al., 2022), and increased levels of sport enjoyment (Babić et al., 2015). However, the literature reveals that a strong and exclusive athletic identity may engender lower tendencies to seek help and higher levels of gender role conflict (Steinfeldt et al., 2011), entice athletes to exceed optimal training regimens as a function of over-conformity (Coker-Cranney et al., 2018), and leave them vulnerable in career transitions such as injuries, deselection from a team, or career termination (Brewer & Petitpas, 2017).

A study by Rice et al. (2021) further revealed the psychological impact of the identity crisis among athletes during the COVID-19 pandemic, particularly among those who strongly identified with their sport. An examination of athletic identity and emotional regulation during the pandemic (Costa et al., 2020) showed that elite athletes exhibited significantly greater levels of the sub-dimensions of social identity, exclusivity, and negative affectivity, as measured by the AIMS than non-elite athletes. Moreover, these elite athletes with higher athletic identity scores demonstrated greater tendencies toward rumination and catastrophising. They attributed this observation to the peculiarities of the forced isolation that put athletes' careers on hold indefinitely. Elite athletes face limited timeframes within which to pursue their career objectives, and the compulsory cessation of their usual training routines and competition schedules during the pandemic may hinder the progression of their skills, impede their career trajectories, and jeopardise their prospects of success.

Non-Elite Athletes and Athletic Identity

Although the non-elite athletes in the study of Costa and colleagues (2020) were not necessarily all collegiate athletes but were competing at local and regional levels as opposed to elite athletes competing at the international level, their lower scores on the AIMS indicated relatively less investment in their athletic identity, thus reducing negative affectivity. Brewer and colleagues (1999) explained how college athletes distance themselves from their athletic identity after defeat, injury, sustained periods of underperformance, expulsion from their team, or retirement from the sport. This dissociation from their athletic persona ushers a psychological shift amidst adversity in their sporting journey. Such circumstances may compel athletes to re-evaluate their self-concept and redefine their identities as they grapple with the emotional toll of setbacks and transitions within their sport careers.

Settles and colleagues (2002) offered a different explanation for this apparent identity disengagement among collegiate athletes as a conscious shift in the centrality of domain-specific identities. They position this as essential to managing challenges involving role conflict, balancing academic and athletic demands, and finding mental health support. For instance, the athletic identity during the competition season will likely be highly central to collegiate athletes. In contrast, academic identity is expected to become more central during the examination period of the school year. This view was affirmed in the study of Yopyk and Prentice (2005) among student-athletes who quickly shifted the centrality of their academic and athletic identities within one experimental session. This self-regulation strategy may help student-athletes balance their dual careers. The collegiate non-elite athletes in the current study may have utilised this strategy because their academic engagement transferred to online platforms, requiring considerable time to adapt to synchronous and asynchronous learning. In the meantime, while their athletic careers took a back seat during the pandemic, this shift in the

centrality of their identities shielded them from heightened negative moods experienced by their elite counterparts.

Non-Athletes and Physical Activity

Interestingly, non-athletes experience comparable levels of dejection, anxiety, and fatigue as elite athletes but exhibit lower levels of vigour. This observation suggests that while non-athletes may experience similar levels of negative mood states as elite athletes, they may not possess the same psychological resources or coping mechanisms to maintain high levels of energy and motivation. Rahim and colleagues' study (2023), which investigated the health-related factors during the COVID-19 pandemic among the Iraqi adult population, may explain the mood responses of adult non-athletes during the pandemic. They found that physical activity levels and vigour levels are significantly correlated, whereas lower levels of physical activity correlate with decreased vigour levels. The fact that non-athletes do not engage in the same rigorous and structured physical training routines as elite athletes could explain the differential vigour levels observed in our study.

To better contextualise these findings, reviewing the measures provided by Petrowski et al. (2020) might be beneficial for gauging how these pandemic-related responses align with the standard mood states presumed by the POMS-16 before the pandemic. As a pre-pandemic baseline, the German sample employed to establish the POMS-16 exhibited lower levels of dejection/anxiety, fatigue, and irritability than all groups in the current study. Although the vigour scores of the German sample ($\bar{X}$=12.89) surpassed those of the non-elite ($\bar{X}$=9.28) and non-athlete ($\bar{X}$=12) groups, they fell below the vigour scores of the elite athletes ($\bar{X}$=13.16). This comparison highlights the pandemic's likely link between the pandemic and elevated negative mood states across the three samples in the study. Intriguingly, the non-athletes in our study exhibited the highest levels of dejection/anxiety. Elite athletes, on the other hand, consistently demonstrated more significant fatigue and irritability. However, the elite athletes also displayed greater vigour than the German pre-pandemic sample and their non-elite counterparts, suggesting a resilience or internal drive that persists even amidst increased mental and emotional pressure.

Vigour and Resilience

The observed high levels of vigour among elite athletes during the COVID-19 pandemic, despite experiencing high levels of negative mood states, may indicate their increased levels of resilience and coping ability (Leguizamo et al., 2021; Pellino et al., 2022). Elite athletes typically demonstrate greater psychological resilience than non-elite athletes (Taheri et al., 2023), allowing them to sustain peak performance levels under pressure. This resilience is cultivated through constant exposure to stressors and challenges and the implementation of effective coping strategies like goal setting, focus control, and seeking social support (Ozbay et al., 2007). Coping in sport psychology refers to individuals' cognitive and behavioural efforts to manage external or internal demands that exceed their resources (Birrer & Morgan, 2010). Elite athletes are known to employ a wide range of coping strategies, including problem-focused, emotion-focused, and avoidance-oriented strategies, depending on the nature of the stressor (Hamilton & MacDougal, 2007). The elevated vigour observed among elite athletes in this study could be attributed to successful engagement with problem-focused and emotion-focused coping strategies, enabling them to sustain motivation and energy despite severe restrictions resulting from the pandemic lockdown measures.

The findings revealed a fascinating pattern of vigour across all three samples involved in the study. Notably, vigour consistently emerged as the highest-rated dimension among the various mood subscales examined. This observation indicates that whether the research participants were elite, non-elite, or non-athletes, they reported higher vigour levels than participants in other mood states, such as dejection/anxiety, fatigue, and irritability. Despite facing unprecedented disruptions to their daily lives and routines, contextualised in a country that utilised extreme quarantine measures, the study participants demonstrated a remarkable capacity to maintain high vigour and energy. This unique finding could reflect Filipinos' resilience and adaptive coping mechanisms during adverse circumstances, such as natural disasters that frequently occur in their country (Adviento & de Guzman, 2010; Guinto & Logan, 2021). However, further empirical investigations are warranted to ascertain the individual and socio-cultural factors contributing to these distinct mood profiles and their implications for mental health and well-being, particularly within athletic populations.

The mood profiles generated from the current study present an intriguing contrast to findings from previous research. Lochbaum et al. (2021) synthesised pre-pandemic literature on athlete mood profiles, noting that while some studies have linked specific moods such as vigour and depression to athletic performance, the findings were not always consistent. However, the visual representation of the results, as shown in Figure 1, reveals an elevated mood profile among elite athletes across all POMS dimensions, including vigour. This deviation from the typical "iceberg profile," characterised by lower negative mood states and heightened vigour among elite athletes, suggests an atypical iceberg profile where all mood states are elevated, with vigour being the highest. The iceberg profile in sports, as proposed by Morgan (1985), is a visual representation of "desirable emotional health," featuring low scores in tension, depression, anger, fatigue, and confusion, with a high score in vigour (above the "water line"), as measured by the POMS. This metaphorical image is used to understand better the relationship between mood states and performance and the well-being of competitive and high-level athletes (Hanin, 2013).

Unlike elite athletes, non-elite and non-athletes exhibited notably different mood profiles. The non-elite athletes presented a "flat" profile, with T-scores consistently falling 4-5 points below the “water level” of 50, aligning with patterns observed in unsuccessful athletes (Gai, 2024). This observation suggests a relative absence of the heightened positive emotions often associated with high performance and elevated negative mood states in some populations experiencing adversity. Conversely, the non-athletes in the present study demonstrated an elevated mood profile across all POMS dimensions, indicating a heightened emotional state compared to non-elite athletes, but without the distinct peaks and valleys characteristic of the classic "iceberg profile".

Mood Responses and Culture

The preceding discussion on the mood responses of elite, non-elite, and non-athletes during the pandemic lockdown offers insights into their respective challenges, coping mechanisms, and resilience during unprecedented crises. Although this study did not endeavour to hypothesise that cultural differences affect the participants' mood responses to the COVID-19-related restrictions, a vital element in contextualising this study includes the cultural milieu of the Filipino samples in this study. Researchers often examine the interplay between culture

and psychological responses to circumstances. Cultural context plays a pivotal role in shaping individuals' psychological experiences, coping mechanisms, resilience, and overall mental health (Ji et al., 2022). Different cultures have varying norms, values, beliefs, and practices that influence how individuals perceive stress, approach challenges, and utilise coping strategies (Brady et al., 2018; Eid & Diener, 2001). This interplay between culture and psychological experiences is evident in Filipino culture, where emotions are intricately connected to understanding the self in relation to others.

Church and colleagues (1999) investigated how emotional concepts are structured within the Filipino culture, as evidenced by local terms for specific emotions, confirming the commonality of certain emotional experiences across different cultures while highlighting the unique cultural nuances of some emotions. They affirm what most lexical approach proponents hypothesise: certain emotions are more salient in some cultures than in others (Saucier & Goldberg, 1996). Similarly, they uphold what Levy (1984) proposed: that certain emotions are highly emphasised within a culture, a phenomenon that he termed "hypercognised." This tendency is evident in those emotions' extensive and refined vocabulary. By applying Levy's proposition to the findings of their study, Church et al. (1999) deduced that the predominant or hypercognised emotions among speakers of Filipino (*Tagalog*) include anger, anxiety/fear (and its absence), happiness, contentment, sadness, and arousal. In contrast, some emotional categories within the Filipino lexicon are comparatively underemphasised or "hypocognised." With minimal linguistic representation, they include feelings such as tiredness, guilt, surprise, contempt, and aspiration. Moreover, examining indigenous terms for emotions confirms that specific terms are more accurately classified as moods or experiential states rather than emotions. In their subsequent study investigating the structure of affect in the Filipino culture and comparing the results to those found in Western populations, Church and colleagues (1999) assert the cross-cultural comparability of emotions. However, they surmised that these cultural variations might significantly influence previous circumstances, frequency of occurrence, interpretative contexts, and responses linked with similar emotions rather than the structure of emotion itself.

Sta. Maria (2010), on the other hand, used a componential frame analysis to study the cultural underpinnings of negative emotions, identifying three clusters representing varying degrees of emotional intensity. He argued that such variations depend on the level of interpersonal relationships involved in the emotional experience. In the Philippine socio-cultural context, emotions are profoundly experienced within deeply meaningful relationships, characterised by a sense of shared humanity. In contrast, they tend to be less intense in superficial relationships. His study also suggested a process of re-appraising emotions involving members of an in-group, allowing the person to reassess the motives and intentions of others. Furthermore, he underscores that this view of relationships as integral to the experience of emotions is not limited to the experience of negative emotions but also applies to instances when someone's behaviours profoundly affect the *core* of one's humanity (recognised as *loob* in Filipino terms), despite the lack of a previous relationship with them. For instance, he cites the feeling of sympathy for a child who has been abandoned, even if one has had no prior involvement with the child. Although *loob* literally means 'inside' (which may refer to a physical demarcation, as in the case of the inner part of a house), it

is also used to refer to the subjective experience of the innermost self in relation to fellow human beings (known as *kapwa* in the vernacular). Alejo (2018) explains this phenomenon as the "relational interiority" of *loob* vis-a-vis *kapwa* (p. 29), highlighting how an individual's inner self (*loob*) is interconnected with others (*kapwa*).

Acknowledging these cultural considerations in understanding the differential mood responses of Filipino individuals in this study affirms our contribution beyond the evolving literature beyond WEIRD populations in psychological research, particularly within the sport psychology sub-discipline. Such WEIRD populations do not necessarily represent the global population (Beyebak et al., 2021), reinforcing earlier statements by Henrich and colleagues (2010a) that individuals from WEIRD societies are among the least representative populations to justify generalisations about humans. This reliance on a narrow sample for psychological research poses significant challenges to the applicability and universality of its findings, including those related to athletes' mood states and well-being during the COVID-19 pandemic.

Understanding the mood responses, as a quick assessment of well-being among Filipino elite athletes, non-elite athletes, and non-athletes amidst a global health crisis, also offers insights for providing culturally competent care in psychological practice, particularly sports psychology interventions for elite and non-elite athletes (Ryba et al., 2013). While the study's findings showcase variations in athletes' psychological experiences during the pandemic, they nonetheless underscore the need for culturally appropriate support systems to enhance the well-being of Filipino athletes, regardless of their elite or non-elite status. Such support mechanisms promote positive outcomes, such as cultivating inner strength or resilience (locally known as *tibay ng loob*) and promoting connectedness to a fellow human being (i.e., *kapwa* in family, teammates, society, and humanity).

Recognising the cultural nuances of psychological interventions for athletes in crises can enhance the effectiveness of support programmes, ensuring that they are adapted to meet the unique needs of athletes (and non-athletes) from diverse contexts. While the idea of tailored psychological interventions is not novel, this study engages in the expanding theory and practice of cultural sport psychology (CSP; Schinke & Hanrahan, 2009), aligning with its persistent calls to challenge the assumptions that Eurocentric paradigms are universally relevant and applicable across the disciplines of psychology, sport, and health sciences (Ryba et al., 2024). Indeed, ignoring the underlying cultural, social, and historical nuances in response to the COVID-19 health crisis perpetuates the normalisation of Western-centric perspectives and practices (Fox et al., 2009), ultimately reinforcing the unequal power dynamics dictating legitimate knowledge within the global sport psychology discourse.

Conclusion and Recommendations

The current investigation comparing the mood profiles of Filipino elite, non-elite, and non-athletes during the pandemic lockdown provides insights into the differential psychological responses of these sub-groups to the global crisis. Despite the elevated levels of fatigue, dejection, and anxiety among elite athletes, they also exhibit higher vigour compared to non-elite and non-athletes. Their atypical iceberg profile is a novel finding that highlights the intricate balance between resilience and vulnerability within this sub-group. In contrast, non-elite athletes, such as collegiate athletes, face unique challenges and demonstrate a

different mood profile, possibly due to lower performance expectations and a more adaptable approach to their shifting athletic and academic roles. The study also found that non-athletes displayed the most significant mood disturbance among the three groups. These diverse outcomes could be attributed to various factors, including differences in coping mechanisms, social support networks, structured routines and goals, and physical activity levels. However, despite the dissimilarities in mood responses among the three cohorts, all the participants demonstrated high levels of vigour, which may reflect the resilience of Filipinos in maintaining a positive mood amidst adversity.

This research expands the discourse on athlete well-being in several ways. First, the engagement of marginalised sub-groups from a non-Western culture in this study challenges the dominance of Western perspectives, which often shape our understanding of mental health within sport. Second, it emphasises the critical role of socio-cultural context in interpreting findings during a global pandemic, where experiences are invariably shaped by distinct social, political, geographic, and cultural factors. The specific focus on Filipino elite and non-athletes, in comparison to non-athletes, adds valuable nuance to our understanding of how competitive tiers that differentiate mood responses in the context of cultural values and norms might influence resilience, mental health challenges, and the types of support programmes that prove most effective.

Despite these notable contributions of the study, the authors acknowledge that the four-year delay between collecting data at the height of the pandemic-induced lockdown and writing this article poses potential problems, particularly concerning data relevance in the current context. Some scholars might question the significance and applicability of findings after significant changes have occurred in the conditions under which the data were gathered. Several factors account for the unintended delay in this study's report. The sudden shift to remote working conditions and the reallocation of personnel and funding due to the pandemic significantly impacted the research timeline. The research team faced logistical challenges in coordinating with collaborators and stakeholders, extending the original time needed for data verification, analysis, and manuscript preparation. However, these hurdles permitted a more thorough analysis of the data, incorporation of additional relevant literature that emerged during this period, and engagement in a more in-depth discussion of findings within the evolving scientific landscape.

The authors further assert the study's relevance beyond the psychological ramifications of the 2020 global health crisis to inform policy and programmes that better equip sports participants, coaches, leaders, and stakeholders for similar challenges in the future. The literature indicates that the psychological consequences tend to outweigh and outlast the physical effects of a pandemic. A meta-analysis of 65 independent studies by Rogers and colleagues (2020) revealed that those who survived serious coronavirus infections, including severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS), remained at risk for mental health issues in the longer term, even years after discharge from hospitalisation.

The authors likewise recognise the limitations of conducting a survey at a single point during the pandemic. The limited perspective of the study may not capture the full extent of fluctuations or changes in moods and well-being indicators over time. People's subjective experiences and perceptions can evolve as the pandemic progresses. A single research snapshot taken from responses to a questionnaire may not

adequately capture these dynamics. Because the data were not collected over time, the present study's findings may be limited to a specific period during the two-year pandemic. Therefore, caution is advised when generalising these interpretations. Future studies could benefit from longitudinal survey designs where data are collected from participants at various stages of the pandemic. This strategy may offer insights into how individual emotions, attitudes, moods, and behaviours develop in response to changing pandemic circumstances. Despite these limitations, this study advances the understanding of how the pandemic impacts athletes' mental health and well-being. By broadening perspectives beyond the WEIRD cultures often observed in sports psychology research, our results contribute to the broader knowledge landscape in this field.

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Disclosure statement

The authors report no potential competing interests. The data are not publicly available because they contain information that could compromise the privacy of research participants. They did not consent to sharing their data with anyone outside the research team.

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ORIGINAL RESEARCH

The Views, Values, and Experiences of Sport and Employability of Young Adults in a Deprived Community in the North of England

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Abstract

Young adults in deprived communities in the United Kingdom (UK) are less able to access sport and leisure activities compared to more affluent peers. Physical activity (PA) can enhance life skills and facilitate employment. This project aimed to critically explore how sport, PA and employment were perceived by community leaders and younger adults as development opportunities. Appreciative inquiry was used to engage community leaders and young adults to reflect on their experiences living and working in a deprived community. Interviews, workshops, and community action methods were transcribed, thematically analysed, and used to share back insights with wider stakeholders. Participants were positive about their neighbourhoods but recognised significant cultural and gender barriers to achieving their goals. Community leaders and younger adults identified how their cultural and household experiences influenced the choices of community engagement. Participants identified education as important to them and their families and expressed frustration that opportunities for local sport and PA were not geared for the development of life skills and to enhance their employment opportunities. The results suggest how sport and PA infrastructure could be more strategically aligned to health, well-being, and social integration with a focus on skills development and building experiences related to employability.

Introduction

Participating in sport and physical activity (PA) has multiple physical and social benefits (Garner-Purkis et al., 2020). Participation in organised youth sport (i.e., structured and rule-based PA) is thought to positively predict involvement in other community activities and increase social capital for individuals and groups (Perks, 2007). Sport, exercise and PA can act as a vehicle for wider social development and social change in deprived communities.

Although traditional school-based PA is known to be largely ineffective in engendering life-long engagement in PA (Kirk, 2005), there is an argument for youth participation in physical activities based on encouraging healthier lifestyles, enhanced academic achievement, emotional positivity, and higher levels of confidence (Chalkley et al., 2015). Enhancing social inclusion/cohesion and reducing high rates of crime (Skinner et al., 2008; Waring & Mason, 2010; Morgan & Parker, 2017; Jugl et al., 2023) are just some of the reasons for maintaining sport participation.

There are a range of social and contextual reasons why young adults withdraw from sport or are difficult to engage (Balish et al., 2014), which is why benefits are not equitably realised across more deprived populations. However, schools in deprived areas have introduced a range of initiatives to tackle low sport participation rates and increase long-term engagement (Dagkas & Stathi, 2007). Plus-sport / Sport-plus programmes (Coalter, 2009) have been used to address broader social cohesion, and this is often achieved by developing and sustaining sport organisations in underserved communities (Whitley et al., 2013). The focus has been on social outcomes and sport is a secondary consideration. The potential value of using sport and PA as a vehicle to alleviate broader social issues and target marginalised youth is evidenced in policy and strategic funding (Morgan & Parker, 2017), with an increase in sports-based programmes aiming to address worklessness and social exclusion (Spaaij et al., 2013) and to address wider life chances in more deprived areas.

Social mobility refers to an individual or group's ability to improve their current status in relation to social class or position in society (Breen, 2004). This is often determined by the household occupation/ income (Social Mobility Commission, 2022). Socioeconomic status, social class and home environment all impact the perception of participation in sport and PA, with those from a lower socioeconomic background typically less engaged and underrepresented (Tandon et al., 2021). Young people living in deprived areas also have reduced access to sport and PA opportunities compared to their more affluent counterparts (Atkinson & Kintrea, 2004). This disparity of access increases inequalities (Edwards et al., 2015) in aspiration, health outcomes, life expectancy and quality of life (Pampel et al., 2010; Leonard, 2017), limiting growth in social capital and well-being (Atkinson & Kintrea, 2004; OECD, 2022).

Sport for Development and Employability

The impact of sport for development (SfD) relates to sport and PA-based interventions designed to support and achieve non-sport goals. These outcomes include gender empowerment, health promotion, positive youth development, employment and employability (Darnell et al., 2019) and encompass areas such as ‘sport for positive youth development’ (PYD) and ‘sport for life skills’ (Damon, 2004; Holt, 2016; Hermens, 2017). PYD is a strength-based perspective that understands children, and young people have ‘resources to be developed’ rather than using the deficit model that identifies ‘problems to be solved’ (Lerner et al., 2005; Burkhard et al., 2020). Sport development activities are also promoted to address local social tension, and sport and PA are seen as a method to enhance social mobility in communities deemed most marginalised (Morgan et al., 2019). For example, youth employability has been a persistent concern for several decades and appears worsened by the COVID-19 pandemic: in the UK, 54% of those losing employment were youth (16 to 18 years) (Office for National Statistics, 2021). Youth unemployment has risen, and the number of employed young people has fallen, with specific concerns relating to poor

levels of participation in career-oriented planning (Morgan et al., 2022). Employability skills are those that are necessary for getting, keeping, and succeeding at a job and include abilities that enable people to get along with their fellow workers and supervisors and make sound, critical decisions (Crawford et al., 2011; Social Mobility Commission, 2019). Unlike occupational or technical skills, employability skills are generic in nature, cutting across all industry types, sectors and job seniority.

Economic evaluations of large sporting events have demonstrated an economic impact by generating additional employment and the potential for long-term economic gains (Ruiz, 2004). But perhaps more significantly, involvement in sport and PA participation can equip young people with specific 'core' and 'soft' skills that may raise their level of employability (Morgan et al., 2022). Research by McDonalds (2015) suggests that many employers consider soft skills such as teamwork and communication more important than academic abilities yet, within academic literature soft skills are considered somewhat neglected (Hurrell, 2016). Attitudinal and social gains are associated with cooperation, leadership, respect and teamwork, enabling young people to enhance their participation in sport to achieve social inclusion. The critical factor appears to be a commitment to enabling personal development through sport, focusing on individuals who are considered disadvantaged or 'at risk' (Coakley, 2011).

Study Objective

Youth from deprived communities do not often have equitable access to sport and PA, and this leads to poorer outcomes and inequalities. Barriers exist and are known, but thus far, research has yet to explore these through the lens of the people who experience them. The objective of this study is to foster a shared and critical understanding of the challenges faced by young people in deprived communities regarding sport, PA, and employability, particularly within their cultural contexts, with the goal of proposing strategic alignments of sports and PA infrastructure with health, well-being, social integration, and employability.

Methodology

The research focused on redressing deficits experienced by individuals in a specific community by giving voice to individuals who have typically been excluded (Warwick-Booth et al., 2021). An embedded researcher was hosted in a Community and Voluntary Sector (CVS) organisation to engage with and include the participation of 'non-academic partners' who have insider knowledge to shape and contribute to the research that intentionally sought to benefit them at a local level (Daly-Smith et al., 2020). The role enabled a policy understanding with stakeholders who would implement the findings (Giampapa, 2011) and was based on ensuring equitable engagement, social processes and outcomes (Martin, 2008). Embedded researchers also pose challenges to the systems in which they work by engaging with nuances and complexity in local contexts (Giampapa, 2011; Gradinger et al., 2019), facilitating subsequent implementation activity, sharing knowledge between researchers and stakeholders (Cheetham et al., 2018).

Study Design

Appreciative Inquiry was used to inform the study design. Appreciative Inquiry is an asset-based approach to organisational engagement that uses questions and dialogue to help participants uncover existing strengths, advantages, or opportunities in their communities, organisations, or teams (Bushe, 2012). Using Appreciative Inquiry as

an approach involved focusing on the four core principles (Cooperrider & Srivastva, 1987) and the '4 D model':

1. Discover: grounded observation to identify the best of what is
2. Dream: vision and logic to identify ideals of what might be
3. Design: collaborative dialogue and choice to achieve consent about what should be
4. Delivery: collective experimentation to discover what can be.

The study was based around public engagement and co-production through two rounds of consultation with community leaders, health and wellbeing organisations, and a group of young adults (aged 18-25 years) from a specific and deprived local area. This participatory approach ensured appropriate engagement and interaction between all parties (Cornwall & Jewkes, 1995) with direct access to local priorities and perspectives. Funding for the embedded researcher and internships was achieved via charity and civic support. Ethical approval was granted by Sheffield Hallam University [ER 30099685].

Participant Recruitment and Data Collection

Stage one: Community leaders. Participants were identified through recommendations from the CVS organisation and then via 'snowballing' (Parker et al., 2019), allowing local people to suggest potential participants via local knowledge and networks. Interviews were arranged with those selected for their perceived ability to identify sport, PA, and employability issues, as well as their applied experiences working in the locality. The sample size was determined by the availability of VCS leaders and the capacity of the researchers based on available time and funding restrictions.

Interviews took place face-to-face or via video link. They were structured around the Appreciative Inquiry model to explore local assets (people, organisations, and infrastructure), opportunities around sport, PA, employment, perceptions of youth and young adults, and aspirations for the future. Interviews were recorded on MS Teams and transcribed verbatim. Findings were presented, discussed, and themes shared with a stakeholder group, the CVS Board of Trustees, before stage two commenced.

Stage two: Young adults. Participants were invited to respond to an explanatory flyer distributed locally, electronically, and on paper. A video was also produced and shared to convey information about the project and reach a wider audience; sent out via the CVS organisation and the University's Twitter feed. The term 'expression of interest' (EOI) was used rather than 'application' to make the recruitment process accessible and non-threatening. EOIs could be submitted by video, voice-note, via a phone call, in writing, or through the completion of a survey, supporting consent and GDPR requirements. The sample size was selected based on the anticipated numbers to deliver an engaging co-production activity in a safe and trusted space for the participants, coupled with budget limitations for the voucher payment per participant.

Recruited participants were asked to consent to session participation and anonymised data collection. Workshop sessions, running for 90 minutes bi-weekly for eight weeks over the summer (a total of four sessions), were held and included 'ground rules' to encourage honesty, confidentiality, and respect. Sessions also included group discussions, breakout conversations, and facilitated activities to explore experiences, beliefs, views, and values around key themes. Particular attention was placed on ensuring all interns had a voice and that they could review their participation at any stage.

Session one included a topic introduction - 'sport for employment' The following questions were used to frame discussions:

1. What experiences have you had with work through you, friends, and family?
2. Can sport and physical activity help people get good jobs? (And if so, how/why?)
3. What does your future life look like, and what will work look like for you?

Session two explored employment skills linked to PA and sport, focusing on hard and soft skills, behavioural traits, and character traits (Balcar, 2016).

Session three included a consolidation activity, and participants were asked to continue reflecting using 'discover', 'dream', and 'design' in relation to their life experiences. Finally, a conversation was framed using the questions 'What do you want to achieve?', 'What gets in the way?', and 'What help do you need?'.

Session four included preparation for a short group and individual presentation in the research centre, to which stakeholders, participants, and families were invited and where the study outcomes were shared. In each session, data were captured through voice notes recordings and the use of flip charts, sticky notes, and whiteboards.

Data analysis

Interview data from stage one and stage two were collated and analysed systematically using a Thematic Analysis (TA) approach (Braun & Clarke, 2019): familiarisation, generating initial codes, searching for themes, reviewing 24 themes, defining themes and analysis write-up. TA is a flexible qualitative methodology that is not theoretically bound, producing patterns of meaning or 'themes' in the data through coding, categorising, and review. Theme descriptors were created to articulate the shared meaning of the themes across the community leader interviews and co-production sessions.

Results

Stage One

Five men and five women aged between 32 and 54 were interviewed. Six interview participants worked with the CVS host organisation in client-facing roles such as link workers or project officers. Other interview participants worked for delivery organisations, the local council, and youth services. All participants had significant (10 years plus) experience in community-facing roles and direct experience within the locality of focus. Participants came from a range of ethnicities representative of the area and population.

The view of the local area held by the community leaders was highly positive and outlined its potential. While outsiders use terms such as 'disadvantaged', 'underserved' or 'deprived', the view of the interview participants presented a richness of characters, collaboration and opportunity. Four key themes were identified via the interview process as outlined in Figure 1:

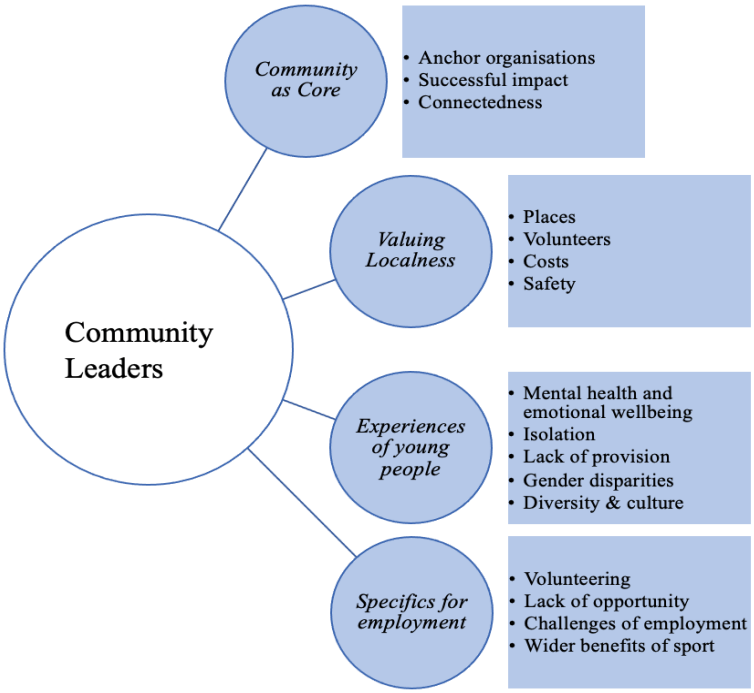

Figure 1. Themes from community leader interviews:

Community as core. The community leaders were focused on their roles in the anchor organisations and their links across the community; "The centre is like a bridge to reach the people in the community". They were all able to define what success meant to them in that context; "success is a child who was 13 coming to me at age 22 and saying, "I made it through" and "the purpose of our project is to reduce the likelihood of them (the clients) entering into criminal justice system".

Most leaders stressed their connectedness to community groups to help people connect with their communities, develop their sense of belonging, and focus on health and wellbeing. For example, "I serve as a pipeline, part of a one-stop shop so people get connected with local services" Or "to support people, who otherwise would struggle to get along, to look for services and ideas for connection in their community". The area was seen as having lots of potential and the irony was that "The area was falling into that trap of being deprived but not quite deprived enough to be able to access some of the funding across the city".

Valuing localness. This component refers to the place and the way that the organisations, infrastructure, processes, systems, and financial situations operate. This includes the lack of assets, services, and funding from a personal, professional, or population deprivation perspective. Localness reflects 'knowledge of community culture—the way we do things around here'. The theme refers explicitly to places, physical infrastructure, and facilities.

There was the acknowledgement of the lack of provisions or available places to go (sporting or otherwise); "There's no place to relax, a small gym, a community centre, a place where they can also go to discuss things. A small place where they can just sit and discuss things around a table, they don't get this. The leisure facilities in the area are run down and underused, and there is a lack

of options for community spaces." These problems are relatively common in more deprived areas, and there is generally a lack of supervision for evening activities, particularly for girls. As commented, "In the evening, there's nothing open this far from the city centre, so there's nothing in that sense happening."

Assets and employment opportunities were referred to; "It (the area) has a thriving high street, lots of local businesses and a post office… and we're surrounded by industrial estates with lots of employment opportunities." The area also benefited from people who would engage: "I feel the community is steeped in more of a sense of community and a willingness to participate and to do good." Some referred to people as contributing to the local area, for example, "there are a lot of local people who want to do some good stuff. We've got volunteers with a range of different skills, and we've got a range of different talents and backgrounds." The resilience of local people was highlighted: "The area, I think, is a really interesting area that has huge amounts of potential and has done some brilliant things, mainly through the kind of grit and determination of local people."

There were also limitations around facilities or access to sport and leisure, specifically highlighting a lack of local swimming pools and mentioning the cost related to larger and sometimes multigenerational families. Cost of access is a barrier to accessing leisure facilities; "we go to the [a local leisure venue] and things like that, but still, it's quite expensive." In addition, leaders recognised the focus on access for some groups over others; for example, "it feels like a bit of a black hole in the city for me around about 14 – 16 plus age group" - "the children when they are between 12-25, that is the time they've got a lot of energy, but they can't do anything."

Safety was an additional factor, specifically, parents' concern for their children when they did go out, exacerbated by the lack of available activities: "I have spoken to people here who don't feel safe sending their young kids out in the evening." "15, 16, and 17-year-olds, even 18 or 20—their parents, they hold them back, and they say don't go out, just stay home. I don't want you to do any problem or anything."

Experiences of young residents. Leaders referred to a range of issues associated with mental health and isolation and emotional well-being but also that "the younger generation at the minute want things here and now, they are not necessarily willing to work for it, or they want immediate results as a result of their work." Gender difference was a pervasive sub-theme: "They don't have a particular place to go, the girls. The boys, they used to have some. They used to go to play football or go to a private gym. But the girls, they don't have enough, they have no opportunity at all," and "for girls, I would say the majority of what I've mentioned is all male-dominated, and there is probably a lack of opportunities for girls in the community." The challenges young men face with confidence or mental health in relation to employment were explicitly mentioned. Notably, this differed with challenges females may face "A lot of it's true confidence. I would say, particularly with young men, that they're less confident using different ways of communicating and communicating with different people." Despite the underlying difficulties within the area, belief was still high that there was potential in the young people of the area and that, with the right support, they could achieve.

Diversity and culture were frequently mentioned in community leader interviews. The reference to gender difference, "girls being told to stay home or it's not safe is

because of the context of religion," and social cohesion was important. " It will take time to mix cultures and accept the changes, accept other cultures. It's good to learn from the other cultures; you know they will be thinking differently."

The dominant request was for new or re-purposed facilities in the community "If there are facilities for the kids, for the young, for the adult, you know, for the men, the woman, something like that. So, like one place it has all these." There was an emphasis on a single place where many activities could take place, similar to a leisure facility, "One place can help if that person could just go to that one place, and they will find everything in that one place. I can do exercise, helping with employment, you know all the things. It will be in one place that will be great, to be honest." Increased utilisation of community assets was mentioned, with interviewees focusing on underutilised spaces.

Specifics for employment. The need for voluntary activities that are meaningful and lead to paid work was raised frequently and is a sub-theme. Local employers were deemed important for developing specific skills for applying for work, such as CV writing and interview preparation. All interviewees regarded volunteering as a tool to help gain skills and experiences "volunteering can be a good springboard to different skills and opportunities. I think that with volunteering you've given up your time. You've learned something new." The need for education and support for people to increase employability skills "We could offer certain skills to help get people job ready and maybe whether that be interviewing skills or workshops on filling in application forms or something like that." Job fairs were mentioned regularly as 'valuable.' Frustrations with the lack of opportunity for youth employment in the area were highlighted. "If they want you to do the paid work, they found they haven't got anything in here. They have to go outside of the area" and "it's really difficult for young people to get that first step on the ladder." Access to employment was thought to be affected by certain postcodes that were known to be more deprived. This recognition of place as a disadvantage was particularly emphasised, based on local stigma: "A certain young person from a certain postcode would be seen as untrustworthy or whatever."

Employment and employment-associated challenges of being from the area were frequently mentioned. "We're in a really challenging period anyway for any sort of employment and young people." The paucity of experience and engagement was mentioned in several interviews, reflecting local knowledge. "The sad position that we're in is that a lot of young people, although they might learn how to write a CV, they've got not a lot to put on it because they've not had experiences yet." However, it was suggested that the opportunity would be taken up if offered and supported. Sport was mentioned by some of the interviewees as valuable in building employment skills and personal confidence, "sport massively helps find transferable skills that employers would look for."

Stage 2

Twelve young adults were recruited via the EOI, and 10 participants (referred to here as 'interns') attended the first co-production session, with one failing to attend subsequent sessions. Nine interns attend all sessions and the presentation evening. All interns were second and third-generation British Asian and Asian, five women and four men, ages ranging from 16 to 27 years. The themes that were identified within this data are outlined in Figure 2.

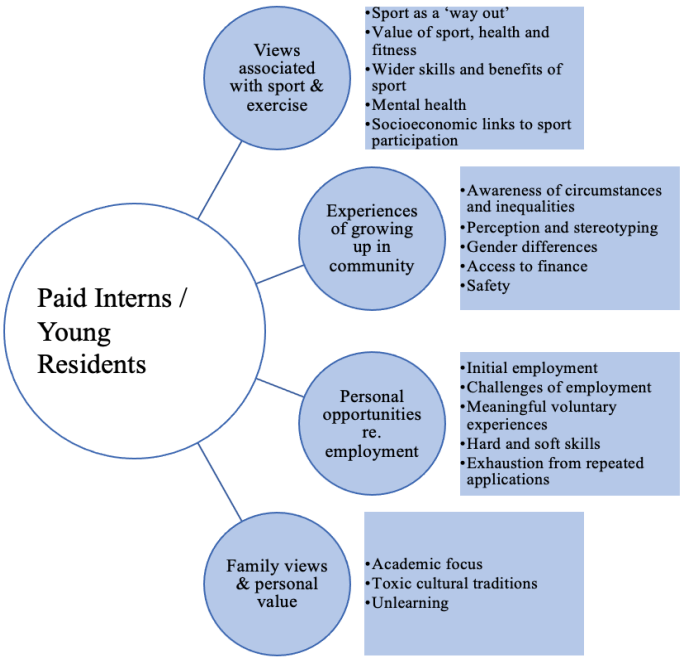

Figure 2. Themes from paid interns co-production activities:

Views associated with sport/exercise. Links between sporting activity for those from 'bad backgrounds' suggested that greater resilience and confidence could be achieved and that sport was a 'way out' of a current set of circumstances. "They had that Mo Farrah documentary; he came from a bad background, but sport helped him to improve his life". The idea that sport participation teaches resilience was often mentioned "if '*summat*' doesn't go right you learn, and you push yourself" and "How you respond to failure in sports determines how you respond to so many different aspects of life." Participants recognised the association with life skills, "like gaining confidence, teamwork, communication skills, that sort of thing; it's good for your physical and mental health" and associated life skills with other development "It gives you skills that you use in interviews to impress people." It was also recognised that sports and PA can positively impact work and jobs, "Healthy body, healthy mind. So, if you're in a better state of mind, you perform better in your job".

Types of sport were discussed, and it was recognised that different sports had a variety of outcomes, "Sports gets people out of bad activity" "Asians used to do boxing and think they were better than everyone and attack people for no reason, sometimes sport gives them an excuse to do bad things." In addition to this, some sports were socially or culturally associated, "some sports, like tennis, for example, it's mainly made up of people who are richer, like they had rich families to start with." This view reflected how participation in certain sports may be linked to socio-economic status, with those from a higher SES perceived as more likely to participate in such activities as tennis. This limiting factor was linked to opportunity: "If they are living in a deprived area or if they come from a low social class, then they probably won't be able to access sport."

Values and experiences of growing up in an underserved northern community. Young residents of this community are highly aware of their environment, personal circumstances, and the disparity of opportunities and life chances, and they appear to compare

themselves with those living in more affluent areas. It is well recognised by the young people that others have it easier and have more opportunities, whilst barriers exist to them. “There's a big disadvantage of being in a deprived area like this one; the people who live in the well-developed areas have it much easier.” Likewise, “I came from a dysfunctional and financially deprived background, and I was obstructed from doing so many things.” There were also concerns raised relating to how others from different areas perceived those living within this community. “There are people in this community who are pricks, and people think you’re one of them, like you know, people who do bad activities and drugs; people think you're the same and don't wanna talk or make a relationship with you.” Participants are aware of the dangers and safety issues within their community, and when asked if a miracle was to take place, what would be different? All participants linked their answers to improved feelings of safety when going out within their local area.

However, it was also recognised that some specific opportunities were exclusively available to young people due to living in a deprived area. “When I was looking to apply for some universities, they had circumstantial grades, so if you came from a certain area or were a certain ethnicity, they would lower the grades for you.” Gender was a further diversifying factor with greater freedom and different opportunities available for young males than their female equivalents. This was discussed, “In this community, there aren't enough opportunities for girls like, you know, youth groups and stuff because I've tried looking, you will find endless activities for boys like my brother has endless activities, but for me, I can't find any.” This raises the question of why young females have less access to activities and opportunities than young males living within the same area.

Finance is seen as a significant limiting factor, as is safety and access to activities and recreational spaces. “If they don't have any money to spend on extracurricular activities and stuff like that, then it’s harder for them to improve their quality of life.” Moreover, “Finance, it's always money; definitely, money is the answer to everything. People on free school meals don’t get as many opportunities.”

Experiences and opportunities related to employment. Access to employment opportunities is limited, and part-time work/volunteering opportunities are hard to find. “I'm wanting to start volunteering to get experience, but there's a lot of restrictions and stuff”. Similarly, “I volunteered at a charity shop, but then Covid hit, so I had to stop.” Volunteering is recognised as valuable with the potential to lead to employment: “I volunteered with them for 7 months, and now I'm actually working for them, and they are paying me, I’m really glad I’ve got that job.” However, some recognised that volunteering opportunities need to provide a specific experience with direct benefits rather than just be a 'CV filler'. “I hear too many times, it looks good on your CV, it’s almost like a robotic statement rather than actually appreciating the experience and letting it change and develop you.”

Those who had paid work frequently did not enjoy it or feel valued by their employers: “My part-time job ever since I started at 16 was at McDonald's, and I’ve absolutely hated it; I think sometimes they forget you’ve got a life elsewhere.” Others had invested time writing applications and looking for employment experiences but failed to obtain any, so the process of applying for work was seen as confusing. Negative past experiences were a significant factor in confidence, self-worth and self-belief. Many participants reflected on feelings of failure when being turned down or

rejected. “I wasn't able to get any jobs last year; I had like 20 places not got back to me” “I went through so many job interviews; it wasn’t easy to get a job. I kept failing and failing. I always ask myself, why? Is it cause I’m a girl? Is it cause I'm Asian?” This raises the question: Do all young people struggle to maintain employment, or is this something more common among disadvantaged youths, certain genders and those from ethnic minority backgrounds?

Employment skills within employment were split in discussion between hard and soft skills. Technical (hard) skills gained through hands-on training and character-based (soft) skills such as openness to criticism were understood and recognised as important qualities for employment. However, there was a shared understanding: “Communication, teamwork, time management, critical thinking, decision making, adaptability, and conflict management are all important.” Participants were aware of the tensions in organisational activity, “They say they want creativity, but I don’t think they do really ‘cause they just want someone who does as they are told.” Young residents saw soft skills as highly important to employers. These were understood to be developed through a broader range of spaces and activities, including sport and PA. In contrast, hard skills were seen to be developed on the job, in school, or through specific training.

Family views/culture and personal values. ‘Asian Parents’ were often mentioned, reflecting values associated with high academic attainment and focusing on higher-status job roles. “Asian parent mentality, they think grades are everything.” Similarly, “I’ve always been pushed for good grades cause Asian parents.” Many parental concerns were referenced, “My Dad just thinks you need a degree and then you're a good person; if you don’t have a degree, you’re not a good person” and “You have to be good academically to have a good life.”

Additionally, sporting activities were seen by parents as conflicting with academic goals. “If their child goes and does sport, they think they're not gonna get a job out of that; they don’t support you when it comes to sports.” Similarly, “My parents never encouraged me to do sports; they are entirely wanting you to get a good grade and think sport will compromise it all.” Opportunities and expectations for females were often significantly lower than those for males regarding activities, expectations of life outcomes and parental support to achieve success. Expressions of priorities are gendered; “Gender plays a big role in cultures, especially Asian. The male gets more support, more opportunities, more control over their life than a female.” and “My Mum won't let me play football cause I’m a girl, and you're not supposed to”.

Concerns relating to ‘toxic cultural trends’ and a negative impact on mental health were also raised. Participants recognised their history and culture as influential, “The thing with mental health is that it stems from culture and parenting.” Similarly, “I think also, preventing toxic cultural traits on people from a young age because even though we’re in the 21st Century, mental health isn't considered normal in every culture.” It was recognised that experiences while young were hard to 'unlearn', so family or cultural behaviours can determine future trends and behaviours. Relating to safety and recreational spaces, the young residents expressed their concerns. “I'd be scared going to High Hazels Park; my dad keeps saying oh, people get stabbed there.” There is perhaps a learned fear to “Stay away from the car park and stay away from the bottom ‘cause it's very dangerous” from those who recognise the risks for some young people.

Discussion

This study sought to achieve a shared and critical understanding of the challenges faced by young people from a deprived community regarding sport, PA, and employability, particularly in relation to their cultural contexts and values. This suggests how a sport and PA infrastructure could be more strategically aligned to health, well-being, and social integration. The appreciative inquiry approach enabled a participative approach to engage with young residents and community leaders.

Our research is consistent with previous research highlighting how individuals from deprived areas are typically less engaged and under-represented in sport and PA due to socioeconomic status and social class (Tandon et al., 2021). A sense of pride and appreciation for the local area and its residents was prominent in young residents' and community leaders' narratives. A close connection with others from the area was prevalent, and there was a recognition that leaving the area may not be desirable due to this connection and the proximity of family. The area was an important part of their lives and identity.

The key themes and sub-themes contrast with some of the previous research that has stressed multiple physical and mental health benefits of participating in sport and PA (Garner-Purkis et al., 2020). The contextual factors are perhaps more figural in this work, demonstrating that experience is diverse and more nuanced in relation to cultural and structural features. Based on this finding, the discussion will focus on the contextual factors that provide significant learning about how sport and PA can be understood as a driver for employability.

Sport for Development: Structural Features

Policies and strategies developed by Sport England, Streetgames and The Sport for Development Coalition have promoted sport and PA as a means of benefitting poorer and more diverse populations and sport programmes have represented an important opportunity for young adults to develop 'life skills' (Holt, 2016; Hermens, 2017). It is widely acknowledged that the local sport facilitation infrastructure enables people to participate in sport and PA and, for some, experience success in relation to community and employment environments (Danish et al., 2004).

Developing sport programmes is considered particularly essential for young people of colour, some of whom are disadvantaged and underserved, experiencing poorer long-term outcomes (Newman et al., 2018). Different cultural groups are differentially engaged in sport, and this is somewhat influenced by household expectations and parental pressures that influence involvement in sport and sporting programmes (Kay, 2006). Asian parents, in particular, emphasise that social mobility for their children will more likely be achieved through high educational attainment and success (Shah et al., 2010) at the expense of engagement in sport. Girls and women of colour from working-class backgrounds are particularly influenced by cultural barriers, with this group being the most overlooked and underrepresented within youth sport (Mann & Hacker, 2024). There is also a criticism of sport approaches as 'a panacea for social disharmony' with sport and PA benefits being largely 'unproven' and lacking epistemological sophistication (Coalter, 2007; Sandford et al., 2006; Morgan et al., 2019).

There was agreement and deep discussion concerning young girls and women from ethnic minority groups and working-class backgrounds and cultural barriers to vocational activities. As a result, these groups are the most overlooked and underrepresented within youth sport and have

significant health inequalities (Mann & Hacker, 2024). This is consistent with previous research that highlights that there are certain cultural expectations and parental pressures surrounding the gender roles of young people from ethnic minority groups (Kay, 2006). The focus of curricular activities over vocational opportunities is referred to as 'ethnic capital'. It transmits high educational values and aspirations from parents and parental peers to children (Chakraborty et al., 2019). It is understood that these high aspirations and 'ethnic capital' are why more working-class Asian students enter higher education than their white peers (Modood, 2004; Zhou, 2005). Much activity in community spaces of this nature may well be effective, impactful and enjoyed by the identified audiences; however, it may sit outside the context of academic evaluation. More work is required to analyse and understand the current programmes deeply rooted in community spaces. Additional targeted programmes and specific evidence of impact are also required to fully understand the role, contribution and possible benefits of sport for the development of society and within specific population groups.

Sport for Development and Employability

Concerns have been raised that SfD and employment initiatives focus on developing personal responsibility and are used as a form of social control (Parker et al., 2017). It is believed that further research in SfD and employment is needed to provide a more detailed analysis of the role that sport plays in developing employment skills and employability (Coalter et al., 2020). Marginalised young people are understood to be most affected by reduced opportunities and social inequalities (Henehan, 2021; Lambovska et al., 2021). Research suggests that in addition to impacting young people's physical and mental health, many young people have also suffered negatively, relating to their confidence and motivation to successfully engage in employment-focused activity (Morgan et al., 2022). However, whilst sport has many recognised benefits for employment initiatives, some question how ethically sound they are, such as Parker et al. (2017).

Programmes aiming to support socially vulnerable youths in developing their life skills in a meaningful way are often described as PYD programmes (Damon, 2004). It is believed that using this strength-based perspective and creating positive sporting experiences in which young people can immerse themselves results in improved emotional and cognitive life skills, increased self-worth and reduced depressive symptoms (Jonker et al., 2011; Eime et al., 2013). When adopting this approach, coaches are recognised as key figures in the process, enabling life skill development and the transfer of learning (Newman et al., 2018). However, previous research indicates a disparity in the delivery of PYD, with some coaches having specific strategies and others struggling to articulate successful delivery (Camiré et al., 2012). Additionally, the success of utilising PYD to support socially vulnerable youths is contested, with some arguing that there is a lack of sufficient theory relating to PYD research (Hodge et al., 2013) and a lack of measurable, identifiable developmental outcomes (Coakley, 2011). More applied research is required in this area to address the criticisms and to explore and fully understand the impact, benefit, and potential of targeting PYD programmes with intended social and employment outcomes. Additionally, applied guidelines rooted in practice as a result of such further research are required to support and encourage others to carry out meaningful and effective work through sport and physical activities in underserved and diverse community spaces.

Conclusion

This study highlights the intricate and multifaceted challenges young people face in deprived communities concerning sport, PA, and employability whilst outlining the critical influence of cultural and socioeconomic contexts. The appreciative inquiry approach revealed that young residents have a strong sense of community identity and pride despite socio-economic constraints. Personal, situational factors and connection to community and place influence preferences and engagement with sport and PA, challenging previous research that often overlooks such contextual factors.

Findings in this paper suggest that a more nuanced understanding of cultural and structural elements is essential for developing effective sport and PA programs, especially with outcomes focused on social development and employability. These programs must be strategically developed and delivered purposefully to promote health, well-being, and social integration, with a particular focus on supporting marginalised groups, such as young women from working-class backgrounds, who face significant cultural barriers and health disparities.

The study also highlights the critical role of SfD initiatives in enhancing employability outcomes. However, concerns about these programs' ethical implications and efficacy require further research and more applied evidence of effectiveness. Sport for Development and PYD approaches show promise but require more robust theoretical foundations and measurable outcomes to validate their effectiveness. Global and national policies may be required to establish the role of SfD better and to encourage improved application of the approach. This research calls for a deeper exploration of sports' role in supporting socially vulnerable youths and ensuring that SfD initiatives are equitable and impactful.

Strengths and Limitation

This is a novel paper with a combination of unique features, including the use of Appreciative Inquiry, the focus audience and the co-production process with paid interns. These approaches are strengths of the work, demonstrating positive and demonstrative community-focused research practices. Participatory methods and appreciative inquiry were used as core methodological approaches. While these methods provide rich data and insight, it is essential to critically consider the challenges and barriers that can occur when using this approach (Smith et al., 2022). Areas where this work could be improved include a larger sample size, broader and deeper recruitment and specific approaches that limit potential bias when interpreting data.

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Disclosure statement

The authors report that there are no conflicts of interest in this work.

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ORIGINAL RESEARCH

Physical Activity Adaptations in Vietnam during COVID-19

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Abstract

The COVID-19 pandemic presented a severe global health crisis. Countries worldwide have implemented various strategies to counteract COVID-19, such as social distancing, self-isolation, and quarantine regulations. The sudden changes affected people's lifestyles, including physical activity (PA). This study investigated the impact of the COVID-19 pandemic on PA in Vietnam. Based on the small-scale online survey data involving 627 respondents, results showed that most of them tried to preserve their exercise habits during the outbreak, perceiving exercise as necessary to improve health and prevent illness during the pandemic. People managed to maintain their sports activities; some even increased their PA levels from pre-pandemic levels. There was a noticeable decrease in playing sports that required gatherings, specialised infrastructure, and equipment. Most respondents preferred individual training during the pandemic; some new forms of PA, such as practising in small groups via online guidelines, were developed. The findings reveal that the Vietnamese respondents adapted their PA given the restrictions of the pandemic. Recommendations include considering online and home-based exercise programs to promote PA during similar public health emergencies requiring quarantine measures.

Keywords:
exercise, health, pandemic, physical activity, well-being

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Introduction

The COVID-19 pandemic and its rapid spread have caused a massive global health crisis (Bentlage et al., 2020; Coen, 2023). Data shows that over 676 million people across the globe have been infected, with more than 6.8 million related deaths since the pandemic outbreak in December 2019 (Center for Systems Science and Engineering, 2023). Governments in various countries have implemented innumerable strategies, including physical distancing and self-isolation regulations, to control the spread of the virus and reduce the risk to national healthcare systems (Sallis et al., 2020). These have resulted in radical changes in the lifestyle of people, in particular, a reduction in physical activity (PA) and exercise and an

increase in sedentary behaviours that compromise immune function and raise the risks for long-term health conditions (Alshammari et al., 2024; Dadswell et al., 2023; Sallis et al., 2020).

Recent cross-border investigations have revealed the profound impact of COVID-19 limits on people's PA (Alshammari et al., 2024; Bourdas & Zacharakis, 2020; Constandt et al., 2020; Corrado et al., 2020; Faulkner et al., 2020; Katewongsa et al., 2020; Mutz & Gerke, 2020; Richardson et al., 2020). The research also suggested that intensive restrictions on people's free movement and contact may reduce the risk of virus transmission in the community. However, a reduction in PA may trigger the development of other non-communicable diseases and, consequently, an increase in death rates (World Health Organization, 2002, 2018).

According to the World Health Organization (2018), PA refers to any bodily movement produced by skeletal muscles requiring energy expenditure. In contrast, exercise is a planned, structured, and repetitive subcategory to improve or maintain one or more components of physical fitness. World Health Organization (2022) recommends at least 150 minutes of moderate-intensity aerobic PA throughout the week for adults aged 18–64. This guideline suggests that an average daily exercise duration could reasonably approach one hour, particularly when considering days with more intensive activity sessions. This recommendation is based on extensive research indicating that regular PA provides numerous health benefits, such as improved muscular and cardiorespiratory fitness, better bone health, and a reduced risk of hypertension, coronary heart disease, stroke, diabetes, and certain cancers. PA also helps maintain a healthy weight, improves mental health by reducing symptoms of depression and anxiety, and enhances cognitive function and sleep quality (World Health Organization, 2022).

During the COVID-19 pandemic, the lockdown has intensely affected many people who regularly engage in fitness activities, particularly social interaction (Alshammari et al., 2024). However, studies show that PA is essential during the pandemic-induced lockdown as it improves immune function in chronic systemic inflammation and various diseases after COVID-19 vaccination (Silveira et al., 2021; Simpson et al., 2020). As such, monitoring PA during this critical period is of utmost importance.

COVID-19 Pandemic Waves in Vietnam

Vietnam has encountered four successive surges of the COVID-19 pandemic since the start of 2020 (Minh et al., 2021). The initial surge began on January 23, 2020, and persisted for 85 days until April 16, 2020, encompassing 100 community infection cases (Minh et al., 2021). Starting on April 1, 2020, social distancing measures were implemented nationwide for 15 days (An, 2020). The rigorous epidemic management measures produced favourable outcomes, with no local transmission reported in the country from mid-April to mid-June 2020 (Thoa, 2020).

The second wave, spanning 129 days from July 25 to December 1, 2020, consisted of 554 community cases of infection in Da Nang. This wave involved the same viral strain as the first wave (Minh et al., 2021).

The third wave of COVID-19, lasting 57 days from January 28 to March 25, 2021, occurred in Hai Duong province, resulting in 910 community cases (Minh et al., 2021). Despite the occurrence of numerous diseases, the majority of those afflicted were young and in good health. As a result, there were a limited number of severe instances and no recorded fatalities (Minh et al., 2021).

The fourth wave significantly trans-formed the situation from April 27 to

September 2021 (Minh et al., 2021). A novel cluster surfaced at the National Hospital of Tropical Diseases, with 42 confirmed cases documented on May 6, extending to 15 provinces (Linh, 2021; Binh, 2021). Ho Chi Minh City enforced a nocturnal curfew starting at 6:00 pm on July 26, 2021. This measure restricts citizens from exiting the city and permits only emergency services to remain operational (Mai & Le, 2021). This wave in Vietnam was characterised by its complexity and danger, resulting in the highest documented death toll. The thousands of community cases heavily strained the entire healthcare system. Vietnam has recorded 601,349 COVID-19 cases and 15,018 fatalities as of September 12, 2021. The case fatality rate was 2.50%, above the global average of 2.06% (Minh et al., 2021).

COVID-19 Impact on Physical Activities

The pandemic resulted in a considerable decline in overall PA levels across various population groups, significantly affecting public health. The global decrease in mild, moderate, vigorous, and overall PA is documented worldwide (Oliveira et al., 2022; Park et al., 2022; Tison et al., 2022; Wunsch et al., 2022). The decline can be attributed mainly to lockdown implementations, social distancing protocols, and the shutdown of fitness centres and recreational facilities. These measures have interrupted regular exercise regimens and restricted PA options (Do et al., 2022; Neville et al., 2022). Moreover, the rise in sedentary behaviours, such as extended periods of sitting, excessive screen time, and greater use of social media, worsened the decrease in PA (Rossi et al., 2021). Do et al. (2022) conducted a systematic review and found an overall reduction in youth PA and the significant impact of school closures on youth PA levels.

The reductions were observed across different types of PA, like walking, moderate, vigorous, and total activity levels (López-Valenciano et al., 2021). Device-based measures consistently showed declines in PA, though some self-report studies had mixed findings (Wunsch et al., 2022). Decreases were more pronounced for higher-intensity activities and outdoor sport or exercise participation due to facility closures and social distancing requirements (Neville et al., 2022; Yomoda & Kurita, 2021). Several reviews noted more considerable reductions in PA among specific subgroups, including older children/adolescents versus younger children, those from lower socioeconomic backgrounds, living in apartments/urban areas versus houses/rural areas, and females compared to males (Rossi et al., 2021; Wunsch et al., 2022; Yomoda & Kurita, 2021). In contrast, some studies found increased recreational outdoor activities like using parks/trails among specific populations during the pandemic (Park et al., 2022). However, the overwhelming evidence indicates that PA declined while sedentary behaviour increased for most groups across different countries and regions during the COVID-19 lockdowns and restrictions (Wilke et al., 2022). The specific genre of sport performed played a pivotal role in determining the magnitude of influence on PA levels during the epidemic. Team sports have significantly decreased in popularity due to limitations on group activities and the closure of sports facilities, often characterised by close physical contact and big gatherings (Yomoda & Kurita, 2021; Rossi et al., 2021).

Conversely, individual sports such as running, cycling, and home workouts were more popular due to their fair ease of exercise in compliance with social distancing regulations (López-Valenciano et al., 2021; Neville et al., 2022). These activities were flexible and easily exercised so people could maintain PA to enhance and protect their physical health during the pandemic (Park et al., 2022). During the pandemic, digital

solutions such as joining online exercise classes and using workout apps were crucial in ensuring PA maintenance (López-Valenciano et al., 2021; Neville et al., 2022). These digital technologies brought simple and available opportunities for individuals to participate in PA without leaving their homes. In addition, remote participation in online exercise sessions created favourable circumstances for social connection and motivation, minimising the impact of physical isolation due to social distancing regulations (López-Valenciano et al., 2021).

Furthermore, exercise apps provide customised training programs and progress tracking, enabling individuals to follow their fitness goals (Neville et al., 2022). The increasing adoption of digital intervention measures has emphasised the potential of technology in enhancing PA and the importance of developing user-friendly and attractive digital exercise solutions to enhance community health during and after the pandemic (Park et al., 2022).

The COVID-19 pandemic has significantly decreased PA levels among various population groups: children, youngsters, adults and elders. The PA reduction is primarily due to lockdowns, social distancing protocols, and the closure of fitness centres and recreational facilities. PA levels have declined across different activities, which is more reduction in higher-intensity activities and outdoor sports. The shift from group activities to solitary activities has also been observed, with individuals opting for individual activities like jogging, cycling, and home-based exercises. Digital interventions have become crucial in ensuring the continuation of PA, with online fitness classes and workout applications providing easy access to PA.

Reflecting on these findings from the literature, it becomes evident that while there is a wealth of data on global shifts in PA due to COVID-19, specific insights into how these shifts have played out within the Vietnamese context are sparse. The government of Vietnam implemented various policies, including social distancing and restricting economic activities, to prevent the epidemics from spreading (An, 2020; Mai & Le, 2021).

As such, this study aimed to investigate the effect of the COVID-19 pandemic on the PA of Vietnamese people with the following objectives: i) to delineate the changes in PA patterns among Vietnamese before and during the COVID-19 pandemic, ii) to investigate the types of PA adaptations preferred in Vietnam during the pandemic, and iii) to explore how socioeconomic status influences PA during the pandemic in Vietnam. This study is designed to provide empirical support to the impact of the COVID-19 pandemic on PA in Vietnam. By employing quantitative survey data, this research aims to offer insights into the adaptive behaviours of the Vietnamese population in maintaining physical health during prolonged periods of social restrictions.

Methodology

Study Design

This study used a web-based survey, considered suitable during the COVID-19 pandemic as it eliminated the risk of infection, saved time, and reduced data collection costs. By using online platforms, the research team was able to approach a wide range of communities. Some scholars have demonstrated the suitability of this approach in their studies (Choi & Bum, 2020; Katewongsa et al., 2020; Constant et al., 2020; Bourdais & Zacharakis, 2020; Corrado et al., 2020). One advantage of web-based surveys is the anonymity of participants, which helps protect their privacy and minimises researcher bias in data collection (Rhodes et al., 2003). However, online

respondents might consider unsolicited surveys an invasion of privacy (Andrews et al., 2003). Despite this, web-based surveys can appeal to specific sub-groups, such as the young and highly educated (Sheehan & Hoy, 1999; Witte et al., 2000).

Development of the Data-Gathering Tool

The questionnaires in this study were developed following the survey design stages proposed by Iarossi (2006). The first knowledge base period involved reviewing literature and research methods from existing investigations on COVID-19's impact on daily life and PA habits. After acquiring basic knowledge about the research field, a draft questionnaire was constructed in the first week of February 2021.

During the second experts' consultancy period, the research team consulted with sport experts and reviewed scholarly resources to gain deeper insights. The team examined the potential effects of the pandemic based on experts' experiences with the two previous COVID-19 waves.

In the third pilot period, from February 6 to 10, 2021, 25 people practising sports were tested on a trial version of the questionnaires. The testing aimed to evaluate the questionnaire's wording and discover additional variables. Based on the feedback from these small groups, modifications were made to better align the questionnaires with the research objectives.

The final version of the questionnaire was released online on February 13, 2021, during the Third Wave of the COVID-19 pandemic in Vietnam. At that time, provinces such as Quang Ninh, Hai Duong, Hanoi, and Ho Chi Minh City were under high pressure from the pandemic. Hai Duong implemented province-wide social distancing, while Ho Chi Minh blocked some areas where COVID-19-positive cases were reported. Hanoi ordered the closure of non-essential activities from February 2, 2021, to March 23, 2021.

The survey concluded on April 1, 2021, when several provinces lifted social distancing regulations. Hai Duong province, the most severely affected by the Third Wave, announced the end of its social distancing state and transitioned to a new normal situation. Major cities, namely Hanoi and Ho Chi Minh City, returned to regular operations a week earlier. The data collection generated 1,428 respondents; however, after cleaning the data, the final number of respondents totalled 627.

The questionnaire has three main parts: The first part includes demographic information of the respondents (age, sex, marital status, education, occupation, and income). The second part assessed the respondents' physical exercise habits before and during COVID-19 regarding PA frequency, measured by the number of days spent on PA, sport type, and participation modes. PA levels were reported in two stages: before and during the pandemic. To further examine differences in PA before and at the start of the COVID-19 crisis, we applied the classification of Mutz & Gerke (2020), generating four groups based on their levels of PA: (1) *inactive individuals*, (2) *reducers*, (3) *maintainers*, and (4) *intensifiers*. '*Inactive individuals*' did not participate in PA before and during the pandemic. '*Reducers*' have regularly participated in PA but significantly reduced their activities at the pandemic's start. '*Maintainers*' are respondents whose PA levels have remained as high as in the pre-pandemic period. '*Intensifiers*' have participated in more PA during the pandemic than before. Furthermore, the proportions of '*reducers*', '*maintainers*' and '*intensifiers*' were also analysed separately according to *age*, *gender*, *education level*, *marital status*, *income*, and *occupation*.

The authors carefully read all responses and developed a coding scheme for the three main groups of responses: (a) assertions

about PA that the respondent reduced or skipped during the pandemic; (b) assertions of activities that the respondent institutes, maintains or increases; and (c) assertions regarding specific contextual reasons and conditions for adaptation to PA. The responses were then coded according to the coding scheme ($\kappa = 0.77$), thus dividing the responses into 26 (sub)categories. After correcting the coding disagreements, the percentage of respondents with an open answer matched a particular response category was calculated, and the most prominent categories were identified. Therefore, one answer can fit multiple categories.

Ethical Considerations

This study was conducted with a commitment to upholding ethical standards and principles similar to those outlined in the Declaration of Helsinki, even though it did not undergo a formal review by an institutional review board. To ensure ethical conduct, all participants were provided comprehensive information about the study's purposes, procedures, potential risks, and benefits. They provided informed consent, acknowledging their understanding and right to withdraw from the study at any time without consequences. All collected data were anonymous to protect participant privacy and confidentiality. In addition, access to the data was restricted to the research team.

Study Hypotheses

In examining the impact of the COVID-19 pandemic on PA levels in Vietnam, this study applied general hypotheses proposed by Turhan (2020). In particular, two hypotheses for this study are developed as follows:

Hypothesis H0: There was no significant change in Vietnamese people's PA levels before and during the COVID-19 pandemic. This hypothesis assumes that restrictions related to the pandemic did not change the frequency or intensity of PA among studied participants.

Hypothesis H1: There was a significant change in PA levels of Vietnamese people before and during the COVID-19 pandemic. This alternative hypothesis implies that physical restrictions imposed during the pandemic, such as lockdowns and social distancing policies, significantly impacted the frequency or intensity of PA.

These hypotheses were tested using data collected through an online survey, focusing on various dimensions of PA, including type, frequency, and duration, before and during the pandemic. The chi-square test of independence was utilised to examine the correlation between demographic characteristics and changes in PA levels, thereby providing insights into how different population segments adjusted their PA behaviours in response to the pandemic.

Results

Table 1 shows the characteristics of the 627 respondents. Over half of respondents are under 25; the group of 36-45 accounts for the smallest fraction (20.1%). There are 339 female respondents, making up 54.07% of the survey population, and 288 male respondents, making up 45.93%. Stratified by marital status, 67.3% of participants are single, while 32.7% are married. Regarding respondents' education level, the vast proportion (83.73%) are at the undergraduate level or below; the rest hold master's degrees or higher qualifications. Roughly 51% of respondents are employed, and 36.9% are non-working. In terms of the respondent's income, the monthly income is divided into three categories: 'No income', 'Under VND 15 million', and 'VND 15 million and above', in which the percentage of 'Under VND 15 million' is the largest, over 51%. Most respondents live in Hanoi (305

respondents) and Ho Chi Minh City (160 respondents), making up 48.64% and 25.52% of the total respondents, respectively.

Table 1. Demographic characteristics of respondents (n = 627)

Characteristic		Number of respondents	Percentage
Age	Under 25	327	52.15
	26 - 35	174	27.75
	36 - 45	126	20.10
Gender	Male	288	45.93
	Female	339	54.07
Marital Status	Single	422	67.30
	Married	205	32.70
Education Level	Bachelor's & under	525	83.73
	Master's & above	102	16.27
Occupation	Non-working	231	36.90
	Self-employed	74	11.82
	Employed	321	51.28
Monthly income	No income	138	22.08
	Under 15mil	322	51.52
	15mil and above	165	26.40
Location	Hanoi City	305	48.64
	Ho Chi Minh City	160	25.52
	Others	162	25.84

The study results indicate a slight increase in PA during COVID-19 compared to the pre-pandemic period ($\chi 2 = 757.0725$; df = 7; p = 0). Figure 1 shows that overall, Vietnamese people adjusted their time spent on PA during the pandemic. Most notably, the percentage of people who increased their PA more than six days a week increased by 2.4%, from 6.1% before the pandemic to 8.5% during the pandemic. In contrast, the proportion of Vietnamese who did not participate in weekday PA changed dramatically, with a 4.5% decrease. Besides that, people who participated in PA 1 or 2 days before the pandemic remained slightly the same exercise time during the pandemic. Vietnamese people preferred doing exercises at the level of 3 days, with 25% and 26.5% before and during the pandemic, while at the level of 4-5 days a week, they had an enhancement of around 0.6% to 1%. The number of people exercising daily or seven days per week remained the same at approximately 6.7% to 6,9%.

The survey also shows that people have managed to maintain their exercise habits and have mixed reactions; some individuals even raised their time on PA (see Table 2). The percentage of Vietnamese inactive before and during the pandemic is 5.3%. The 26.8% belonged to the '*reducers*' who had slightly reduced the intensity of their time spent on PA or stopped exercising altogether. Another figure of 37.9% belonging to the '*maintainers*' represents their level of PA retention. Finally, 35.4% belonged to the

'*intensifiers*', a substantial increase in time spent on PA during the COVID-19 pandemic. Thus, while many people reduce their time spent on PA or choose to be inactive in response to containment measures, others can still maintain or increase their time spent on PA.

Table 2. The PA levels (%)

PA Level	Percentage	PA Level	Percentage
Inactive	5.3		
Active	94.7	Reducer	26.8
		Maintainer	37.9
		Intensifier	35.4
Total	100		

Table 3 features the Chi-square test results, showing that age, gender, income, and location are correlated with PA levels, with significance levels of 5%. The occupation is significantly associated with PA levels, with a significance level of 10%. Accordingly, differences in marital status and education are not revealed as determinants of changes in PA habits.

Table 3. Chi-square test results

Demographic characteristics	Pearson Chi-square estimated value	P Value
Age	10.2444	0.037
Gender	20.5829	0.000
Marital status	1.7834	0.410
Education level	1.2939	0.524
Occupation	7.8773	0.096
Income	15.1874	0.004
Location	14.2908	0.006

In the marital status criterion, Table 4 features no significant difference in assessing the level of regular exercise that both are concerned about doing exercises; only 5.7% of single people are inactive, while this figure for married is 4.4%. Notably, married people have a lower percentage of intensifiers than single people (31.6% and 37.2%), while the results are opposite with the group of reducers and maintainers. In addition, stratifying by education level, there is no significant difference in the group of reducers between the two levels of education. Bachelor or lower degree holders spend more time doing exercise during the epidemic, with 36.2% being intensifiers. The table also shows that the inactivity rate for non-income or non-working people is relatively high. Conversely, this rate is low for people with

incomes above 15 million or self-employed. The lowest percentage of income belongs to reducers with a level of over 15 million at about 23.5%, while in the occupation criterion, it is reducers with 22.2% of the employed.

Table 4. The PA levels during the pandemic, by marital status, education level, occupation, and monthly income (%)

Demographic characteristics		Total	Active			
		Inactive	Active	Reducers	Maintainers	Intensifiers
Marital status	Single	5.7	94.3	24.6	34.6	35.1
	Married	4.4	95.6	26.9	38.5	30.2
Educational level	Bachelor & under	5.0	95.0	25.4	35.2	34.4
	Master & higher	6.9	93.1	25.5	39.2	28.4
	Non-working	8.2	91.8	23.4	31.2	37.2
Occupation	Employed	2.7	97.3	21.6	48.7	27.0
	Self-employed	3.7	96.3	27.7	36.1	32.5
	No income	8.7	91.3	22.5	27.6	41.3
Income	Under 15mil	4.3	95.7	28.2	33.9	33.6
	Over 15mil	4.2	95.8	24.6	34.6	35.1

Responses to the open-ended question were content-analysed to provide multifaceted information on this issue and gain a deeper insight into Vietnamese people's adaptation to participating in PA during the COVID-19 pandemic. Table 5 shows the responses and categorisation by active, reducers, maintainers, and intensifiers. Running and martial arts are the two most popular PAs in the survey's sample. Due to COVID-19, the number of people participating in martial arts decreased the most, from 42.1% to 13,1% (down 29.0%), followed by badminton and football, with a decrease of 6.8% and 4.7%, respectively. Along with that, other creations also saw a slight reduction in the level of the active category. Contrary to the general decline trend of sports during the pandemic outbreak, yoga, gym, and indoor fitness saw a relative increase of 2.3% and 3.1%, respectively.

Table 5 also shows a decrease in almost all sports in the reducers' group. The most significant decline was in martial arts, with 42.8%. In general, running was a stable and long-term choice when the difference before and during the pandemic was ambiguous among the reducer, maintainer, and intensifier groups. The respondents tended to do home-based individual exercises such as yoga, gym, and indoor fitness. At the same

time, the maintainers and intensifiers remain the same or decrease in the sports required by the team players.

Table 5. Types of PA, by the change of PA levels before and during the pandemic (%)

Types of PA	Active		Reducers		Maintainers		Intensifiers	
	Before	During	Before	During	Before	During	Before	During
Football	13.2	8.5	16.4	7.5	16.0	10.7	10.0	8.1
Tennis	2.7	2.4	1.9	1.9	3.6	3.6	2.9	1.9
Basketball/ Volleyball	6.7	4.5	8.2	2.5	8.4	5.8	4.8	5.2
Billiards	2.6	1.8	1.9	0.6	3.6	2.2	2.4	2.4
Table Tennis	3.7	2.9	4.4	3.8	4.0	2.7	3.3	2.9
Badminton	10.5	3.7	15.1	5.0	11.6	3.6	7.6	3.3
Martial Arts	42.1	13.1	54.1	11.3	48.0	17.3	33.3	11.9
Aerobic	5.4	4.3	3.1	3.1	4.4	3.6	9.0	6.7
Golf	1.1	0.6	0.6	0.0	1.3	0.9	1.4	1.0
Bowling	0.8	0.5	0.6	0.0	1.3	0.9	0.5	0.5
Swimming	10.2	5.9	10.7	6.3	12.4	7.6	9.0	4.8
Gym & indoor fitness	30.6	33.7	36.5	27.0	34.7	38.2	26.7	39.0
Biking	11.5	11.8	12.6	13.2	11.6	9.3	12.4	15.2
Yoga	16.7	19.0	11.3	10.7	21.8	22.7	18.1	24.3
Running	42.1	41.3	54.1	43.4	48.0	46.2	33.3	41.0

Table 6 presents the participation mode before and during the pandemic. According to the survey, 'group size has not changed compared to pre-epidemic' and has remained at a stable level of 17.8%. Individual exercise was at a very high level, 74.3% of the intensifier group, during the outbreak. However, before the pandemic, individual exercise was also relatively high compared to other forms of exercise; it was similar to the findings in Table 3; in particular, individual sports such as running, martial arts, gyms, and indoor fitness had a high proportion of people exercising. On the other hand, results show that Vietnamese people do not like

group exercises (i.e., done in groups of 2 people, 3-6 people, over six people) before or after the pandemic. Under the group exercise, the number of reducers was low before and during the pandemic. Two-person PA is the most preferred form of group training compared to the other forms during the pandemic. Practising in small groups via video call sessions attracted only a few people.

Table 6. The PA participation mode by the PA levels (%)

Participation mode	Before the pandemic			During the pandemic		
	Reducer	Maintainer	Intensifier	Reducer	Maintainer	Intensifier
Total no physical activities	0.0	0.0	21.0	10.1	0.0	0.0
Unchanged group size compared to the pre-pandemic period	-	-	-	10.7	17.8	10.5
Individual exercise	46.5	59.1	53.3	56.6	68.9	74.3
Two-person physical activities	15.7	7.6	6.7	13.2	4.0	8.1
Small group physical activities via video calls	-	-	-	0.6	0.0	0.0
Online mode physical activities (learning via online channels, joining challenge contests, etc.)	21.4	18.2	9.5	2.5	5.8	1.9
Self-exercising and submitting track log to a private group	0.6	0.0	0.0	-	-	-
Small group size (3-6 people)	-	-	-	0.0	0.4	0.0
Big group size (over 6 people)	15.7	15.1	9.5	6.3	3.1	5.2

The supplementary material shows why people practised physical exercises during the pandemic. When asked, 'What are the reasons for your self-consciousness to change your practice habits?' Improving personal health is the reason people care most, with 74.9%, followed by reasons about 'regulation to wear proper masks, keep a safe distance, wash hands with sanitisers' and 'your job and income'. The most surprising thing is that the reason 'When exercising, the risk for COVID-19 infection increases' is not the reason people care the most; in other words, it seems that Vietnamese people changed their habits based on different factors such as government regulation, mass media, community judgement or their business income. Apart from that, many people believe that their participation in PA is greatly influenced by government regulations, sports teams, family members, and mass media.

The questions examining the conditions of practising PA during the pandemic revealed that a high proportion of respondents were concerned about the government's regulations. Specifically, the 'crowd gathering ban regulations' and 'wearing masks and hand sanitisers' influenced their decision to practice sports. These concerns outweighed other reasons such as 'no exercise equipment at home', 'closed gyms', or 'closed public parks and gardens.' Both 'no exercise equipment at home' and 'too small space at home' contributed to over 50% of the reducer group. The 'No online exercising guidelines' factor always had the lowest percentage in all three groups: reducer, maintainer, and intensifier, accounting for one-fifth to one-third of respondents. In other words, many Vietnamese people adapted to physical exercise with online exercising guidelines during the pandemic; unavailable guidelines also affected their practices.

Discussion

This study aimed to investigate the impact of the COVID-19 pandemic on PA levels and patterns among Vietnamese individuals, exploring their adaptations and the influence of socioeconomic factors. It also provided insights relevant to informing public health policies and interventions in the context of similar health crises.

The findings of this study indicated that the COVID-19 pandemic had significantly impacted the PA levels of Vietnamese people, therefore rejecting hypothesis H0 and supporting hypothesis H1. This is pertinent to the global trend reported in nations where pandemic-related constraints and lifestyle changes have impacted exercise patterns (Bourdas & Zacharakis, 2020; Constandt et al., 2020; Mutz & Gerke, 2020). The three main objectives discussed are as follows:

1. Changes in PA patterns among Vietnamese individuals before and during the COVID-19 pandemic

The study reveals significant changes in the PA patterns of Vietnamese people during the COVID-19 pandemic. While a significant portion (26.8%) encountered a decrease in their PA levels, a considerable percentage (35.4%) made efforts to increase their PA engagement. This observation underscores the resilience and flexibility displayed by individuals in upholding their exercise routines in the face of the obstacles brought about by the pandemic. Furthermore, the data indicates a slight overall increase in PA levels during the pandemic, contrary to the global decrease in PA (Mutz & Gerke, 2020). This new observation can be attributed to Vietnam's effective pandemic response strategies, such as a policy to enable safer participation in outdoor exercise activities that could be valuable during the pandemic.

2. Types of PA adaptations preferred in Vietnam during the pandemic

The study's findings reveal specific PA adaptation methods employed by the Vietnamese during the pandemic. In line with global trends (Kaur et al., 2020; Schnitzer et al., 2020), there was a significant increase in home exercises and digital PA platforms. Activities such as yoga and indoor workouts are increasingly popular, reflecting a shift towards solitary and indoor habits. Meanwhile, team sports and activities requiring infrastructure or equipment, such as martial arts, badminton, and soccer, had significantly declined. These observations align with the limitations imposed by social distancing measures and the closure of public facilities. Furthermore, the study emphasises the appearance of new forms of PA, such as small group practices through online guidance and self-reporting progress for virtual communities. This adjustment highlights the method that Vietnamese individuals employ to maintain PA while adhering to public health guidelines.

3. Impact of socioeconomic status on PA during the pandemic in Vietnam

The study results show that socioeconomic factors played an essential role in shaping PA behaviours during the pandemic in Vietnam. People with higher incomes were likelier to maintain or increase their PA levels, possibly due to greater access to online resources and separate spaces for exercising at home.

Conversely, lower-income groups faced significantly more challenges in maintaining their PA routines, which reflected disparities in access to resources and personal space, particularly in urban areas. These socioeconomic disparities are aligned with global observations (Corrado et al., 2020). However, their expressions were particularly transparent in the Vietnamese context due to the high urban density and the limitations in accessing the personal space of many households. This finding emphasises the need for targeted policies and interventions to address socioeconomic inequalities in promoting and creating favourable conditions for PA during public health emergencies. By addressing these research objectives, this study provides comprehensive insights into the changes in the PA models, suitable adaptations, and the impact of socioeconomic factors on exercise behaviour among the Vietnamese during the COVID-19 pandemic. These findings enhance global understanding of the pandemic's impact on PA and provide implications for public health policies and interventions related to PA in Vietnam.

Conclusion and Recommendations

Amid the rapid spread of COVID-19, which has significantly impacted all aspects of daily life, including PA, this small-scale online study reveals positive findings in Vietnam. According to survey results, most respondents continued to exercise during the COVID-19 outbreaks. Many active individuals, whether reducers, maintainers, or intensifiers, viewed PA as essential to improve health. This aligns with Katewongsa et al. (2020), who stated that PA can enhance the immune systems and reduce stress throughout the pandemic.

The findings reveal that survey participants adapted well to the challenges posed by the epidemic. The COVID-19 outbreaks and the government's policy responses interrupted and made sports participation challenging. A remarkable decrease in playing sports requiring social gatherings and specialised infrastructure and equipment, such as football, badminton, and martial arts, was observed. However, people maintain their sports habits by switching to other sports or doing different forms of exercise that are more suitable for this situation. In particular, the number of respondents doing yoga and gym and indoor

fitness increased sharply between the two stages of COVID-19. This result aligns with the study of Schnitzer et al. (2020), showing that many participants intensified home training instead of the practices of outdoor sports. Most respondents preferred individual training during the pandemic.

New forms of PA emerged, such as practising in small groups via video call and self-practising tracklogs to 10-person groups. Good compliance with regulations was a critical factor in maintaining exercise routines. Most people agreed that following the regulations on wearing masks, keeping distance, and sanitising hands is necessary, resulting in some concerns over being infected during exercise.

Despite its contributions to the knowledge base on PA during the pandemic, this study acknowledges its limitations. First, relying on self-reported data from an online survey may introduce bias, as responses can be influenced by individuals' perceptions or willingness to report accurately. Second, the survey's sample size and demographic reach may not fully represent the Vietnamese population, mainly rural or lower-income groups with less access to online platforms. Third, the study's cross-sectional design prevents inferring causality between observed behaviours and specific pandemic-related measures.

Future research should address these limitations by employing longitudinal study designs that can better track changes in PA over time and assess the causal impacts of specific public health measures during an emergency health crisis, such as the COVID-19 pandemic. In addition, other future research with larger sample sizes and wide ranges in terms of background, such as ethnicity, type of work, and location, would provide better findings. Ultimately, research with wearable devices could provide more real-time insights into PA behaviours.

In conclusion, the present study sheds light on the resilience and adaptability exhibited by Vietnamese individuals in upholding their levels of PA during the COVID-19 pandemic. It also underscores their capacity to confront obstacles and discover alternative methods to remain physically active despite the disruptions resulting from the crisis. Nevertheless, it highlights the importance of the ongoing investigation to comprehend the lasting impacts of global emergencies on public health habits. This comprehension is essential for formulating efficient interventions that advocate for and enhance PA, especially during periods of crisis. Decision-makers ought to consider these findings when formulating strategies that promote PA in a manner that is not only culturally sensitive but also adjustable to the distinct circumstances of the populace during emergencies. By integrating these perceptions into public health initiatives, policymakers can more effectively assist individuals in maintaining healthy behaviours in the face of unprecedented challenges such as the COVID-19 pandemic.

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Supplementary Material

Factors affecting respondents' decision to exercise (%)

Items	Statements	Total	Active	Inactive	Reducer	Maintainer	Intensifier
Reason	The more intense the pandemic is, the more the physical activities should be to enhance personal health	74.9	73.7	56.7	64.8	76.4	77.6
	When exercising, people need to wear proper masks, keep safe distance, wash hands with sanitisers	71.4	70.2	70.0	67.9	72.4	69.5
	When exercising, the risk for Covid-19 infection increases	17.5	17.5	33.3	16.4	22.2	13.3
	When exercising, your business may be affected if you are infected with the Covid-19	55.7	55.1	60.0	65.4	53.3	49.0
	When exercising, your job and income may be affected if you are infected with the Covid-19	57.1	56.4	53.3	65.4	54.2	51.9
	When exercising, your information may be spread on mass media if you are infected with the Covid-19	51.8	50.8	53.3	55.3	52.4	45.7
	When exercising, you may be judged by the community if you are infected with the Covid-19	46.1	46.0	46.7	52.8	44.0	42.9
Effect	Family influence	31.4	31.0	23.3	32.7	29.3	31.4
	Exercise peer influence	33.4	32.7	30.0	34.0	32.0	32.4
	Coach influence	20.3	20.5	13.3	21.4	21.3	19.0
	Closed community on social networks	23.7	23.9	30.0	18.9	22.2	29.5
	Open community on social networks	31.1	30.6	30.0	26.4	28.9	35.7
	Office coworker or leader influence	20.3	21.4	10.0	21.4	20.9	21.9
	Government regulation influence	35.9	35.5	23.3	44.7	34.7	29.5
	Mass media influence	29.7	29.6	16.7	28.9	30.2	29.5
	Commercial ads influence	19.6	19.7	6.7	20.8	19.1	19.5
	KOL, streamer, youtuber influence	25.8	25.8	16.7	20.1	27.6	28.1
Condition	Regulation related to wearing masks and hand sanitisers	57.4	56.4	26.7	57.9	60.0	51.4
	Crowd gathering ban regulations	69.3	68.5	56.7	76.7	68.4	62.4
	Travel distance to parks and gardens	44.9	44.3	26.7	48.4	43.1	42.4
	No exercise equipment at home	36.0	36.0	50.0	40.3	34.7	34.3
	Too small space at home	31.8	32.0	53.3	39.0	31.6	27.1
	No online exercising guidelines	21.7	21.2	30.0	22.6	20.9	20.5
	Closed gyms	36.0	35.7	40.0	44.7	36.9	27.6
	Closed public parks and gardens	35.2	34.7	43.3	42.1	33.3	30.5

COMMENTARIES

Concept Note

"Commentaries" in the context of ISS are succinct but perceptive papers that provide professional comments, in-depth analyses, or critical appraisals of articles published in the journal. These comments play a vital role in the scholarly discourse by offering other levels of comprehension and interpretation of the original research. The main goal of these commentaries is to provide a more in-depth comprehension of the original article's content. Commentaries have the potential to increase the accessibility of the original study by clarifying complex concepts and emphasising significant discoveries to a wider audience. They also frequently highlight the research's wider ramifications, discussing how the results might affect further research, the formulation of policy, or real-world applications in the subject. Commentaries also offer fresh ideas, refuting established beliefs or putting forth different theories and approaches. This vital interaction encourages researchers to have lively, continuous conversations that advance their understanding and help them refine their concepts. Commentaries can spark new avenues of investigation and lead to breakthroughs in the subject by generating debate and discussion. These essays are usually written by academics, professionals, or specialists who have a great deal of experience and understanding of the topic of the remark. Their knowledge enables them to offer insightful comments and criticisms that improve comprehension of the original research. The authors' qualifications and reputations give their analyses additional weight, which increases the academic community's esteem and influence for their contributions. To sum up, comments published in the ISS journal are essential for enhancing scholarly discussions since they provide knowledgeable viewpoints, in-depth research, and helpful criticism. They eventually aid in the growth of knowledge in the field by bridging the gap between intricate research findings and their theoretical or practical implications.

The Official Journal of International Society for
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COMMENTARY 1

An International Survey of Sports Coaches' Knowledge, Understanding, and Definitions of Physical Literacy

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Abstract

Physical literacy (PL) has always been seen as a valued goal of sports, whether it is the school physical education curriculum, sports training, or mass sports. However, definitions of specific kernels of PL can be di different. As early as the 1980s, the term PL entered the field of British sports research, spreading to Europe, North America, and further afield (Bailey, 2020). In the present article, the authors offer an in-depth discussion of the phrase. At that time, the article analyses PL at the level of sports philosophy. It comprehensively assessed the complex concept through literature collection and expert opinions.

While this article used a version of an interview method, it also attempted to clarify and refine the concept of PL beyond accounts like "exercise ability," "health promotion exercise," and aspects of phenomenology. At the same time, it also uses interview subjects brought into the public's view from the perspective of professional practitioners for PL concerns. The Leximancer semantic software analyses the responses' content processing about the PL three-layer network meaning model, which can be more intuitive under practical use. The uses of the phrase PL here focus on different areas and regions between various subsets. It gives a new practical and theoretical reference value for future research on PL. In addition, the paper contributes to understanding the development of basic motor skills and highlights the need for more serious consideration of the relationship between PL and academic theory.

However, this study also has shortcomings. In the sampling approach, the coaches are selected using a convenience sampling form, and most of them are football coaches, so the obtained data have a specific direction or particularity. Future studies must address this and include coaches from other sports.

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COMMENTARY 2

An International Survey of Sports Coaches' Knowledge, Understanding, and Definitions of Physical Literacy

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The article 'An International Survey of Sports Coaches' Knowledge, Understanding, and Definitions of Physical Literacy' focuses on sports coaches' perspectives on physical literacy, but this focus has been limited. While physical literacy has garnered significant attention in international policy, advocacy, and practice discourses, much of the research has traditionally focused on physical education, public health, and child development. As stakeholders in the discussion of physical literacy, coaches have often been forgotten voices, yet they are vital to continuing the notion of physical literacy for life. The concept of lifelong and life-wide physical activity and movement has been most recently proposed by Jess et al. (2023; 2024) through their idea of 'Physical Education is for Life' (PEL), and everyone experiences it in their unique way, yet Physical Education remaining the connective catalyst.

The authors may appear highly critical, contested, and controversial regarding the definitions, scope, and assessment of physical literacy research within their analysis. They highlight the pragmatics of coaches, the use of PL, and how it is lacking within grassroots clubs, where it does not appear relevant in terms of meaningful conversations. They do suggest that the concepts coaches focused on were mainly 'movement,' 'physical,' and 'activity' and appear to be at odds with previous academic theories (Almond, 2013; ILPA, 2017; Whitehead, 2019), indicating that it might be unattainable to have a unified conception of physical literacy. Yet, it could be anticipated that the language within physical literacy discussions is changing. In the recent Sport England consensus statement (2023), a collective process informed by various perspectives derives very similar focuses of physical literacy, such as 'movement' and 'physical activity' for life, as the key messages. There has been a move away from coordination, control, need, and efficiency concepts.

Perhaps from now on, in 2024, and in future work, we need to accept that there is a 'multiverse' of physical literacies and that discussions that are almost in 'different dimensions' are okay. Maybe we should talk about physical literacy in this wide range of ways without soloing ourselves and listening to the quieter voices. This would enable us to continue embracing the next generation of learners and offer a wide range of movement opportunities so that the movers can be engaged in physical activities for life, as this is ultimately our goal.

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COMMENTARY 3

An International Survey of Sports Coaches' Knowledge, Understanding, and Definitions of Physical Literacy

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Jarvis, A. (2024). Commentary 3: An international survey of sports coaches' knowledge, understanding, and definitions of physical literacy. *International Sports Studies*, *46*(1), 109-110, https://doi.org/10.69665/iss.v46i1.30

If this article has a subtext, it is that what Kubota (2023) describes as a disconnect between academic research and the world upon which it seeks to shed light remains – at least as far as the social sciences are concerned. The gist of its argument is that among sports coaches, there is little consensus around what is meant by the – admittedly contested – term 'physical literacy.' Its prominence in discourse and policy around physical education, especially as a means to bring together disparate disciplines, has seen it acquire many features of a 'grand unified theory' yet remains conceptually elusive. For many, it denotes little more than physical or, more specifically, sporting skill. It is thus closely aligned with deftness of movement. However, the focus is on 'physical' rather than 'literacy,' or, to put the same point, the pragmatic, not the academic.

The authors demonstrate this by conducting a structured literature review of pre-existing studies that serves mainly to underline how muddled past thinking on the matter has been. Their work, an extensive qualitative survey of practitioners with content analysis, adds further to this impression, finding no obvious agreement among participants apart from an emphasis on activity. Quotations from some of the responses indicate an awareness that physical literacy is, on some levels, about 'understanding,' but it is never fully developed; the majority still argue for a version of the concept that positions 'literacy' as a close synonym for 'adeptness,' usually of the acquired variety. Unsurprisingly, the authors somewhat despairingly declare that a settled definition is neither possible nor necessary!

The issue that this article could, in truth, more clearly address is the lack of precision around the word 'literacy.' As Alber and Kolbl (2023) point out, it is, in its basic form, the capacity to read and write and the various cognitive processes so entailed; in relation to movement and physicality, it is used metaphorically. Perhaps the correct approach to untangling what the phrase means might be to unpack the metaphor and consider its implications. Indeed, whether it refers to an un-self-consciously engaged-in activity or a more rational predisposition towards activity remains unresolved; this is not a question asked, much less answered, by the practice-orientated participants reported upon here.

Were it to be more central, definitions would be located in purely academic and conceptual realms, and that would take the conversation far from this article's basic premises, which seem to be that physical literacy as a concept defies definition largely because those to whom finding one is most obviously relevant – sports coaches – do not deem doing so worth the effort. It is not that they do not care. They insist that physical literacy is salient in their work. Still, the organisations

they belong to generally have scant knowledge of it, which entails no major consequences for them as individuals. The upshot is that, in line with the findings of Young et al. (2022), physical literacy is something of a gestalt phenomenon, some parts of which are of relevance to policy-makers, others to academics, and still others to those such as the participants in this study, who operate in the world in which it is most noticeably manifested.

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COMMENTARY 4

An International Survey of Sports Coaches' Knowledge, Understanding, and Definitions of Physical Literacy

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Recommended Citation:

Nair, U. S. (2024). Commentary 4: An international survey of sports coaches' knowledge, understanding, and definitions of physical literacy. *International Sports Studies*, *46*(1), 111-112, https://doi.org/10.69665/iss.v46i1.30

The burgeoning concept of Physical Literacy (PL) has emerged as a central focus within the realms of health and physical education over the past decade, encapsulating the holistic development of individuals. Whitehead (2013) defines it as "the motivation, confidence, physical competence, knowledge, and understanding to value and take responsibility for engagement in physical activities for life." This comprehensive concept has transcended disciplinary boundaries, garnering attention from diverse sectors on a global scale. In this ever-evolving discourse, sports coaching plays centre stage as a pivotal component in an individual's journey towards physical literacy. Recognised by influential organisations such as the Youth Sport Trust in the UK and Canadian Sport for Life, coaching is vital in fostering physical literacy throughout one's life. Despite previous studies exploring potential connections between PL and coaching, empirical evidence remains scarce, with only one case study by Sullivan et al. (2010) highlighting the significant influence of PL knowledge on coaching practices. Against this backdrop, this commentary aims to navigate the intricate landscape of physical literacy, focusing specifically on its relationship with sports coaching. By critically examining existing definitions, we aim to unveil potential discrepancies that have shaped the current discourse. As we invite readers to embark on this journey, we aim to unravel the complexities surrounding physical literacy, address lingering questions, and collectively pave the way for a more integrated and enriched research and practice environment. Through this exploration, we aspire to contribute to a deeper understanding of the interplay between physical literacy and sports coaching, fostering a collaborative approach that benefits all stakeholders.

This study endeavoured to illuminate the multifaceted landscape of physical literacy as perceived by sports coaches worldwide. The methodology involved a comprehensive exploration of the knowledge, understanding, and personal definitions held by a diverse cohort of 521 sports coaches from 37 countries. To ensure the robustness and impartiality of our findings, researchers employed the innovative 'Leximancer' semantic software to analyse the collected data qualitatively. This sophisticated tool facilitated a nuanced examination of the coaches' narratives, transcending linguistic barriers and cultural nuances to distil the essence of their insights. By leveraging Leximancer, they aimed to go beyond surface-level interpretations, delving into the underlying semantic structures that encapsulate the diverse array of meanings attributed to physical literacy by coaches across the globe. The analysis showcased a unanimous emphasis on fundamental concepts such as 'movement,' 'physical,' and 'activity,' where relevance scores soared to an impressive 100%. The ubiquity of these concepts reinforces the centrality of dynamic

movement and physical engagement in the coaches' conceptualisation of physical literacy. Notably, 'coordination,' 'need,' 'control,' and 'efficiently' emerged with relevance scores at 8% and 6%, suggesting a relatively lower prominence in coaches' articulation of physical literacy. The most striking revelation emanates from the observation that the dominant accounts of physical literacy within the diverse sample gravitated towards movement skills and sports. The coaches' prioritisation of movement skills and sports reflects a pragmatic and context-specific lens through which they view physical literacy, diverging from the broader theoretical frameworks encompassing a more comprehensive spectrum of factors. These results prompt contemplation on the implications for both practical applications and theoretical underpinnings within sports coaching and physical literacy. As we navigate these diverse perspectives, it becomes evident that the global community of sports coaches strongly emphasises the tangible and observable aspects of physical literacy, thereby shaping the discourse in a manner that aligns closely with the practical demands of their profession. This incongruity between academic theories and coaches' perspectives serves as a thought-provoking foundation for further exploration and dialogue within the evolving field of physical literacy.

In conclusion, this study presents a novel exploration of sports coaches' perspectives on physical literacy, employing a text analysis methodology to mitigate biases and enhance the robustness of findings. As revealed through the international survey, coaches' prioritisation of movement skills and sports diverges from influential academic theories advocating for broader, multi-factorial constructs. The results underscore a pragmatic and context-specific lens through which coaches perceive physical literacy, emphasising tangible and observable aspects over comprehensive theoretical frameworks. Importantly, these findings challenge the feasibility and necessity of standardising physical literacy definitions, suggesting that embracing the diversity of interpretations within the sports coaching community is a more pragmatic approach. This study serves as a catalyst for ongoing discussions, urging flexibility and inclusivity in defining and understanding physical literacy within the dynamic landscape of sports coaching. In summary, the key points highlight the uniqueness of this study’s approach, the specific emphasis on movement skills and sports, and the call for a more nuanced and inclusive dialogue within the field.

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COMMENTARY 5

An International Survey of Sports Coaches' Knowledge, Understanding, and Definitions of Physical Literacy

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Peek, I. (2024). Commentary 5: An international survey of sports coaches' knowledge, understanding, and definitions of physical literacy. *International Sports Studies*, *46*(1), 113-114, https://doi.org/10.69665/iss.v46i1.30

A recent enquiry into, 'What is physical literacy'? has provided contradictory theoretical and practical answers. In this study, using Leximancer semantic software to analyse qualitative data, the authors found sports coaches understand PL as a physical framework created largely by the component parts of 'movement', 'sport', 'physical', 'skills', 'activity' and 'ability'. While commentators agree that physical literacy is a product of various factors, the question of how it is defined and produced has provided differing viewpoints. This study suggests that sports coaches understand PL as the manifestation of an agent's physical capabilities. Furthermore, their understanding of PL production does not extend to recognising the impact of cognitive factors like motivation, confidence, and self-responsibility.

The quality of coaching available to the agent is viewed as an important factor in the development of their PL. The authors of this study must be congratulated for the sports coach lens adopted for this study. Nevertheless, one must cast a critical gaze upon the value of the cohort for several reasons:

Over 40% of the cohort identified themselves as volunteer coaches. With physical literacy being a relatively new and potentially challenging construct, was their inclusion in this study beneficial to its findings? Is it fair to expect volunteer coaches to identify physical literacy as distinctly different from motor skill development without specific training in physical literacy development?

In addition to the inclusion of volunteer coaches, there were no further quality-control measures regarding the experience or qualifications of the other coaches involved. Only 60% of the cohort explicitly responded to the request: "*Please define/describe Physical Literacy as if you were explaining it to a parent of a child you coach*". Does this answer rate indicate that 40% of those involved in the study have no tangible concept of physical literacy?

In building on this study, future research could insist on more participant information regarding their coaching experience and qualifications. This information could help the researchers create a taxonomy of sports coaches and physical literacy: who knows what. This, in turn, could guide physical literacy education in sports coaching. The multi-layered aspects of physical literacy, as posited by Whitehead (2019) and Young et al. (2022), have not yet been recognised by coaches, and, as such, physical literacy remains a synonym for motor skill development, but not more than that. If literacy means knowledge, it seems coaches, thus far, lack the knowledge to understand the nuances of physical literacy.

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COMMENTARY 6

An International Survey of Sports Coaches' Knowledge, Understanding, and Definitions of Physical Literacy

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Recommended Citation:

Ren, C. & Chen, X. (2024). Commentary 6: An international survey of sports coaches' knowledge, understanding, and definitions of physical literacy. *International Sports Studies*, *46*(1), 115-116, https://doi.org/10.69665/iss.v46i1.30

This manuscript presents a pioneering study on sports coaches' perspectives on physical literacy (PL), incorporating global insights. By employing Leximancer to analyse qualitative data, this study gathers insights from 521 sports coaches spanning 37 countries, delving into their understanding, knowledge, and personal definitions of PL. This methodological approach is particularly noteworthy for its ability to minimise bias and ensure a more objective analysis of the collected qualitative data. However, considering the validation of the results, it is better to select coaches with over five years of teaching experience. This will call for more precise definitions of 'potential participants' to aid comprehension. Besides, the study's gender representation among experts, with only 18% females, fails to reflect the industry's diversity. The participant pool's geographic distribution and the overrepresentation of football as a primary sport suggest a need for a more balanced selection in Tables 2 and 3. Besides, the significance of specific numerical data, such as the mention of the statistic '307' in the section of 3.2 content analysis findings, requires clarification, especially given the presence of other statistics in the methodology section.

The research methods of this study, particularly the reliance on self-reported data through an online survey and a convenience sampling strategy, raise concerns about the accuracy and representativeness of the findings, potentially leading to response bias, where the coaches' answers might not accurately reflect their true perceptions due to the subjective nature of self-reporting. Consequently, these limitations indicate a necessity for a more thorough qualitative analysis to fully explore the research questions and substantiate the findings presented in this study. In addition, this study provides a summary of the research identified in this area. Yet, the reliability of this summary may be subjective since the authors have not presented the selection criteria or methodologies used for including these studies. This omission raises concerns about the systematic approach to data aggregation and the potential for bias in the representation of existing knowledge on PL among sports coaches. Ensuring transparency in the selection process and methodological rigour is crucial for the credibility and usefulness of such summaries in advancing our understanding of PL within the sports coaching context. At the conclusion of this article, the authors indicated that it is essential to discover what people in the field believe about PL and how they view its importance in specific settings. However, the article does not provide an overview of how these diverse viewpoints influence coaching practices or other related activities.

In conclusion, while the paper introduces a new viewpoint on PL, linking it closely with fundamental movement skills development, its overall contribution still needs to be clarified. Future research could critically examine how different conceptualisations of PL influence coaching methodologies, athlete development, or the integration of PL into physical education curriculums. Specifically, investigating how the comprehensive, multi-dimensional definition of PL influences coaching success and athlete achievements could yield significant insights.

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COMMENTARY 7

An International Survey of Sports Coaches' Knowledge, Understanding, and Definitions of Physical Literacy

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Ries, F. (2024). Commentary 7: An international survey of sports coaches' knowledge, understanding, and definitions of physical literacy. *International Sports Studies, 46*(1), 117-118, https://doi.org/10.69665/iss.v46i1.30

Physical inactivity has become a worldwide problem with a direct influence on the health and well-being of citizens. Thus, physical literacy is becoming an increasingly important part of an individual's lifelong learning process. Regrettably, a proliferation of studies of definitions for physical literacy has been observed in recent years without being able to unify the diversity of usages of the term (Durden-Myers et al., 2022; Mendoza-Muñoz et al., 2022). Some researchers, including the authors of the study, identify a vital challenge here and advocate for the operationalisation of physical literacy and the generation of distinct, testable models that will help determine what physical literacy is and how it works (Bailey et al., 2023).

In this comprehensive 'first-of-its-kind' international survey, the authors launch an innovative and novel approach by focusing on the context of sports coaches from 37 countries and their perspectives by investigating their knowledge, understanding, and individual definitions of physical literacy. Using a text analysis approach (Leximancer semantic software) to explore the coaches' perspectives is considered an additional strength of the article and is appropriate for moderating partiality. The article adds essential knowledge to the field of physical literacy. It offers new possibilities for future research by covering "blank spots" (Carl et al., 2023), which have, to our understanding, the potential to further enhance both scholarly discussions and practical applications of physical literacy. However, many football (soccer) coaches might have prejudiced the interpretation of the results. Keeping the sample in balance concerning the sports coached by the participants could have avoided the direction of the perceptions towards physical characteristics.

Concerning the different definitions and perspectives of physical literacy, it is crucial to open a dialogue to increase the knowledge of different stakeholder groups' perceptions (i.e., sports coaches in this article) rather than seeking an agreement for a unique definition of physical literacy. Different perspectives may move forward the research and discussions on physical literacy, benefitting all parts. Thus, surveying and analysing the knowledge and understanding of physical literacy among various stakeholders will be essential to advance this field. New research efforts will still be required to clarify effective monitoring and defining procedures to better understand the physical literacy journey. In any case, stakeholders should prioritise it for community recreation organisations, education, fitness associations, national sports federations, health care and medical providers, public health agencies and foundations, parents, policy-makers, and civic leaders. The potential practical applications point to physical literacy's important role in coaching

activities. More attention should be paid to developing athletes' physical literacy, including delivering knowledge of physical literacy concepts. Moreover, as the main stakeholders of athletes during coaching, coaches should combine coaching with the concept of physical literacy or embed physical literacy concepts into their coaching practice.

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COMMENTARY 8

An International Survey of Sports Coaches' Knowledge, Understanding, and Definitions of Physical Literacy

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Yu, Y. (2024). Commentary 8: An international survey of sports coaches' knowledge, understanding, and definitions of physical literacy. *International Sports Studies, 46*(1), 119-121, https://doi.org/10.69665/iss.v46i1.30

Physical literacy (PL) has surged in popularity in recent years (Corbin, 2020), gaining widespread acceptance across numerous countries and evolving into a central focus within the realms of physical education, physical activities, and sports promotion (Bailey, 2023). Scholars are increasingly drawn to the exploration of physical literacy from philosophical, conceptual, and practical viewpoints (Brown & Whittle, 2021; Young et al., 2020; Elsborg, 2023). Nonetheless, the ongoing debate surrounding physical literacy's definition and fundamental concepts persists in research and practical applications (Shearer et al., 2018; Keegan et al., 2017). Consequently, a comprehensive examination of physical literacy from diverse perspectives holds substantial theoretical and practical significance.

This study employs an appropriate research methodology. The Leximancer text analysis software is adopted to analyse the conceptual content of the collected data automatically and qualitatively. PL themes and their concepts are generated automatically based on the relationship levels among PL concepts and the proximity rate between concepts and critical terms in the document. It enhances the discovery of latent associations and patterns related to PL that are hidden in the text. It also presents PL concepts and themes in a graphical and reader-friendly format.

Additionally, this approach delves deeper into mining data information by building upon an understanding of the global structure suitable for various contexts. Through this approach, researchers have conducted a more in-depth analysis of PL. Readers can also gain a more intuitive understanding of the conceptual scope of PL in the study. While scholars have previously employed similar methods to study PL (Hyndman & Pill, 2018), this research makes a breakthrough in the sample selection. It primarily focuses on sports coaches, providing a more practical insight into understanding the PL concept among sports practitioners.

The research conclusions are innovative. Previous studies on PL were primarily associated with notions such as education, activities, fitness, health, abilities, understanding, roles, curriculum, and assessment (Kirk, 2013; Tristani, 2014; Dudley et al., 2017). However, this paper puts emphasis on motor skills and physical activities. Although this definition of PL diverges from some recognised concepts, like Whitehead (2019) that defined PL as the "motivation, confidence, physical competence, knowledge and understanding to value and take responsibility for engaging in physical activities for life", it prioritises bodily movements, focusing on the physical aspect, making it more closely related to everyday life. This focus on the physical aspect gives it stronger practical value, particularly in the context of sports coaching, enabling a better grasp of the core

concepts of PL. As Bailey (2020) mentioned, categorising PL into different camps may impose constraints on the capacity to deduce meaningful conclusions concerning efficient implementation. However, it can also serve as a source for creative and innovative discourse, guiding the field towards maturation. There are also some questions that need to be addressed. The sample selected for this study was predominantly comprised of sports coaches representing individuals from private capacities and national federations. This resulted in different levels of awareness of the concept of PL among the participants' colleagues and organisers. While this approach allows for the introduction of the PL concept from a fresh perspective, it falls short of providing a comprehensive definition of PL. Additionally, these coaches show a clear bias in the distribution of sports disciplines. Therefore, there is room to expand the sample size to improve the breadth and depth of the PL concept.

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Message from the ISCPES President

Prof. Rosa López de D'Amico, Ph.D.

It gives me great pleasure to present the inaugural issue of the International Sports Studies (ISS) publication as a fully open-access journal starting in 2024. The journal has come a long way since its first distribution in 1979. Together with this significant development, we welcome Prof. Dr Richard Bailey, who joins as co-editor of the ISS. Prof. Richard Peter Bailey, FRSA, is Deputy Dean, Head of Research, and Full Professor in the Faculty of Social Sciences and Liberal Arts at UCSI University in Malaysia. He is also Deputy Director of the Center of Research for Mental Health and Wellbeing in Kuala Lumpur. Additionally, he is listed among Stanford University's top scientists in the world for Clinical Medicine, Sport Sciences, and Education. Allow me to thank you for accepting the challenge of joining our Chief Editor, Dr Maria Luisa Guinto, in this new phase of the ISS journal. Welcome to the team! Scholarly publishing is a challenging path, but we hope that by working together, we can continue providing a suitable platform for scholars worldwide to publish their work in Physical Education and sports. My gratitude extends to those supporting the editorial team, from among the previous and new team members, particularly Dr Klaudia Rafael, who remains the ISS Associate Editor.

Another important piece of news is the agreement with the Routledge publishing house regarding approval of the continued publication of the ISCPES Book Series. The series was actively circulated between 1999 and 2003, yet the books are still in demand. With this agreement, the book series will continue with new titles, aiming to systematically extend knowledge of relevant issues, themes, and topics. The over-riding aim is to facilitate more profound awareness and understanding of physical education and sport across various socio-cultural, geographical, political, and thematic contexts. Each volume will focus on a thematic issue in different national or regional political entity settings. Each text can be used separately or to form an integrated basis for informed comparisons of thematic topics. This initiative contributes to critical awareness and analysis amongst confirmed and potential comparativists and young scholars at under- and post-graduate levels. Concomitantly, they will provide authentic materials for critical comparisons and test the generality of statements about common development patterns and issues in sport and physical education across different cultures. Another essential and distinctive feature of the book series is positioning the discourse on the problems and themes from a genuinely international perspective. As such, we can go beyond traditional mainstream literature and expand the knowledge generation to include local academics, incorporating underrepresented voices, expanding potential readership, and providing a sound and informed basis for critical comparative, transnational, and cross-cultural understanding.

Two projects have already been approved for publication, one in late 2024 and the other in 2025. Dr Walter Ho leads the first one, *Quality Physical Education (QPE) and Global Practice.* Dr Usha Nair heads the second one, *Physical Education in India: Exploring Tradition, Development, and Contemporary Perspectives*. We look forward to these publications as we continue

to work on various research projects for future publications.

I wish to echo the Society on the call of expression for bidding to the 23rd Biennial ISCPES congress that will take place in late 2025. For more details, please contact any of our board members. Finally, I invite you to submit your papers to the ISS journal. Let's spread the word about the continuous work of volunteers who dedicate their efforts to providing a quality publication for scholars in physical education and sport.

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