

PHYSICAL ACTIVITY

Comprehensive School Physical Activity Programming in Dubai International Schools: A Mixed Methods Study

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Abstract

The purpose of this study was to examine comprehensive school physical activity program (CSPAP) policies and practices in international schools in Dubai, the United Arab Emirates. Following an explanatory-sequential mixed-methods research design, the researchers employed the Comprehensive School Physical Activity Program Policies and Practices Questionnaire (CSPAP-Q) and follow-up interviews to describe CSPAP implementation and explore implementation enablers and challenges. A convenience sample of physical education teachers (N=18) participated in the questionnaire, and seven of these teachers participated in individual interviews. Teachers' responses to the questionnaire indicated considerable heterogeneity and numerous gaps in existing school-based physical activity opportunities and promotion

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efforts. Interviews revealed three themes related to CSPAP implementation: (a) time constraints in secondary schools, (b) facilities, and (c) location. This study provides an initial glimpse into whole-of-school physical activity programming in Dubai international schools.

Introduction

Participation in physical activity (PA) has many well-documented health-related, developmental, and academic benefits for children and adolescents (Poitras et al., 2016). The World Health Organization (WHO, 2010) recommends that school-age youth accumulate at least 60 minutes of mostly moderate-to-vigorous PA (MVPA) daily. However, most youth around the world do not meet this guideline (Cooper et al., 2015). According to the WHO (2010), 78.4% of boys and 84.4% of girls were classed as physically inactive.

Schools are a key setting for promoting physically active behavior. Rush et al. (2012) report young people in developed countries spend six to eight hours per day at school. In this context, Ni Chróinín et al. (2012) propose schools are key sites where young people can be active, learn how to be active, and develop an understanding of how important it is to have PA in their lives. To maximize school-based PA promotion, a “whole-of-school” approach is recommended: This involves the participation and support of multiple stakeholders including school staff, families, and community partners (Daly-Smith et al., 2020). Several countries, such as Australia, Finland, Ireland, and the United States, have implemented whole-of-school initiatives to promote youth PA (McMullen et al., 2015).

Comprehensive School Physical Activity Program Framework

The comprehensive school physical activity program (CSPAP) framework in the U.S. has gained particular attention in research as a primary example of the application of a whole-of-school approach to PA promotion (Webster, 2022). Currently, the U.S. Centers for Disease Control and Prevention (CDC) uses a CSPAP as the national framework for school-based physical education (PE) and physical activity (CDC, 2019). A CSPAP is envisioned to include multiple components operating in cooperation to ensure all youth attending a given school, accumulate 60 minutes of PA daily, and in so do-

ing they begin to develop the knowledge, skills, and confidence to pursue a physically active lifestyle (Society of Health and Physical Educators [SHAPE] America, 2015). The components of a CSPAP encompass quality physical education (PE), other PA opportunities, and the implementation support system for the program (Webster, 2022).

Quality PE

The foundational component of any CSPAP is quality PE. A primary and critical focus is on providing students with meaningful learning experiences that translate into a lifetime engagement in PA. SHAPE America (2015) created a guidance document to guide U.S. schools in the provision of quality PE. This publication identifies the essential components of PE as (a) meeting the needs of all students, (b) keeping students active during most of the PE lesson, (c) teaching self-management skills to students, (d) emphasizing knowledge and skills for PA, and (e) providing an enjoyable experience for all students. To create this environment, SHAPE America (2015) recommends that schools work around four pillars: policy and environment, curriculum, appropriate instruction, and student assessment. A well-defined policy helps create an environment that ensures all students receive PE, clearly defining each student's outcomes. The curriculum provides schools with clear guidance regarding expected outcomes within PE programs. Appropriate instruction involves considering the diverse developmental levels that students in all grades will exhibit. Finally, assessment should entail gathering evidence about students' achievements and making inferences regarding student progress based on available evidence.

Other PA Opportunities

Beyond PE, schools may provide additional PA opportunities during the day and/or outside school hours (before/after school). These expanded PA opportunities are intended to reinforce PE and provide supplemental PA experiences for youth (Webster et al., 2020). Opportunities for PA during school involve integrating or maximizing PA at other times of the school day. Classroom-based PA can increase students' PA, reduce sedentary behavior, and support numerous other outcomes, including academic achievement (Webster et al., 2015). PA promotion at recess, during lunch, or at

other break periods during the school day are additional evidence-based strategies for increasing students' PA during school (Huberty et al., 2011; Wang et al., 2005). Outside of school hours, Beets et al. (2009) indicate that a successful before and after-school program has the potential to increase students' daily PA by up to 13%. Active travel to and from school is another before and after-school PA opportunity for students, where permissible. In a cohort study, students who actively commuted to school accrued more minutes of PA than students who used motorized transport (Zhang et al., 2020). Although there were no differences in total daily PA between active and passive commuters, active travel may be viewed as an important strategy that can be combined with other opportunities to help children and adolescents meet PA guidelines.

Implementation Support System.

A CSPAP's implementation support system aims to generate collaboration and cooperation to leverage and sustain implementation efforts. This system incorporates the involvement of all school staff as well as family and community engagement (Webster et al., 2020). Implementing a CSPAP should not be viewed solely as a PE teacher's domain. Deslatte and Carson (2014) report that for a CSPAP to be fully effective, buy-in is needed from administrators, teachers, and other school staff. According to Beets et al. (2016), when staff receive training for PA promotion, they are more likely to feel personally competent in this role. Family and community engagement are also deemed critical to successfully implementing this initiative. Schools are often viewed as the hub of many communities, given their connection to the communities they serve. For a school to provide a successful CSPAP, a collaborative effort must be put in place between schools and local community groups, as well as partnerships. Van Sluijs et al. (2007) refer to numerous studies that reveal how families, communities, and schools, when working together, positively impact students' PA levels and academic performance.

The Context of the United Arab Emirates

Similar to global trends, there is a low prevalence of PA among school-age youth in the United Arab Emirates (UAE). Paulo et al. (2018) reported that only 16% of UAE schoolchildren achieved more than 60 minutes of MVPA each day, falling from 20% in 2005.

In tandem with low levels of PA is a reported rise in obesity rates in UAE children and adolescents, with 38-41% of youth classed as overweight and a further 17-24% classed as obese (Alblooshi et al., 2016). Recently, the UAE government has made considerable efforts to address the issue of physical inactivity among the UAE population. In 2017, the Ministry of Education (MOE) introduced a new health and PE curriculum to be rolled out in all government schools in Dubai. In addition to this, smaller-scale initiatives, such as the Dubai Fitness Challenge 30x30, attempt to raise awareness of PA levels by promoting daily exercise. Despite these recent initiatives to encourage and increase school-based PA promotion in the UAE, there is a paucity of research on the PA programming that exists in UAE schools. Such research is important to understand the nature of such programming, identify current areas of program development that are relatively strong or weak, and create more targeted supports that may aid schools in implementing and sustaining PA opportunities.

The present study focuses on the emirate of Dubai and the specific context of international schools. Dubai is a constantly evolving city in the UAE, with more than 3 million inhabitants. It was reported by the Knowledge Health Dubai Authority (KHDA) in June 2022, that there were 215 private international schools in Dubai offering 18 different curricula with more than 300,000 students attending school. Due to the demand for private schooling, expatriate teachers recruited from around the world are employed in the Dubai education system, with more than 21,000 teachers currently employed in the private sector. This study aimed to examine whole-of-school PA programming in Dubai international schools based on the CSPAP framework. Underpinning this purpose were the following research questions:

- What PA policies and practices within the CSPAP framework exist in Dubai international schools?
- What factors support or hinder PA promotion in Dubai international schools?

Methods

Research Design

This descriptive study employed an explanatory-sequential mixed-methods research design (Edmonds & Kennedy, 2016). Quantitative data were collected via a self-report questionnaire completed by a sample of PE teachers recruited from Dubai international schools, and qualitative data were subsequently collected from interviews with a subsample of these teachers identified to explore in a deeper way this area to understand questionnaire responses better.

Participants

PE teachers were selected as participants for this study because their views of school-based PA programming should be a priority in efforts to build the knowledge base needed to inform policy and practice (Webster et al., 2020). Physical educators are uniquely positioned within the school environment to help document and evaluate existing PA opportunities and the support system in place for these opportunities. Given their professional training and tendency to work with multiple grade levels within a school, PE teachers are called upon to play a leading role in whole-of-school PA programming (McMullen et al., 2015).

Convenience sampling was used to recruit PE teachers ($n=18$) from Dubai international schools to participate in this study. No sampling restrictions were applied based on a participant's age, gender, or other characteristics. Each participant was employed at a different school. Participants identified as PE teachers who were female (4), male (12), or other (2). A total of seven teachers indicated they were serving as either a primary (3) or a secondary head of PE (4). Participants' years of teaching experience ranged from 2-23 years ($M=5.17$ years). Among those participants indicating their highest degree earned, eight reported having a bachelor's degree, six reported having a master's degree, and none reported possessing a doctoral degree. All participants indicated they were licensed or certified to teach PE.

Instrumentation

Questionnaire

Quantitative data were collected using the Comprehensive School Physical Activity Program Policies and Practices Questionnaire (CSPAP-Q; Stoeper et al., 2021). The questionnaire is organized into six sections: Respondent Characteristics, Physical Education, PA During School, Before and After School PA, Staff Involvement, and Family and Community Engagement. Within these sections are 53 question sets. Stoeper et al. (2021) reported acceptable content, face validity, and test-retest reliability for all sections of the instrument.

As the original questionnaire was developed for application in the educational environment of U.S. schools, it was slightly modified for application in the context of Dubai international schools. Modifications were based on discussions between the first and second authors and pilot testing with a convenience sample of four PE practitioners working in the study context. For piloting purposes, the following two open-ended questions were included in each questionnaire section: (a) Were any questions confusing? (b) Do any questions need to be revised for clarity? Teachers' feedback focused on incorporating the term "lunch break" into items asking about school recess, adding the British class grading system, and removing items containing the word "district" as Dubai has no district system. The final questionnaire used in the present study included 49 question sets. Additionally, participants had the option to provide their email address if they wished to be invited to participate in a follow-up interview about their school's PA opportunities.

Interviews

The first author conducted follow-up interviews to obtain qualitative data with a subsample of the questionnaire participants ($n=7$) who agreed to be interviewed. The purpose of the follow-up interview was to explore participants' questionnaire responses further. Interviews were conducted on Microsoft Teams, and audio was recorded with participants' permission. The transcription feature on Microsoft Teams was enabled for data analysis purposes. All participants were asked the same seven questions in the interview, each focusing on one of the CSPAP questionnaire's subsections to better

understand the PA practices and opportunities in Dubai international schools. Examples of these questions include “Approximately how many classroom teachers incorporate PA within their lessons?” “Does your school promote or support students by offering walking or cycling to school?” “Not including time to eat, how long would students have during recess to be physically active?” A semi-structured interview schedule was used, allowing the researcher to probe participants’ responses in more depth. The length of the interviews ranged from 6.42-11.56 minutes ($M=8.36$ minutes).

Procedures

Before collecting data, the second author’s institutional ethics board for human subjects research obtained approval to conduct the study. The first author, a PE teacher employed at an international school in Dubai, used his existing professional network to identify and recruit participants. Teachers were sent an invitation via email or WhatsApp. Invitations outlined the aims of the research and included a link to the survey. The online survey platform JISC was used to administer the survey. Clicking the link would direct teachers to a front page that explained the study procedures, protocols, risks, and benefits and served as informed consent. Participants were given the opportunity to provide their contact details at the end of the questionnaire if they wished to be considered for a follow-up interview. The survey was sent to 197 PE teachers and remained open for one month (June 29 to July 29, 2022). Two reminders were sent following the initial invitation message to maximize the response rate. The 18 teachers who completed the questionnaire represented a response rate of 10.9%. Fan and Yan (2010) suggest that a response rate below 10% is common for Internet surveys. The time taken to do the questionnaire ranged from 10 minutes to 2 hours and 47 minutes ($M=21$ minutes). Therefore, participation could have been burdensome for some teachers. Participants who provided their email contacts in the questionnaire were invited to individual interviews. A total of eight teachers were invited, and seven of them agreed to participate.

Data Analysis

Questionnaire responses were analyzed using descriptive statistics, and responses were categorized into three domains consistent with the most recent review of the CSPAP framework: (a) quality

PE, (b) other PA opportunities, and (c) the implementation support system (Webster, 2022). Interview data were analyzed using a thematic analysis (Braun et al., 2014). Specifically, the first author initially read the interview transcripts multiple times to become familiar with the data. While reading the transcripts, the researcher wrote brief memos reflecting the main ideas and key points in participants' responses. The memos served as codes that captured recurring sentiments. Iterative coding led to the emergence of clear patterns in the data, allowing the researcher to take a more holistic view of participants' responses and identify themes. To help ensure trustworthiness, negative case analysis was used to verify the themes, and the second author served as a peer debriefer for the data analysis procedures.

Results

CSPAP-Q

Quality PE

Items in this domain focused on PE policies, resources, and practices. Most participants—66.7% (12)—indicated their schools have a written policy requiring a specific number of minutes for PE per week, but less than half of participants—44.4% (8)—indicated their school has a written policy for the PE curriculum to be evaluated annually. A total of 72.2% (13) of teachers said their school requires PE lessons to be taught by a certified PE specialist. In all, 85.7% (12) of respondents reported that their schools offered pre-kindergarten (reception) PE, with all schools offering PE from kindergarten (year 1) to 12th grade (year 13). A total of 94.4% (17) of respondents indicated their schools offered PE 1-2 days per week, but only 5.6% (1) of schools offered PE every day. Regarding the length of PE lessons, 55.6% (10) of participants reported their lessons were 40-50 minutes, 27.8% (5) indicated their lessons were 50-60 minutes, 5.6% (1) indicated their lessons were 60+ minutes, 5.6% (1) reported their lessons were 30-40 minutes, and 5.6% (1) said their lessons were 20-30 minutes. A total of 83.3% (15) of the teachers reported that PE grades were based on standards, with 33.3% (6) of schools following British curriculum standards and 66.6% (12) following the international baccalaureate (IB) standards.

A total of 61.1% (11) of the teachers were required to participate in PE professional development at least once per year, with 44.8% (8) of schools providing teachers with financial support for PE-related professional development. Over half of participants—61.1% (11)—indicated their schools have a written policy specifying student-to-teacher ratio in PE lessons. Ratios ranged from 20:1-30:1 ($M=26:1$). A total of 83.3% (15) of respondents reported that teachers are permitted to withhold scheduled lunch breaks from students for academic or disciplinary reasons.

Basketball courts were the main facility available to respondents, with 72.2% (13) reporting that this facility was “often available.” However, 50% (9) suggested that the basketball court was not large enough to avoid overcrowding. 88.9% (16) indicated their schools had a budget allocation for PE equipment and supplies, although 50% (9) did not know the amount. Four respondents specified their budget allocations ranging from 10,000-110,000 AED (Amount in Emirati Dirham) per year ($M=50,000$ AED). This converts to \$2,722-29,948 USD annually ($M=13,612$ USD).

Other PA Opportunities

Items pertaining to policies, practices, and resources regarding PA during school (recess/break times and classroom-based PA) and PA before and after school were grouped into this domain. Regarding recess/break times, 50% (9) of respondents reported that their school had a written policy specifying the number of recess/lunch break minutes per day students should receive, with breaks ranging from 30-60 minutes ($M=38.33$ minutes). A total of 77.8% (14) felt that pupils or students were physically active between 16 to 30 minutes of their lunch breaks. According to 94.4% ($n=17$) of respondents, the school staff members most often asked to supervise recess/lunch breaks were classroom teachers. A total of 72.2% (13) of participants indicated their schools did not provide organized activities during recess/lunch breaks, and 50% (9) indicated that recess/lunch break supervisors were not asked to encourage students to be physically active during their lunch breaks. Furthermore, 44.4% (8) of the teachers indicated their schools did not provide equipment to students at recess, and 72.2% (13) reported that there was no budget for recess equipment and supplies. A total of 38.9% (7) of partici-

pants indicated that students could not be physically active during their recess/lunch break when there is inclement weather.

With respect to classroom PA, 72.2% (13) of respondents reported that their schools did not provide classroom teachers with professional development support that encourages teachers to integrate PA into the classroom. Over half of the participants—55.6% (10)—indicated their schools did not have physically active classroom environments (e.g., stand-up desks, cycle desks), with 44.4% (8) reporting that between 1-24% of classroom teachers integrate PA in their classrooms.

In the area of before and after school PA, 94.4% (17) reported their schools made provisions variously for PA clubs or inter-house sports for students before or after school. However, 61.1% (11) indicated schools provided no training for those who supervise, lead, or coach before/after school programs. A total of 88.9% (16) of respondents indicated their schools engaged in interscholastic sports competitions, and 44.4% (8) indicated the “majority” (50-74%) of both male and female students participated in at least one PA club or sport during the academic year.

Implementation Support System

This domain included items focusing on the infrastructure in place to support school-wide PA programming, including a school wellness policy, a school wellness committee, support for staff involvement (specifically, the provision of staff wellness programming), and support for family and community engagement. A total of 50% (9) of participants reported their school had a wellness policy addressing PA, while 66.7% (12) of participants indicated their school had a committee overseeing the school’s health policy and programs, 66.7% (12) of respondents reported that their school had a wellness coordinator, and 55.6% (10) of teachers indicated their school’s wellness committees had a leader with PA expertise.

Regarding staff involvement, 33.3% (6) of participants indicated their schools offered PA classes/programs to employees in their schools, and 33.3% (6) of these respondents reported that any (1-24%) staff attended or participated in these classes/programs. Specific to family and community engagement, 72.2% (13) respondents reported that their schools did not promote or support walking or cycling to school using designated safe or preferred routes where

available. A total of 55.6% (10) reported that their schools offered community enrichment programs on school grounds outside of the normal school day. Additionally, 66.7% (12) of the teachers reported that their schools ran PE and PA school-based community events, such as health fairs and family fun nights, 50% (9) reported that their schools opened their indoor facilities, and 44.4% (8) reported that their schools opened their outdoor facilities to students and their families outside of school hours.

Interviews

Thematic analysis of the interview transcripts resulted in three themes: (a) Time constraints in secondary schools, (b) facilities, and (c) location.

Time Constraints in Secondary Schools

The example repeatedly resurfacing in this context was that of promoting PA during regular classroom time. Participant 1, who was a secondary school PE teacher, suggested that more time is afforded to primary school teachers to implement PA in their lessons:

In primary school, a high proportion [of classroom teachers] would be doing physically active lessons. I suppose it could maybe be a lack of creativity in the delivery for secondary school teachers, but I'd imagine it's lots of pressure from senior management and parents about having to get the content delivered and feeling like they do not have enough time. In secondary school, to be honest, I'm pretty much stuck in the classroom for the whole 55 minutes.

Similarly, Participant 5, who was a secondary school PE teacher, had similar views on time constraints due to the academic curriculum: "I would say no teachers integrate physical activity [which is] probably more to do with they are very focused on getting their own lessons done and very much focused on getting their curriculum done before even contemplate[ing] doing anything else." Participant 6, who taught PE across both primary and secondary school, felt primary schools are more suited to implement PA into their lessons: "[In primary schools] the lessons tend to be more practical activities. Within secondary school, lessons are shorter, only 45 minutes

to teach; it's hard to integrate [PA], as there's a lot of theory based in the secondary school."

Facilities

The second theme focused on the facilities available to schools. It became apparent that some schools had more or better facilities for students to be physically active, particularly in the hotter months. Participant 1 mentioned their school has the capacity to host PA opportunities for students during snack/lunch breaks: "They can use the sports hall in the summer months and then in the cooler months they would use the football field." Participant 3, a primary school PE teacher, had a similar issue describing how the provision of PA in the hotter months was more challenging due to the availability of facilities:

Students receive 20 minutes for snack and 40 minutes for lunch, however, now we are considered "hot weather play" in Dubai, so students are not allowed to go outside for recess. Therefore, they must stay in the classroom and do activities, or they just must go to the canteen and eat. So, they're not allowed outside to play unless we have a free facility where they can take part in physical activity and but in our school that depends on if we have facilities available, which is very unlikely as we do use them for a lot for lessons.

Participant 5 remarked, "[Time spent doing PA] would be very little to be honest. Break times in my school are just two breaks of 15 minutes every day. Also, the way the school is set up as well, not many areas, both nearly from a health and safety perspective, and just a lack of facilities and resources." Further, Participant 7, a secondary PE teacher, indicated, "[Students] have no physical activity during the hot months up until probably the middle of October. Once the weather cools down, then yes, we have lots of outdoor spaces that the kids can go and use."

Location

Schools' locations, including the overall built environment and the weather in Dubai, emerged as a key factor in school-based PA promotion. A focus on active commuting to/from school was particularly prominent within this theme. When asked whether schools

would encourage students or teachers to commute actively, most participants felt walking/cycling to school was not an option for their students. Participant 6 said, “I don’t think there’s much promotion or encouraging students to walk or cycle to school due to the nature of the region.” Similarly, Participant 7 remarked, “Not at the moment, no, due to the location of the school.” Participant 4 mentioned,

There are some students that cycle to school, but it wouldn’t necessarily be promoted. In the area that my current school is located [it] is quite in like an industrial area. There’s a lot of high-rise buildings and shopping centers and quite a lot of busy roads and traffic. So, in terms of safety, I’m not actually sure if that would be advisable around the current area.

One exception was Participant 2, a secondary school PE teacher, who said, “Yeah, a lot [of students] walk and cycle to school. There’s a lot of bikes out there now. Particularly when it’s cooler there are a lot that can easily cycle and walk from the Springs and Emirates Hills area.” Thus, not all international schools in Dubai are in parts of the city where active commuting is considered too dangerous or challenging.

Discussion

The aim of this mixed-methods study was to examine whole-of-school PA programming in Dubai international schools from the perspective of the CSPAP framework. PE teachers’ perceptions were used to understand school PA policies and practices and gain insights into factors supporting or hindering PA promotion. As PE is identified as the cornerstone component of a CSPAP and PE teachers are commonly understood to be the resident experts in schools when it comes to promoting PA (SHAPE America, 2015), gathering PE teachers’ views and experiences of PA programming is a significant feature of this study.

Quantitative results indicate there are both strengths and limitations with respect to whole-of-school PA in Dubai international schools. In the domain of quality PE, it was reassuring to find that all participants said their school offers PE and that student-teacher ratios seemed consistent with what would be expected for other subject areas. However, about a quarter of schools did not require that

a specialist teach PE, there was considerable variability reported for the frequency and length of PE lessons, a large majority of schools allowed teachers to withhold PA opportunities from students for disciplinary reasons, and there appeared to be a lack of support for PE teachers' professional development. SHAPE America (2015) recommends that all PE be taught by a licensed/certified PE teacher, that every student be required to take PE daily, totaling 150 minutes each week for elementary students and 225 minutes each week for middle and high school students, and that PA never be withheld as a punishment. Furthermore, in its comprehensive review of school-based PE and PA, the Institute of Medicine (2013) recommended that PE teachers be provided with ongoing professional development, which was identified as an important factor in improving teacher instruction and student achievement.

Participants' survey responses suggested that other PA opportunities during school were limited. There were few organized activities to support students' PA during recess, and there was little to no budget available to purchase recess equipment. Research on organized recess activities has yielded mixed results, with some studies showing this approach increases children's PA and other studies showing no change or decreases in children's PA (Coolkens et al., 2018; McKenzie et al., 2010; Suga et al., 2021). The expected advantage of organized activities at recess is their support for children who are less active at other times during the day and may benefit from more structured PA opportunities during recess (Frank et al., 2018). Portable equipment at recess has consistently been shown to increase children's PA levels (e.g., Erwin et al., 2014; Parrish et al., 2013; Suga et al., 2021). The study's participants also reported a lack of professional development for classroom teachers to promote PA. An intervention in an elementary school showed that classroom teachers' implementation rates of physically active academic lessons increased following professional development (Bartholomew & Jowers, 2011), and numerous recommendations for effective professional development to support classroom teachers' PA promotion have been forwarded in the literature (e.g., Moon & Webster, 2019; Tompkins et al., 2019). In contrast to PA opportunities during school, PA opportunities before and after school appeared more prevalent in the current study, but participants reported a lack of supervisor training. Research has

demonstrated that a brief, 30-minute PA promotion training session for afterschool staff can increase PA and reduce children's sedentary behavior in afterschool programs (Mailey et al., 2021).

Regarding the CSPAP implementation support system, it is apparent that further work is needed to implement staff wellness programming. Although staff wellness continues to be an area of limited focus in CSPAP research, mounting evidence suggests that school staff who are more physically active are also more likely to promote PA with their students (Kuhn et al., 2021; Webster et al., 2015). Active commuting was revealed to be another relatively undeveloped area of support for PA promotion, with implications for the role of communities in designing safe routes to school and the role of school staff and parents in supervising children who walk or bicycle to school when needed. The questionnaire data also evidenced a gap in schools' PA promotion by making school facilities open to students and families outside of school hours. Children have been shown to participate in more PA when schools open their facilities after school and on weekends (Durant et al., 2009; Farley et al., 2007).

The follow-up interviews in this study addressed the second research question concerning factors that facilitate or hinder PA opportunities in Dubai international schools. Participants felt that time constraints were a bigger barrier to CSPAP implementation in secondary schools compared to elementary schools. Research on whole-of-school PA in secondary schools is scant. In one study, a purposive sample of science teachers interviewed about using classroom PA said that they typically integrated PA into lessons (Warehime et al., 2019). Although they perceived barriers to promoting PA (e.g., lack of space, student resistance), insufficient time did not emerge as a theme in the findings. However, extra time needed to teach using PA did surface as a challenge in another interview study conducted with high school teachers who integrated PA into their subjects (English, math, and Norwegian; Schmidt et al., 2022). Despite participants' perceptions in the present study, studies conducted in elementary schools have consistently identified a lack of time as a perceived barrier for classroom teachers. Comparisons of whole-of-school PA programming in elementary and secondary school settings in future research are needed to better understand time as a factor in teachers' PA promotion.

The other themes identified from the interviews were facilities and location as factors in promoting school-based PA. Of particular significance in this regard is the geographical location of the UAE. In Dubai, inclement weather during the academic year is prevalent, particularly in the months of August, September, May, and June. Students spend up to 40% of the school year indoors for PE lessons, classroom lessons, snacks, and lunch breaks. Warmer weather also impacts access to facilities, particularly during snacks and lunch breaks. Many participants alluded to this issue. Schools with ample space and facilities are less affected by the climate. However, school campuses that span primary and secondary grades/years and share facilities are particularly affected. Participants in this study report that students eat lunches in classrooms or canteens without an option to go outside and be active. This highlights the significance of classroom teachers, including PA, during conventional lessons throughout the school day.

A key strength of this study is that it is one of the first investigations to examine whole-of-school PA programming in Dubai international schools. Further, this study begins to address a broader gap: the lack of research on school-based PA policies and practices in the Middle East and North Africa region. Despite these strengths, several limitations need to be acknowledged. The response rate for the CSPAP-Q was low, although not inconsistent with other studies using online surveys. Nulty (2008) suggests that online surveys are much less likely to achieve response rates as high as surveys conducted on paper. A second limitation was convenience sampling, which limits the generalizability of the results. Finally, as data were collected strictly using self-reports, it is possible that some of the results reflect social desirability and that more objective measures would capture different perspectives on the extent and nature of CSPAP implementation within the study context.

In conclusion, this study provides an initial look into whole-of-school programming in Dubai international schools. The data may be useful in informing school leaders about some areas of the CSPAP framework that could be given more attention and priority in efforts to help ensure students have sufficient opportunities to meet PA guidelines as a route not only to improved health and well-being but also to academic performance. Future research is recommended

using a larger sample and drawing on perspectives of other school professionals, including classroom teachers and principals, as well as parents and community partners, to continue to build the descriptive evidence needed to underpin correlational/experimental studies and strengthen practical guidance concerning whole-of-school programming in Dubai international schools.

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