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Voices of Children on Movement Behaviours in the Early Years: Reflections from Six Diverse Country Settings

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Abstract

Little is currently known about young children's perceptions and experiences of 24-hour movement behaviours (physical activity, sedentary behaviour, sleep), yet their voices play an important role in contributing to our understanding and ensuring that appropriate action is taken to promote healthy behaviours. With the release of the World Health Organisation's Guidelines for physical activity, sedentary behaviours and sleep for children under 5 years of age, interest is gathering to examine how young children globally perceive and experience these movement behaviours in their daily lives. Conducting qualitative research with young children, however, presents a host of challenges including identifying suitable methods (interview type), developing appropriate questions (terminology, translation), building rapport (presence of caregivers/educators, incentives), and managing power dynamics, while adjusting to the restrictions imposed by COVID-19. Additional layers of complexity come into play when conducting an international study across culturally, linguistically, and socioeconomically diverse populations. This article describes the reflections of our research group as we considered the effect of diverse contextual influences in Australia, Chile, China, India, Morocco and South Africa, on how movement behaviours are conceptualised by young children. The complexities of working across these diverse contexts is discussed and the implications this has for methodological decisions and data interpretation are reflected upon. While the WHO Guidelines (2019) are universal, globally young children experience considerable differences in how their days are structured, along a continuum of highly supervised to independent play, with varying degrees of agency to make choices regarding their experience of movement behaviours. This suggests the need for a nuanced approach in how we further research and address movement behaviours across different country contexts, taking into consideration social and cultural norms.

Keywords

community based research, narrative inquiry, grounded theory, qualitative evaluation, participatory action research

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Introduction

An extensive body of evidence underpins the relationship between physical activity (Carson et al., 2017), sedentary behaviour (Poitras et al., 2017), sleep (Chaput et al., 2017) (collectively referred to as movement behaviours, and including screen time) and health and developmental outcomes in the early years of childhood (under 5 years of age). The research suggests that the composition of these behaviours across the whole day matters (Rollo et al., 2020), giving rise to the development of an integrated 24-hour movement behaviour paradigm (Tremblay, 2020). This was formalised on a global level by the release of the World Health Organization's (WHO) *Guidelines for physical activity, sedentary behaviours and sleep for children under 5 years of age* (World Health Organization, 2019). Similar 24-hour movement behaviour guidelines have also been developed in a number of countries, including Canada (Tremblay et al., 2017), Australia (Okely et al., 2017), South Africa (Draper et al., 2020), and China (Guan et al., 2020). Since habits formed in the early years track through childhood and adolescence (Jones et al., 2013) into adulthood (Biddle et al., 2010), early childhood is a critical time to promote healthy lifestyle behaviours and lay the foundations for a healthy life course.

With the clinical significance of the benefits of adhering to the movement behaviour recommendations now well established, attention is turning to investigating compliance with movement behaviour guidelines and the potential correlates of 24-hour movement behaviours (Okely et al., 2021). Interest is gaining to determine whether this varies across the diverse settings in which young children live. Advocacy efforts are also being directed towards creating and influencing built and social environments that foster healthy movement behaviour patterns among young children (NHC, 2021; WHO, 2021). However, children, particularly those below school age, are rarely consulted about their views on health matters, and there is no evidence available that documents the voices of young children on their experiences of movement behaviours. The recent WHO-UNICEF-Lancet Commission that sought to identify strategies to accelerate progress on child health and wellbeing, recognises the voices of children as a powerful force for change that must be mobilised (Clark et al., 2020).

Given that young children are still developing their literacy and writing skills, and that these abilities may be further limited in low-income settings, qualitative methods are more feasible than questionnaire methods to explore young children's views across diverse settings. While the importance of obtaining young children's perspectives has been emphasised, collecting qualitative data on these perspectives in this age group is not without its challenges (Docherty & Sandelowski, 1999; Ponizovsky-Bergelson et al., 2019). There are several considerations relating to qualitative data collection with this age group. Some of these apply to qualitative methods more generally, including the importance of developing rapport, asking clear and understandable questions, listening attentively, and paying attention to non-verbal behaviour. However, identifying a conducive interview setting, limiting power dynamics between the interviewer (adult) and interviewee (child), selecting the appropriate method for data collection (individual interviews or focus groups), and asking questions that will prompt rich responses are particularly important for interviews with young children (Ponizovsky-Bergelson et al., 2019).

While these considerations are sufficiently challenging in one setting, there may be further challenges for qualitative studies with young children across a range of cultural contexts. It is crucial that cultural context is acknowledged when conducting qualitative interviews (Bayeck, 2021) since the interpretation of findings may differ across settings. In addition, the interview process may be further complicated when the concepts to be explored are relatively complex and questions need to be appropriate across a range of languages and literacy levels which could influence children's ability to articulate their responses. Cross-language research presents its own set of challenges throughout the research process with timing of translation and the inclusion or absence of native speakers in the research team (Santos et al., 2015).

Previous qualitative studies on 24-hour movement guidelines with stakeholders have highlighted some of these cultural complexities, and the need for communication around these guidelines to be contextually relevant and nuanced for different audiences (Riazi et al., 2017; Stanley et al., 2020; Tomaz et al., 2020). However, these previous studies did not explore how young children perceive these guidelines or how they conceptualise movement behaviours. This is relevant since terms such as 'physical activity' and 'sedentary behaviour' may not be understandable to young children, or even to adults. This is evidenced by the simplification of terminology (e.g. moving and sitting, instead of physical activity and sedentary behaviour) used in public-facing 24-hour movement behaviour guideline documents for the early years in Canada (Tremblay et al., 2017) and South Africa (Draper et al., 2020).

In the context of the International Study of Movement Behaviours in the Early Years (SUNRISE) (Okely et al., 2021), which examines associations between 24 hour movement behaviours and motor skills, executive function and adiposity outcomes, a team of researchers conducted a qualitative sub-study to capture young children's perspectives of movement behaviours from six diverse country settings: Australia, Chile, China, India, Morocco, and South Africa. The aim of this paper is to explore the methodological complexities of this cross-cultural qualitative study with young children, conducted in 2021 during the COVID-19 pandemic, which introduced additional logistical challenges, and for the learnings from this research to inform processes for how guidelines and toolkits that advocate for the movement behaviours, are developed, and socialised to parents/caregivers and educators, who play a considerable role in shaping the movement behaviours of young children across

different contexts. A comprehensive description and interpretation of the findings pertaining to children's views and experiences of the movement behaviours have been published elsewhere (Okely et al., 2023).

Methods

Contextual Details

Each participating country has characteristics shaped by cultural and social norms that may explain differences in how children experience movement behaviours from an early age. Further, these characteristics may also influence the research encounter. Challenges faced by participating countries due to the COVID-19 pandemic at the time of data collection varied. These not only influenced technical procedures but may have also influenced participants' responses. For each study site, the characteristics of home and community environment, the early childhood care and education context and the COVID-19 related measures at the time of data collection, are broadly described in Table 1.

Sample and Recruitment

Children aged 3–5 years were recruited from urban and rural areas in Australia (n = 25), Chile (n = 22), China (n = 34), India (n = 20), Morocco (n = 34), and South Africa (n = 21); sample characteristics are outlined in Table 2. Recruitment differed across countries, and ranged from recruiting eligible children from existing studies (e.g., SUNRISE), to recruiting children from settings and Early Childhood Education and Care (ECEC) services where research had previously been carried out, to recruiting new samples of eligible children. Ethical approval for the study was obtained in each country at the relevant institution for each co-author. Written informed consent was obtained from the parent, primary caregiver or legal guardian of each child who participated in the study, and verbal child assent was sought at the time of data collection.

Data Collection

The children were invited to share their views and experiences around movement behaviours through either interviews or focus groups. These were conducted in the home language of the children in each setting. A semi-structured interview and focus group guide was used, and questions and prompts are provided in Supplementary Table 1. Bearing in mind that children would likely not be familiar with the concept of movement behaviours, or terms such as physical activity and sedentary behaviour (as mentioned in the introduction), special attention was paid to framing these concepts in such a way that they would be understood by the participants. Furthermore, it was also necessary to consider how these questions would translate into local languages, given that English was the home language for only the Australian participants (this discussed further on page 10). In total, one hundred and 28 interviews and six focus groups were conducted involving 156 children (urban n = 101, rural n = 55) between January and November 2021. Interviews/focus groups were conducted either by the co-authors themselves, by a trained field worker or trained early childhood educator. All interviews and focus group discussions were audio recorded and transcribed and translated into English as required by the co-authors.

Data Analysis

The Framework Method (Gale et al., 2013) was used to analyse the interview and focus group data. This is a type of qualitative thematic analysis that adopts a systematic and flexible approach for teams of researchers with different levels of experience of qualitative analysis. A key feature of the Framework Method involves generating a matrix output (e.g., spreadsheet) that can be used to develop a holistic and descriptive overview of a data set. This method is particularly suitable for analysing semi-structured interviews (or focus groups) that cover similar key issues, such as was the case for this study.

The seven stages of the Framework Method (Gale et al., 2013) were followed for the analysis of the data for this study:

1. Interview and focus group recordings were transcribed verbatim and translated into English where necessary.
2. Each co-author familiarised her/himself with the interview and focus group recordings and transcripts from their setting.
3. Informed by the interview and focus group guide and early impressions of the transcripts, initial coding of the transcripts was done with the assistance of Nvivo software.
4. Based on this round of coding, these codes were further developed amongst co-authors to ensure that the codes were relevant across contexts, including the addition of some unique codes, and a working analytical framework was constructed.
5. This analytical framework was applied to the transcripts (by each co-author for their data set), either using Nvivo or manually, depending on each co-author's familiarity with qualitative data analysis.
6. A spreadsheet was created so that data could be entered into a framework matrix for each set of country data.
7. From this framework matrix, the data were interpreted by each co-author, in light of relevant contextual considerations for their country, and each co-author generated a narrative description for each theme.

Throughout the study we engaged in collective and individual researcher reflexivity. Through individual reflexivity, we examined our own perspectives as researchers, and how these

Table 1. Country Contextual Characteristics.

Study Site	Home and Community Environment	Early Childhood Education and Care Context	COVID-19 Related Measures
Australia	Both the preschools and the children's home environments were well-resourced, reflected in their access to toys (indoor/outdoor toys and resources to support play), devices (tablets, parents' old phones, TVs, toy computer), home environments (house/garden, own bed/bedroom) and services (swimming/tennis/ballet lessons).	Children are entitled to 15 hours of preschool per week at no cost in the year before they attend school. As a result, around 90% of eligible children are enrolled in preschool. Most participants attended preschool at least 3 days per week and had considerable structure and routine in their day.	At the time of data collection, preschools were fully operational, and there were no significant COVID-19 related disruptions to children's school routines. In the months preceding data collection, preschools had been closed for some weeks any measures or potential impact prior to data collection.
Chile	Most families had access to electronic devices (TVs, computers, tablets and mobile phones) and all of them had access to the internet. Children living in urban areas do not usually play in the streets, but access to playgrounds has improved in the last years.	Preschool education in Chile has high coverage. About 80% of boys and girls aged 3 and 5 attend educational centres. Boys and girls regularly attend educational institutions full time. The government offers free early years education to parents who cannot afford it.	COVID-19 measures have led to the ongoing closure of schools. In addition, a total lockdown and complete limitation of travel has been implemented. Many public parks are still closed, or playgrounds are restricted in their access. Under quarantine conditions, it is allowed to go out twice a week for 2 hours to make purchases or essential activities. In this way, children are dependent on the activities of adults since there are no exclusive play permits. This has been shown to effect children's ability to engage in physical activity, especially in urban areas.
China	Both the preschools and the children's home/community environments were well resourced. Most families had access to electronic devices (TVs, computers, tablets and mobile phones) and all of them had access to the internet. Children living in urban areas do not usually play in the streets, but access to playgrounds and garden in the community has improved in the last years.	In China, children enrol the preschool if they turn 3 years old by Aug 31 of that year. In 2020 the national enrolment rate in preschools reached 85.2%. In urban Beijing where the sample in this study was drawn from the enrolment rate is over 99%. Most participants attended preschool 5 days per week and had considerable structure and routine in their school day.	The preschools in Beijing reopened in Sep 2020. Face masks requirements remained in place in public areas. Limits on how many people could gather in public places (like playgrounds, parks, stadiums, scenic spots etc) also remained.
Morocco	Poverty and food insecurity are pervasive problems, especially in peri-urban and low-income rural areas, and the increase in "sexual" violence and kidnapping of children conveyed by the media and social networks has created a sense of "fear" among all parents, except in the case of this study in a rural region in Nador. Children, especially those in urban settings, played in the street (usually under supervision). Resources such as "educational" toys are scarce among rural children, and although rural children generally had access to a television and their parents' phone, they had limited or no access to computers and tablets.	As recently reported by the Ministry of National education, the enrolment rate in preschools is 72.5% in urban areas and 49.6% in rural areas for the 2019-2020 school year. The share of public preschool in the sector is 23%, compared to 50% in traditional education and 27% in private education. Public kindergartens are free of charge.	At the time of data collection, preschools were operational and there were no significant disruptions related to COVID-19 in children's school routines. The only measures were distancing, decontamination, vaccination of all staff, reduction of the number of children per class, one child per table, and alternation (half-day or 3 days per week).

(continued)

Table 1. (continued)

Study Site	Home and Community Environment	Early Childhood Education and Care Context	COVID-19 Related Measures
India	Being a rural area the majority of households had an outdoor area where children could play freely with their neighbour's children and siblings of different ages. Community resources for outdoor play, e.g. parks are unavailable or are limited. Children have access to a television and cell phone including a smart phone at home though majority of the times their use is limited by the parents. Resources such as toys are easily available, though the children prefer playing with locally available resources like bullock cart, swing tied to trees, making castles and other things of mud, etc. while books are in short supply. Places for sleeping are generally shared and children typically do not have a separate bedroom.	These children were not attending an ECCE setting though a few were attending private classes. In rural areas of India, non-formal pre-school education is provided by the government through Anganwadi centres under the integrated child development scheme (ICDS) and is free while a small percentage of children also attend preschools run by the private sector, which are not free. The overall proportion of children attending ECCE in India is 49% while in Maharashtra it is 61%.	Due to the COVID-19 pandemic restrictions, the preschools were closed causing considerable disruptions to children's normal routines. Other activities however were not greatly affected, e.g. children continued to play outside in open spaces in and around the houses with friends and siblings.
South Africa	Poverty, food insecurity and violence are pervasive challenges that would be faced by these families. In many of the households, the primary caregiving role may be played by another female, e.g., grandmother, if the mother is not present or not able to play this role. Fathers are absent in many households as well. Children in these households typically have little structure or routine to their day since they were not attending preschool. Supervision of children is often shared within the community, and it is common to see children playing in the streets with other children, often of different ages. Community resources for outdoor play, e.g. parks, are usually limited. Resources like toys and books are generally in short supply, and although children in these settings usually have access to a television and cell phone (not necessarily a smart phone) at home. Places for sleeping are generally shared.	These children were not attending an ECCE setting but were receiving support from a community-based organisation that works with caregivers of children in very low-income settings not attending ECCE settings. Given that preschool is not free, many parents in very low-income settings are not able to afford the fees to send their child to preschool. The proportion of children attending ECCE settings in South Africa is just over a third of children.	The COVID-19 pandemic seems to have had little effect on children's activity patterns in low-income settings, and they continued to play outside in the street. Many ECCE settings had to close (due to parents not being able to pay fees), so it is possible that more children were around to play with, who might have normally been at an ECCE setting.

may have influenced our assumptions and practices (Palaganas et al., 2017). Collectively we examined the challenges we encountered in each of the six diverse settings, throughout the research development and data collection phases, and the implications for our study. We discussed key steps in the research process, documenting where our approaches and decisions diverged due to contextual and other factors and the implications this had on the interpretation of the findings.

Findings and Discussion

The focus of the following section is on the methodological complexities of conducting qualitative research with young children from culturally, linguistically, and socioeconomically diverse settings.

Table 2. Sample characteristics.

Country	Urban Location	Rural Location	Demographics	Additional Contextual Implications
Australia	Sydney 15 interviews	Shoalhaven 10 interviews	Children (boys = 13; girls = 12) Mean age: 4.72 years Age range: 4–5 years Home language: English	All preschools had well-resourced indoor and outdoor spaces with structured and unstructured activities occurring throughout the day. Children were typically from two-parent families and had access to a yard in their home or outdoor recreation areas within close proximity. Children also indicated access to a range of indoor and outdoor play resources at home. The urban preschool in sydney was in an above national average income neighbourhood and the regional preschools in Nowra were in below national average income neighbourhoods.
Chile	Temuco 15 interviews (online)	Padre las Casas 7 interviews (online)	Children (boys = 10; girls = 12) Mean age: 4.6 years Range: 3-5 years Home language: Spanish	Most children lived in houses with a backyard. Outdoor play was limited due to COVID-19 restrictions, affecting those living in urban areas more. Most children were enrolled in ECEC at the time of the onset of the pandemic and have maintained online classes or have received printed materials delivered by their educational centres to work on at home. Temuco and padre las casas are in the poorest region of Chile. However, most children had toys and a place to play at home. Also, all the participants had access to the internet and electronic devices (e.g., mobile phones and TV).
China	Beijing Dongcheng District and shijingshan District 6 interviews; 6 focus groups (n = 28)	N/A	Children (boys = 18; girls = 16) Mean age of 4.72 years Age range: 4–5 years Home language: Mandarin	These children came from preschools in urban Beijing with the family income are far beyond the national level, and over 85% of primary caregivers with college and above education. Most lived in high-rise residential buildings. Playgrounds or garden were available nearby where kids could participate in outdoor play after school, despite limited space and equipment. During the survey period, all the preschools were open, offering up to 2hours' daily outdoor activity (weather permitting) supported by play equipment, in accordance with the National guideline of learning and development for Chinese pre-schoolers.
India	NA	Vadu, pune District 20 interviews	Children (boys = 14, girls = 6) Mean age: 4.7 years Age range: 4–5 years Home language: Marathi	The children were not attending preschool as they were closed due to the pandemic though a few were attending private classes and a few attending online classes. The majority of children lived in houses with either a front yard or a backyard, and hence had plenty of outdoor space to play. None of the children had a set routine as they were not attending preschool. Majority were involved in free play while only a few children reported being involved in creative activity like drawing, painting, dancing etc. The other unusual activities done by 2 children were storytelling and playing carom. The children's home environments were well resourced, as reflected in their access to toys, and devices such as parents' phones and television, which the majority of children used to watch cartoons and educational programs.

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Table 2. (continued)

Country	Urban Location	Rural Location	Demographics	Additional Contextual Implications
Morocco	Oujda 16 interviews	Nador (7) and Figuig (8) Skhirat (3)	Children (boys = 21, girls = 13) Mean age: 4.3 years Age range: 4–5 years Home language: Moroccan	Children were recruited from a private preschool in a high-middle income setting in Oujda city and from two regional public preschools in the rural areas (low-income settings). The majority were attending preschool at least 3 days per week. Children's home environments and the preschool at Oujda city were quite well-resourced, in comparison to rural preschools reflected in their access to toys (indoor/outdoor toys and resources to support play at preschools), devices (iPads, parents' phones, TVs, computer).
South Africa	Cape Town (Langa and Khayelitsha 'townships') 21 interviews		Children (boys = 6, girls = 15) Mean age: 5.06 years Age range: 4–6 years Home language: isiXhosa	The children were not attending an ECCE setting. At home, children in these settings typically have minimal resources for play and early learning. Outside space is generally limited to a small yard, with few public play spaces that are safe for young children. It is common for children to play together in the street. Most of their parents/caregivers were unemployed and reliant on government grants (which are not sufficient to sustain a household) or are in very low-paying jobs. The majority of households live on less than ~ US$230 per month.

Contextual Influences on Conceptualising Terminology

As we thought about our broader research questions and discussed the aims of our inquiry, we decided to utilise two strategies to elicit children's views. The first would be to ask specific questions relating to movement behaviours, and the second to give children an open invitation to share what they would consider their 'ideal day'.

Conceptualising Movement Behaviours. As our discussions evolved, we became aware of how differently 'physical activity', in English, is conceptualised amongst academics, practitioners, policy makers and community members across the participating countries. This is attributable to a combination of differences in social norms and the language and terminology used to label and describe these activities. In Australia 'physical activity' encompasses leisure time movement and organised sport, while for Spanish speakers in Chile, the commonly used term 'jugar' (play in English) is better understood and applicable to children and their families as physical activity was more related to organised activities or exercise. Similarly, in South Africa, there is no equivalent in participants' local language, isiXhosa, and the concept needs further explanation and context to hold meaning. In addition, in the communities where children were sampled in South Africa, organised physical activity is not available for young children. In China 'physical exercise' is a more familiar term, but the extent of behaviours that fall under the broader 'physical activity' term needed to be explained with examples, while in Morocco the term 'haraka' was used which refers to movement or play. In India 'physical activity' is perceived differently across settings. In the rural context, where our data collection took place, it encompasses leisure time activities and play, particularly outside. Being a rural area children commonly spend time running around in their yards and the surrounding farms as part of their daily routine. There is no organised physical activity as such.

For our young participants, we needed to go further and reframe the concepts of physical activity and sedentary behaviour, instead referring to them as the more encompassing concept of 'play'. During the early years, prior to the onset of more organised sport (also only relevant in some contexts), physical activity occurs predominantly in the form of active or energetic, and quiet, or sedentary play. Interestingly, 'active play' appeared to be universally understood by young children, as a broad term for imaginary play, with or without the support of toys and equipment, and generally involving some movement. The activities described for 'quiet play' were typically undertaken while sitting.

Conceptualising the 'Ideal Day'. Understanding the concept of an 'ideal day' and describing what it may look like, also differed considerably between countries. This is best illustrated by how children answered the question pertaining to how they would spend their day if they could choose what to do.

Australian and Chilean children had the least difficulty sharing how they would choose to spend their time and reported a balanced range of physically active and sedentary activities across the day. These participants appeared to understand the difference between structured days with set routines (e.g., attending an ECEC service), and times where choices could be made about how to spend time. They discussed a range of ideas and resources they would draw on to

keep themselves occupied throughout the day and mentioned siblings and engaging with parents or grandparents. Several Chilean children shared they would like to organise a celebration and invite family, suggesting that they had been quite impacted by the social isolation resulting from long-term movement restrictions due to COVID-19.

While Chinese children also mentioned a wide range of active and sedentary activities, many tended to describe a similar rage of activities, including playing at home, outdoors and time spent watching TV or using a tablet. In part, this is attributable to children being accustomed to a structured preschool day and a routine set of activities under their caregiver's supervision when not at school, leaving children with limited autonomy to choose how to structure their free time. However, it was also noted that children in the focus groups appeared to be influenced by the responses of their peers, further supporting the view that these children were finding it difficult to grasp the notion of the ideal day and voicing their individual preferences.

Moroccan and South African children had the most difficulty with grasping the concept of an 'ideal day'. In the South African setting, this could partly be due to their lack of structure or routine, and a perception of autonomy about how they went about their days, with limited overt parental supervision. For many adults in these settings, their days are characterised by a lack of structure or routine, largely due to unemployment. This can transfer to other members of the household, particularly children, especially if they are not attending an ECEC programme. Related to this, children (even at a young age) tend to move around and play outside quite autonomously, with little adult or parental supervision. These communities could be described as more collectivist ("it takes a village to raise a child") rather than individualistic, and there is a general sense that community members, including older children and adolescents, are looking out for these children. However, crimes against children are not uncommon in these communities, so the sense of safety may often be more of an illusion rather than a reality.

Similarly, in Morocco, outside of preschool hours, there is little routine, and most children are left to choose how they spend their time. In urban areas, children are unlikely to play outdoors independently or without adult supervision as crimes against children occur quite frequently. In contrast, rural children are more likely to move around and play outdoors quite independently, with little or no adult or parental supervision. This is because crimes against children are uncommon in these communities, so feelings of safety are high. The rural setting in India was quite similar in that there was little structure or routine throughout the day, since children were not attending preschool at the time of data collection due to pandemic restrictions. Children move around and play outdoors with neighbouring children or siblings independently without any supervision from parents or elderly. There is a feeling of safety as crimes against children are uncommon, and the streets are considered safe, with minimal traffic. Children are therefore relatively free to do what they like and hence were unable to conceptualise the idea of an 'ideal day' as relative autonomy is somewhat of a norm.

Contextual Influences on Methodological Choices

Interview Guide. The first iteration of the questions was drafted in English, the working language of the research group. With a cognitively and linguistically typically developing 4–5-year-old Australian child in mind, questions were based on terminology and concepts familiar to this cohort. Each co-author then reflected on their local context, the ways in which movement behaviours are conceptualised in their settings, and the linguistic capabilities of the children they may recruit. Questions were subsequently refined to ensure suitability across the different data collection sites. Efforts were made to keep questions simple, clear and typically open-ended, ensuring their relevance and appropriateness across settings. In China, preschool teachers were consulted regarding the suitability of questions for the cohort and in all locations the interview guide was piloted with children, resulting in further refinements.

Once finalised, questions were translated into local languages as directly as possible. In Morocco, this required translation into both Arabic and French, and then into Moroccan dialect. In Chile and China, Spanish and Mandarin were used. In South Africa and India, where the local languages of isiXhosa and Marathi do not contain the same terminology available in English some rewording was required, while mindful to ensure questions retained the same meaning. To further assist children's understanding of the questions and facilitate more detailed answers, language specific examples and prompts were given. This provided opportunity to accommodate local nuances and enable social, cultural, and linguistic relevance. Much discussion occurred among the research team, including translation into local languages of some questions, and back-translation into English; to ensure a shared understanding and consensus regarding the purpose and meaning of each question was reached.

Interview Setting. Given the young age of participants, we prioritised children's sense of ease and confidence to share their views and experiences over adherence to strictly consistent methodological approaches. This resulted in considerable differences across participating countries and was further impacted by COVID-19 restrictions for face-to-face data collection.

In Australia, China and Morocco, children were typically recruited into the study via ECEC services and data collection occurred while children were at the service. In all three countries, the children had generally been attending these services several days per week, for some time, and were accustomed to a level of independence away from the home/parent. The South African sample were living in very low-

income settings and not attending ECEC services. There the researcher worked with local field workers who visited children in their homes. In India, there were COVID-19 pandemic restrictions in place at the time of data collection and ECEC services were closed. Children were therefore recruited from the community with the help of local field workers. Data collection took place in children's homes following COVID-19 safety guidelines. At the time of the research, Chile was experiencing strict movement restrictions due to the COVID-19 pandemic, ECEC services were closed, and the researcher was unable to meet children face to face. All interviews were therefore conducted using video-conferencing with the children in their homes. Most children were familiar with online interactions as they had to engage in this format when attending online classes or participating in social activities (e.g., connecting with grandparents) during the pandemic.

Data Collection Methods. Local norms and preferences guided data collection procedures in each country. In all countries interviews were conducted individually with the children. In Australia and Morocco, given the young age of participants, it was felt that to hear each child's voice, individual interviews would be the most suitable method. There was concern that in a focus group setting, children may talk over one another, feel shy to speak up, or pressured to agree with more socially dominant peers. Additionally, in South Africa, where the children did not attend an ECEC service, and this may have negatively influenced their language development and confidence to respond, it was anticipated that children would not feel comfortable to talk in a group setting, so these children were also interviewed one-on-one. Similarly, in India, given the rural setting, it was anticipated that the children would be more comfortable with individual interviews rather than focus groups in which the children may be influenced by their peers or be pressurised by children with dominant personality and other family members. In Chile, due to the aforementioned COVID-19 restrictions, individual online interviews were the only option.

Only in China were focus groups utilized in addition to interviews. It was found that individual interviews were very effective for those children who felt shy to express themselves in front of a group, and those who would struggle to maintain their focus on an interview for an extended period. However, generally, the children were more likely to express their ideas when hearing the views of others in the context of a focus group. Group dynamics were managed by limiting the number of children to 4–5 per group.

Interviewer/Interviewee Power Dynamics. In China and Morocco, interviews were carried out by educators who had familiarised themselves with the interview guide and clarified any questions with the researchers prior to commencing. In China the existing rapport between the educator and children meant there was a close familiarity which appeared to enhance the interview process. However, it was noted that because the educators knew the children, they would sometimes ask leading questions, to highlight a particular point or detail they knew about the child, which the child may not have mentioned until directly prompted. In Morocco, children experienced some difficulty expressing themselves, perhaps because school activities that encourage verbal expression or communication are limited. Due to COVID-19 restrictions the researcher could not be present during the interviews. From listening to the transcripts it was noted that sometimes educators did not take sufficient time with the children and asked questions too directly, and that particularly the younger children became upset or shy when they struggled to comprehend a question; despite the existing rapport between educators and children.

In Australia, in some instances interviews were led by an educator and the researcher would occasionally prompt, and in other instances the researcher conducted the interviews alone with no educator present. Interviews were typically held in a quiet space, away from others. There was some variability in interviewing techniques, with some educators engaging in more extensive probing and others appearing to rush somewhat through the interview. The researcher was conscious of power dynamics, particularly since she was meeting the child for the first time and took care to put the child at ease, validate their views, and listen and engage in topics the child raised, even if they deviated from the questions, before directing the conversation back on track.

In South Africa, interviews were conducted by trained field workers. Given that homes were generally small (often 1 or 2 rooms), it was not always feasible to conduct the interview in a private space. The child's caregiver (or a family member) was often present for the interview. It was necessary to make it clear to the caregiver that the child should speak for herself/himself, and that they should not try to influence the child's responses. It was noted that children did not give long answers and used body language (e.g., shrugs) and silence as a response to questions. In addition, young children in these settings can often be very compliant, and they may have felt shy to speak openly to an adult. This could be due to the threat of physical punishment for misbehaviour, as has been noted in other similar South African settings (Richter et al., 2018). This was somewhat mitigated by the fact that these fieldworkers had met the children approximately 6 months earlier for other data collection, which helped with rapport building.

In Chile, given interviews were conducted via video conferencing, a caregiver was present in each interview. Caregivers were requested before the interview to allow their children to speak freely. At times caregivers had to clarify some words for the child or offer explanation when children referred to toys by personal names or discussed elements of their routines. This was particularly the case with the younger participants. At the end of the interview caregivers had the chance to clarify aspects of the interview or receive recommendations from the interviewer. A challenge of conducting

online interviews, that may have influenced the interview process, was that, in contrast to online interviews conducted with adults (Archibald et al., 2019), children's body language was more difficult to read, and times of silence were perhaps perceived differently in the online context. This may have affected the interaction with children. However, most children appeared very comfortable and open to speak despite the online format. Most children also showed their favourite toy or motor skill to the interviewer – perhaps a benefit of being in their home and the added confidence of being in the company or a parent.

In India, the in-person interviews were conducted by the researcher with the help of the local field worker. Interviews occurred in a quiet place away from the other children to enable recording and minimise interruptions from family members or other children. As the children had not attended ECEC services for an extensive period due to COVID-19 restrictions, some experienced difficulties in understanding the questions and expressing themselves. In such cases, the field worker who was familiar with the child or a family member facilitated the communication. Initially, a substantial effort was made to build rapport with each child and elicit relevant information. Once comfortable the children were very enthusiastic to talk; most showed their favourite toys, some went on to showcase a painting, and one child even narrated a story. However, due to the young age of participants, special effort was frequently required to help children maintain their concentration.

Use of Incentives. In South Africa, caregivers were aware that an incentive (grocery shopping voucher) would be provided for the household of each child who took part in the interviews. In addition, each child also received a small incentive (blowing bubbles) to thank them for participating; sometimes this was shown to the child if necessary to encourage them to participate. These were not intended to be coercive, but rather acknowledged the financial and resource challenges experienced by these households (including limited resources for play) and helped to build rapport with the fieldworkers. In India, the community from which the children were recruited were familiar with research and actively participated in the interviews without the need for incentives. However, in some instances chocolates were given to the children who were shy, to build rapport and make them comfortable.

In Morocco, the participating children did not know that they were going to receive a participation gift, so this did not influence their participation. At the end of the study, toys were sent to all preschool classes from which children were recruited, so as not to create any division and leave out those who had not been involved. The toys related to the promotion of gross and fine motor skills that are often lacking among young children in these settings. Further, Moroccan educators conducting interviews in rural public preschool were given a financial incentive (according to the number of children interviewed). While this assistance was a way to motivate and help educators facing financial difficulties (due to low wages and late payments) it did not appear to influence their participation.

In Chile, an electronic certificate was delivered to the participants highlighting the child as a mini-researcher. The research team received very positive feedback from parents and caregivers as it was something different and special for most of them. Most reported that they were positively impressed by the focus of the study and relevance given to the children's perceptions rather than the parents' perspectives.

Contextual Influences on the Interpretation of Findings

The following section focuses on two factors that highlight how the socioeconomic and cultural contexts varied considerably between participating countries. One is the level of structure and the other is the level of supervision children experience throughout their day. Both appear to have implications for young children's sense of autonomy and agency and seem to influence how they engage in movement behaviours. We propose that this has implications for the promotion of movement behaviour guidelines.

We wish to reiterate here that while our data may not be generalisable within participating countries; our participants were broadly representative of the settings where the data were collected. We also acknowledge that each researcher interpreted their country's dataset through their unique sociocultural and professional lens, which may contain some underlying biases. The Australian researcher, a migrant, has public health training and considerable cross-cultural public health experience. The Chilean researcher has a background in physiotherapy with research experience in public health and public policy focused on children's physical activity and wellbeing. The Chinese researcher has a background in developmental paediatrics and maternal and children health, specifically focused on the research in early childhood development, and has a strong collaboration with many local preschools. The Indian researcher has a background in maternal and child health and extensive experience in conducting community-based research. The Moroccan researcher has a background in evaluating body composition, micronutrients deficiencies and physical activity in children. The South African researcher has a background in psychology and public health, and while being a different ethnicity to the research participants, has extensive experience in cross-cultural research with young children and their caregivers.

Level of Structure in the Day. The children participating in this study experienced a range of scenarios pertaining to the structure of their day, in part due to the norms in their localities, largely driven by socioeconomics, and in part due to COVID-19 disruptions affecting ECEC attendance. A related aspect is children's access to resources that can act as both a barrier to, and enabler of, the movement behaviours and is likewise driven by socioeconomic factors.

In Australia, children tended to have quite structured days with participating pre-schools also offering long day care service, meaning children would typically remain at the centres for the full day. Although only a small number of children were enrolled in additional formal classes (e.g., swimming lessons, dance etc.) this is certainly common in Australia throughout childhood and commences at a young age. Australian research has shown that young children who are highly scheduled in structured activities on weekdays and those with limited adult involvement, especially on weekends, tend to be less physically active (Yu et al., 2011). However, although children do spend a significant proportion of their preschool day in structured activities, the Early Years Learning Framework for Australia, which guides the work of early childhood educators, places a specific emphasis on play-based learning. This pedagogical approach capitalises on young children's natural motivation to play, allowing them to explore, experiment, discover and solve problems in imaginative and playful ways (Department of Education Employment and Workplace Relations, 2000). Academic learning is thus enabled and supported through play, which incorporates physical activity of different levels of intensity and duration. This creates opportunities to support children to meet the movement behaviour guidelines throughout the day.

The participants in Chile were interviewed while the country was under strict measures of lockdown due to COVID-19 which included closure of schools. Therefore, their daily routines may have been affected as most were attending preschool. Educational centres stayed in contact with children through online classes or they sent printed materials to their homes. Children participated in these educational activities before lunchtime and spent the afternoon in non-organised activities. At the weekend children usually reported playing or watching TV with grandparents or cousins in addition to their parents or siblings.

The interviewees in China were all from pre-schools where a high level of structure was provided across the day. It is a requirement for preschools to have 2 hours of daily outdoor activity, incorporating both structured and free play. However, after-school activities will vary greatly depending on the primary caregivers' understanding of the benefits of physical activity. Generally, structured acitivities after school are not common among Chinese preschoolers.

In India, these young children would have typically had a structured day had they been attending preschool. After school hours however, children do not participate in formal or structured activities as they are not readily available in rural areas. Children commonly play independently with other children in the neighbourhood or their siblings, using available resources. The data revealed that the children engage in free or imaginary play using all locally available resources (e.g.,: making castles using mud, mimicking a doctor, playing on the bullock cart).

Although in Morocco young children's days are characterised by the presence of a structure and routine because children attend preschools, it did not seem that there were structured activities offered to young children out of preschool hours. It was not clear if these types of activities had been suspended due to COVID-19, or whether they are not valued by the parents since they may feel that the children are still young and active enough throughout the school day. Differences were seen between the more affluent urban setting where children seemed to have access to toys both at preschool and at home. However, these children did express a lack of opportunity/desire to play outside, predominantly for security reasons. In comparison, the rural participants were from a very disadvantaged setting and described lacking toys and play resources both at home and at school. These children were also more likely to mention that their parent encouraged them to play outside, perhaps precisely because they lacked the resources to keep their children engaged inside.

In participating South African communities, children experienced the lowest degree of structure, as they did not attend preschool. Further, in these communities, there are no formal or structured activities offered for young children, e.g., extracurricular or after-school activities. It is not clear whether these types of activities are necessarily valued, and that if they have never been available, it is possible that nobody misses having them. Rather, it appears that being able to play independently with other children in the community is valued, using the resources that are available. The data would suggest that in the absence of physical resources, children resort to fantasy play, using whatever they have available (e.g., "poppie huis", translated into English as "doll house").

Across all contexts, children commonly engaged in 'active play' during times of reduced structure.

Degree of Supervision. Screen time is often used as a proxy measure for sedentary behaviour as the majority of screen use occurs while seated. The ubiquitous nature of screens, in the lives of many of the young children who participated in this research, was apparent. Access to televisions and mobile devices, with limited time restrictions, necessarily displaces time spent in the other movement behaviours (physical activity or sleep). The level of supervision a child received around screen use therefore has considerable impact particularly on sedentary time and potentially sleep onset and duration when used at bedtime.

In very low-income settings in South Africa, technology can often be aspirational, and most households will have a television, even if they are struggling to put food on the table. In many households, it is not unusual for the television to be continually on in the background, and being intentional about monitoring the child's access to the television is not likely to be considered. Owning a smartphone is also aspirational, and caregivers may allow young children access to their phone since they believe that their ability to use it is an indication of their intelligence (e.g., "my child is clever, they can use the

phone"). Phones are also frequently used to occupy a child when a caregiver has things to do, such as cooking and cleaning.

In the Indian context all the households had a television and majority had smart phones. Access to television viewing was mostly not restricted or supervised, though access to smart phones was restricted by the caregiver. Television viewing as well as phone use was one of the means to keep the child occupied when the caregiver has other tasks to do, such as house cleaning, cooking or farm work. Television and smartphones were also used as a reward to encourage children to finish eating their meals. It was commonly used to calm the children when they were angry or irritable. During the COVID-19 pandemic, screen time was seen to have increased due to online classes as well as to keep the child occupied.

In Moroccan high-income households, parents do not control or limit children's time spent viewing television or on caregiver's phones. In the very low-income settings, while most households have a television, few are likely to have a smartphone, and children from these settings who reported playing outside, were less interested in watching television.

The majority of Australian, Chilean and Chinese children were required to ask permission to access screens and had time limitations placed on their screen use by their parents/caregivers. Children frequently reported utilizing screens after preschool, in the evenings and on weekends. The majority of children also mentioned incorporating screen time into their ideal day.

Children in Chile often reported watching online videos (e.g., YouTube), but at the same time most emphasized that they avoid violent content on these platforms. The mobile phone was the most common method for accessing content and, generally, children reported watching videos alone, but with adult supervision. As most children in Chile were exposed to online classes, it was noticed during the online interviews that they had very good skills using this technology (e.g., respect of the other while talking or even muting the microphone). Video calls were often reported as a way of communicating with family members, particularly grandparents.

There are specific recommendations for both sedentary time and screen time in the WHO global guidelines and it is evident that caregivers have a substantial role to play in setting and enforcing parameters around young children screen use.

Researcher Reflexivity

Throughout the development of the study protocol and during the analysis and interpretation of the findings, we wrestled with the tension between maintaining methodological rigour by conducting one cohesive study across multiple countries, and being cognisant of, and responsive to, the unique demands of each setting. This was particularly evident during data analysis. The Framework Method (Gale et al., 2013), however, effectively enabled an iterative coding process during which our analytical framework was developed. The codes were generated via both a deductive and an inductive process. Potential codes were developed a priori, aligning with the interview guide, and further codes were generated upon working through the transcripts. Each researcher commenced with the same set of initial (a priori) codes and then added additional ones that arose from their data. The team then met to discuss each countries codes and checked their data for any additional codes that had been identified through the inductive process. The codes were largely consistent across the study sites, but each researcher's understanding of their context, culture and language, meant that unique, locally relevant, codes were added to the analytical framework. The research team held discussion to come to a consensus around how new codes were defined, which enabled us to determine both the similarities and differences in the findings between countries.

We were challenged in some countries by how much, and in other countries by how little, our participants responded to our questions. This was due to a combination of our very young participants' ability to articulate their experiences and perceptions, and the cultural norms and power dynamics that influenced their engagement with those conducting the interviews, as well as whether parents/carers or educators were present. Given that we wanted to centre the voices of children, we intentionally did not engage adults directly in the interviews or facilitate a discussion that enabled adults to speak on behalf of children. The variation in richness or paucity of the data, consequently meant that in some of our settings, the voices of the children themselves facilitated the interpretation of the findings, while in other settings the researchers found themselves drawing more heavily on their understanding of the context to 'fill in the gaps', make sense of the findings and determine the implications.

Implications for Promoting the Movement Behaviour Guidelines

Our findings highlight that, despite many similarities, there are numerous contextual differences that need to be considered when promoting movement behaviour guidelines across countries. Those working on developing materials to socialise the WHO guidelines and the global standards toolkit for ECEC services, could benefit from familiarising themselves with the unique ways young children perceive and experience the movement behaviours in their own context. This may assist to ensure that generic messaging is avoided, and that instead, practitioners and parents can be engaged in conversations and knowledge sharing that is locally relevant and therefore has the potential effect behaviour.

Our research has shown that a key consideration is that these contexts appear to fall on a spectrum between children engaging in highly structured activities across the day, and children have a high degree of autonomy in terms of how they

spend their time, sometimes (paradoxically) in the presence of the threat of physical punishment for misbehaviour. This points to the need to potentially target different movement behaviours in different contexts, and to take into consideration social and cultural norms around caregivers of young children, given that they can play a critical role in guiding and/or gatekeeping movement behaviours.

For example, in low-income South African settings, with an apparent norm of limited overt parental supervision (and other older children or adults playing a caregiving role), greater emphasis could be placed on promoting rules and boundaries around screen time in more autonomy-promoting contexts. Whereas in high-income Australian and Chilean settings where parents are more likely to be hands-on in terms of supervision, there could be increased emphasis on promoting more free play, in addition to the structured activities offered (Aguiar Farias et al., 2021).

Given that young children worldwide spend a considerable amount of time attending ECEC services, advocating for the implementation of the WHO's toolkit, that sets out global standards for movement behaviours in ECEC services (WHO, 2021), has the potential to result in significant gains. Raising awareness about the WHO global guidelines as well a available national 24-hour movement guidelines, and engaging parents in the discussion around how and for how long their children spend in the movement behaviours is important. Drawing parents and caregivers' attention to the benefits of adherence to the WHO guidelines and the Global Standards for movement behaviours in ECEC settings, for young children's healthy growth and development, and calling for policy action to develop effective strategies responsive to local realities, socio-cultural contexts and norms that can support this work, is of paramount importance.

Conclusion

This qualitative study on movement behaviours of young children from six diverse country settings has underscored the salience of context in research on these behaviours. While there are shared commonalities across these settings, these contextual differences have been shown to influence how terminology is conceptualised and understood, especially across language groups and for younger children who are developing their linguistic and literacy abilities. Furthermore, context influenced methodological choices regarding the collection of data (how, where, and with whom) as well as how these findings are interpreted against a broader backdrop of contextual realities in each setting.

Conducting this research study with an international team across six countries has highlighted the need for critical reflection on the how the research aims, methodology and protocol are developed and enacted. Researchers need to be aware of their own positionality and how to balance the requirement for methodological rigour and consistency, with the demands that local realities place on how best to undertake research. Reflection and discussion are required on the need to diverge from, or enhance the protocol, to ensure the research achieves its intended aims in every context. While the experiences in settings are not intended to be representative of each country, they draw attention to the need to consider context when promoting movement behaviour guidelines for young children, and indeed for any age group.

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Supplemental Material

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References

Aguilar-Farias, N., Toledo-Vargas, M., Miranda-Marquez, S., Cortinez-O'Ryan, A., Cristi-Montero, C., Rodriguez-Rodriguez, F., Martino-Fuentealba, P., Okely, A. D., & del Pozo Cruz, B. (2021). Sociodemographic predictors of changes in physical activity, screen time, and sleep among toddlers and preschoolers in Chile during the COVID-19 Pandemic. *International Journal of Environmental Research and Public Health*, *18*(1), 176. https://doi.org/10.1186/10.3390/ijerph18010176

Archibald, M. M., Ambagtsheer, R. C., Casey, M. G., & Lawless, M. (2019). Using zoom videoconferencing for qualitative data collection: Perceptions and experiences of researchers and participants. *International Journal of Qualitative Methods*, *18*, 1–8. https://doi.org/10.1186/10.1609406919840516/1609406919874596

Bayeck, R. Y. (2021). The intersection of cultural context and research encounter: Focus on interviewing in qualitative research. *International Journal of Qualitative Methods*, *20*, 1–8. https://10.1186/10.1609406919840516/1609406921995696

Biddle, S. J. H., Pearson, N., Ross, G. M., & Braithwaite, R. (2010). Tracking of sedentary behaviours of young people: A systematic review. *Preventive Medicine*, *51*(5), 345–351. https://doi.org/10.1186/10.1016/j.ypmed.2010.07.018

Carson, V., Lee, E. Y., Hewitt, L., Jennings, C., Hunter, S., Kuzik, N., Stearns, J. A., Unrau, S. P., Poitras, V. J., Gray, C., Adamo, K. B., Janssen, I., Okely, A. D., Spence, J. C., Timmons, B. W., Sampson, M., & Tremblay, M. S. (2017). Systematic review of the relationships between physical activity and health indicators in the early years (0-4 years). *BMC Public Health*, *17*(Suppl 5), 854. https://doi.org/10.1186/10.1186/s12889-017-4860-0

Chaput, J. P., Gray, C. E., Poitras, V. J., Carson, V., Gruber, R., Birken, C. S., MacLean, J. E., Aubert, S., Sampson, M., & Tremblay, M. S. (2017). Systematic review of the relationships between sleep duration and health indicators in the early years (0-4 years). *BMC Public Health*, *17*(Suppl 5), 855. https://doi.org/10.1186/10.1186/s12889-017-4850-2

Clark, H., Coll-Seck, A. M., Banerjee, A., Peterson, S., Dalglish, S. L., Ameratunga, S., Balabanova, D., Bhan, M. K., Bhutta, Z. A., Borrazzo, J., Claeson, M., Doherty, T., El-Jardali, F., George, A. S., Gichaga, A., Gram, L., Hipgrave, D. B., Kwamie, A., Meng, Q., & Costello, A. (2020). A future for the world's children? A WHO–UNICEF–Lancet commission. *Lancet (London, England)*, *395*(10224), 605–658. https://doi.org/10.1186/10.1016/S0140-6736(19)32540-1

Department of Education, Skills and Employment. National Quality Framework. (2000). *Belonging, being & becoming: The early years learning framework for Australia*. https://www.dese.gov.au/national-quality-framework-early-childhood-education-and-care/resources/belonging-being-becoming-early-years-learning-framework-australia

Docherty, S., & Sandelowski, M. (1999). Focus on qualitative methods interviewing children. *Research in Nursing & Health*, *22*(2), 177–185. https://doi.org/10.1186/10.1002/(sici)1098-240x(199904)22:2<177::aid-nur9>3.0.co;2-h

Draper, C. E., Tomaz, S. A., Biersteker, L., Cook, C. J., Couper, J., de Milander, M., Flynn, K., Giese, S., Krog, S., Lambert, E. V., Liebenberg, T., Mendoza, C., Nunes, T., Pienaar, A., Priorieschi, A., Rae, D. E., Rahbeeni, N., Reilly, J. J., Reynolds, L., & Okely, A. D. (2020). The South African 24-hour movement guidelines for birth to 5 years: An integration of physical activity, sitting behavior, screen time, and sleep. *Journal of Physical Activity & Health*, *17*(1), 109–119. https://doi.org/10.1186/10.1123/jpah.2019-0187

Gale, N. K., Heath, G., Cameron, E., Rashid, S., & Redwood, S. (2013). Using the framework method for the analysis of qualitative data in multi-disciplinary health research. *BMC Medical Research Methodology*, *13*(117), 117. https://doi.org/10.1186/1471-2288-13-117.

Guan, H. Y., Zhao, X., Qu, S., Wu, J, Yang, Y, Guo, J, Zhang, T, & Luo, D (2020). Guideline of physical activity for Chinese preschoolers aged 3 to 6 years old. *Chinese Journal of Child Health Care*, *28*(6), 714–720.

Jones, R. A., Hinkley, T., Okely, A. D., & Salmon, J. (2013). Tracking physical activity and sedentary behavior in childhood: A systematic review. *American Journal of Preventive Medicine*, *44*(6), 651–658. https://doi.org/10.1016/j.amepre.2013.03.001

Okely, A. D., Ghersi, D., Hesketh, K. D., Santos, R., Loughran, S. P., Cliff, D. P., Shilton, T., Grant, D., Jones, R. A., Stanley, R. M., Sherring, J., Hinkley, T., Trost, S. G., McHugh, C., Eckermann, S., Thorpe, K., Waters, K., Olds, T. S., Mackey, T., & Tremblay, M. S. (2017). A collaborative approach to adopting/adapting guidelines - The Australian 24-hour movement guidelines for the early years (Birth to 5 years): An integration of physical activity, sedentary behavior, and sleep. *BMC Public Health*, *17*(Suppl 5), 869. https://doi.org/10.1186/s12889-017-4867-6

Okely, A. D., Kariippanon, K. E., Dumuid, D., Chong, K. H., Kuzik, N., Rollo, S., Katzmarzyk, P., Reilly, J. J., Suesse, T., Draper, C. E., Fink, G., Nores, M., Yousafzai, A., Hongyan, G., el Hamdouchi, A., Lubree, H., Aguilar-Farias, N., Florindo, A, A., Nguyen, B, P., & Tremblay, M. S. (2023). New insights into health and development of children in the next 1000 days: The importance of healthy levels of physical activity, sedentary behaviour, and sleep. *The Lancet (in press)*.

Okely, T., Reilly, J. J., Tremblay, M. S., Kariippanon, K. E., Draper, C. E., El Hamdouchi, A., Green, J. P., Guan, H., Katzmarzyk, P. T., Lubree, H., Pham, B. N., Suesse, T., Willumsen, J., Basheer, M., Calleia, R., Chong, K. H., Cross, P. L., Nacher, M., Smeets, L., & Widyastari, D. A. (2021). Cross-sectional examination of 24-hour movement behaviours among 3- and 4-year-old children in urban and rural settings in low-income, middle-income and high-income countries: The SUNRISE study protocol. *BMJ Open*, *11*(10), Article e049267. http://doi.org/10.1136/bmjopen-2021-049267

Palaganas, E. C., Sanchez, M. C., Molintas, M. P., & Caricativo, R. D. (2017). Reflexivity in Qualitative Research: A Journey of Learning. *The Qualitative Report*, *22*(2), 426–438. https://doi.org/10.46743/2160-3715/2017.2552.

Poitras, V. J., Gray, C. E., Janssen, X., Aubert, S., Carson, V., Faulkner, G., Goldfield, G. S., Reilly, J. J., Sampson, M., & Tremblay, M. S. (2017). Systematic review of the relationships between sedentary behaviour and health indicators in the early years (0-4 years). *BMC Public Health*, *17*(Suppl 5), 868. https://doi.org/10.1186/s12889-017-4849-8

Ponizovsky-Bergelson, Y., Dayan, Y., Wahle, N., & Roer-Strier, D. (2019). A qualitative interview with young children: What encourages or inhibits young children's participation? *International Journal of Qualitative Methods*, *18*, 1–9. https://doi.org/10.1177/1609406919840516.

Riazi, N., Ramanathan, S., O'Neill, M., Tremblay, M. S., & Faulkner, G. (2017). Canadian 24-hour movement guidelines for the early

years (0 – 4 years): Exploring the perceptions of stakeholders and end users regarding their acceptability , barriers to uptake , and dissemination. *BMC Public Health*, *17*(Suppl 5), 841. https://doi.org/10.1186/s12889-017-4853-z

Richter, L. M., Mathews, S., Kagura, J., & Nonterah, E. (2018). A longitudinal perspective on violence in the lives of South African children from the birth to twenty plus cohort study in Johannesburg-Soweto. *South African Medical Journal*, *108*(3), 181–186. https://doi.org/10.7196/SAMJ.2018.v108i3.12661

Rollo, S., Antsygina, O., & Tremblay, M. S. (2020). The whole day matters: Understanding 24-hour movement guideline adherence and relationships with health indicators across the lifespan. *Journal of Sport and Health Science*, *9*(6), 493–510. https://doi.org/10.1016/j.jshs.2020.07.004

Santos, H. P. O., Jr, Black, A. M., & Sandelowski, M. (2015, January). Timing of translation in cross-language qualitative research. *Qualitative Health Research*, *25*(1), 134–144. https://doi.org/10.1177/1049732314549603

Stanley, R., Jones, R., Swann, C., Christian, H., Sherring, J., Shilton, T., & Okely, A. (2020). Exploring stakeholders' perceptions of the acceptability, usability, and dissemination of the Australian 24-hour movement guidelines for the early years. *Journal of Physical Activity & Health*, *17*(1), 120–125. https://doi.org/10.1123/jpah.2019-0069

The National Health Commission of the People's Republic of China (NHC). (2021). *Action plan for child health improvement (2021-2025)*.

Tomaz, S. A., Okely, A. D., van Heerden, A., Vilakazi, K., Samuels, M. L., & Draper, C. E. (2020). The South African 24-hour movement guidelines for birth to 5 Years: Results from the stakeholder consultation. *Journal of Physical Activity & Health*, *17*(1), 126–137. https://doi.org/10.1123/jpah.2019-0188

Tremblay, M. S. (2020). Introducing 24-hour movement guidelines for the early years: A new paradigm gaining momentum. *Journal of Physical Activity & Health*, *17*(1), 92–95. https://doi.org/10.1123/jpah.2019-0401

Tremblay, M. S., Chaput, J. P., Adamo, K. B., Aubert, S., Barnes, J. D., Choquette, L., Duggan, M., Faulkner, G., Goldfield, G. S., Gray, C. E., Gruber, R., Janson, K., Janssen, I., Janssen, X., Jaramillo Garcia, A., Kuzik, N., LeBlanc, C., MacLean, J., Okely, A. D., & Carson, V. (2017). Canadian 24-hour movement guidelines for the early years (0 - 4 years): An integration of physical activity, sedentary behaviour, and sleep. *BMC Public Health*, *17*(Suppl 5), 874. https://doi.org/10.1186/s12889-017-4859-6

World Health Organization. (2019). *Guidelines on physical activity, sedentary behaviour and sleep for children under 5 years of age*. https://apps.who.int/iris/handle/10665/311664

World Health Organization [WHO]. (2021). *Standards for healthy eating, physical activity, sedentary behaviour and sleep in early childhood education and care settings: A toolkit*. https://www.who.int/publications/i/item/9789240032255

Yu, M. L., Ziviani, J. M., & Haynes, M. (2011). Sleep, structured and social time use and young Australian children's physical activity. *Health Promotion Journal of Australia: Official Journal of Australian Association of Health Promotion Professionals*, *22*(3), 203–209. https://doi.org/10.1071/he11203