

## **PARENTAL ATTITUDES TOWARD OUTDOOR NATURE PLAY: CHALLENGES AND OPPORTUNITIES FOR YOUNG CHILDREN IN MALAYSIA**

Syaza Soraya Sauli<sup>1\*</sup>, Shirley Wyver<sup>2</sup>, Azlina Mohd Kosnin<sup>3</sup>

<sup>1,3</sup>School of Education, Faculty of Social Sciences and Humanities, Universiti Teknologi  
Malaysia, Malaysia

<sup>2</sup>Macquarie School of Education, Faculty of Arts and Education, Macquarie University,  
Sydney, Australia

syazasoraya@graduate.utm.my<sup>1</sup>, shirley.wyver@mq.edu.au<sup>2</sup>, p-azlina@utm.my<sup>3</sup>

\*Corresponding Author

**Received:** 21 Sept 2025; **Revised:** 15 Oct 2025; **Accepted:** 26 Nov 2025; **Published:** 30 Nov 2025

**To cite this article (APA):** Sauli, S. S., Wyver, S., & Mohd Kosnin, A. (2025). Parental Attitudes toward Outdoor Nature Play: Challenges and Opportunities for Young Children in Malaysia. *Southeast Asia Early Childhood Journal*, 14(2). <https://doi.org/10.37134/saecj.vol14.2.5.2025>

**To link to this article:** <https://doi.org/10.37134/saecj.vol14.2.5.2025>

### **ABSTRACT**

Outdoor play in natural environments is vital for children's holistic development, yet many parents may undervalue its importance, limiting opportunities for engagement with nature. This mixed-methods study examined Malaysian parents' attitudes toward outdoor play and the barriers shaping children's participation. Survey data were collected from 132 parents using a validated instrument (McFarland et al., 2011), complemented by semi-structured interviews with eight parents. Results indicated a modest but significant positive relationship between parents' attitudes toward outdoor recreation and the time children spent outdoors, while general pro-nature attitudes showed no association. Interviews highlighted five recurring barriers: safety concerns, limited facilities, time constraints, urbanisation, and family dynamics. Collectively, these findings reveal a disconnect between parental awareness and actual practice. The study underscores the need for multifaceted strategies, including parental education, stronger school-family partnerships, and policy reforms, to better support outdoor play in nature. It offers practical implications for educators, policymakers, and caregivers seeking to foster active, healthy, and environmentally connected childhoods in Malaysia.

**Keywords:** Parental attitude, children, outdoor play in nature, challenges

---

### **INTRODUCTION**

Outdoor play in natural environments is vital for early childhood development, supporting children's cognitive, physical, emotional, and social growth. The United Nations Convention on the Rights of the Child (UNCRC) affirms the right to play (Article 31), highlighting its significance for early learning and wellbeing. Interacting with nature in the early years offers rich sensory experiences that nurture creativity, problem-solving, focus, resilience, and physical activity (Atkinson et al., 2025; Goldenberg et al., 2024; Mann et al., 2022).

These experiences also lay the foundation for environmental stewardship by fostering a strong nature engagement and encouraging pro-environmental attitudes (Chawla, 2020; Speldewinde, 2023).

In addition, outdoor play in nature provides ideal conditions for holistic development, enhancing physical health, cognitive growth, and emotional well-being (Dodd et al., 2022; Goldenberg et al., 2024; Mann et al., 2022; Prins et al., 2025; Ryan et al., 2020). It also strengthens nature connectedness, fosters resilience, and encourages Science, Technology, Engineering, and Mathematics (STEM) education (Harper & Obee, 2021; Mustapa et al., 2019; Speldewinde & Campbell, 2022; Uline et al., 2021). Children's relationships with nature are reinforced, and active lifestyles are encouraged by simple activities like rough-and-tumble play or splashing in puddles.

Despite its known benefits, outdoor play in nature is often constrained by parents, who act as key 'gatekeepers' or supervisors of children's experiences. Parents' perceptions, attitudes, and behaviours significantly influence the time children spend outdoors and their comfort level engaging with natural environments (McHugh et al., 2023; Arnas & Deniz, 2020). Parents who value nature and model outdoor behaviour tend to promote children with stronger environmental identities and greater physical and social competence. However, this influence is not always linear, as some parents may express general environmental concern yet fail to prioritise outdoor recreation due to competing obligations or cultural values (Hassan & Khalil, 2024; Mart, 2021; McFarland, 2018; Zhai et al., 2024).

This study is grounded in the lens of Environmental Socialisation Theory (EST), which asserts that environmental attitudes and behaviours are shaped through early social interactions, particularly those involving parents (Waters & Rekers, 2019; Bugental et al., 2015). According to EST, the more children are exposed to nature-related experiences in early childhood, the more likely they are to internalise pro-environmental values. Parent-child nature interactions, such as nature walks, unstructured outdoor play, or gardening activities, foster emotional resilience, empathy, and environmental responsibility (Evans et al., 2018; Ray et al., 2022).

Modern parenting occurs within increasingly complex social and environmental contexts. Several studies highlight safety concerns, urbanisation, digital distractions, and the prioritisation of academic performance as common barriers to outdoor play (Dankiw et al., 2023; Little, 2015). In densely populated urban settings, a lack of accessible green spaces and traffic concerns further reduce opportunities for spontaneous nature engagement (Graham et al., 2018; Sobko & Brown, 2021).

In Malaysia, these challenges are particularly persistent. Rapid urbanisation, changing family structures, and rising concerns over child safety have altered traditional patterns of early years outdoor activity. This issue is often associated with the rising rates of childhood obesity and a high prevalence of sedentary lifestyles (Institute for Public Health, 2020; Raj et al., 2023). Although studies have examined outdoor learning in Malaysian preschools (Affendi & Masnan, 2022; Saleh et al., 2018) and parental perceptions of the physical environment (Lim et al., 2018), few have explored the relationship between parental attitudes and children's time engaging in outdoor nature play.

Despite global recognition of parents' roles in shaping children's environmental behaviour, there is limited research exploring how these dynamics play out in Southeast Asia. To enhance parents' encouragement of children's outdoor play in nature, it is crucial to understand their perspectives and opinions on this issue (Van Truong et al., 2022).

Thus, this study seeks to address this gap by investigating Malaysian parents' attitudes toward outdoor play in nature, the barriers they face, and how these factors affect children's access to nature-based experiences. Through this localised lens, the study contributes region-specific insights that can inform culturally sensitive educational and policy interventions.

## **METHODOLOGY**

This study employed a convergent parallel mixed-method design (Creswell & Plano Clark, 2018). In this design, quantitative and qualitative data were collected concurrently, analysed separately, and then integrated to provide a comprehensive understanding of parental attitudes and barriers toward children's outdoor play in nature. The rationale for this design was to capture both the breadth of parental perspectives through survey data and the depth of individual experiences through interviews, allowing for triangulation of findings and enhancing validity.

### **i) Participants and Sampling**

For the survey, 132 Malaysian parents participated voluntarily. They were recruited using convenience sampling from early childhood centres (TASKA), kindergartens (TADIK), online parenting forums, and social media platforms. To ensure variation, efforts were made to include parents from both urban and rural residential areas.

For the qualitative phase, purposive sampling was used to select eight (8) parents from among survey respondents to explore in more depth the obstacles and challenges in supporting their children's outdoor play in nature. Participants were selected to reflect diversity in gender, age, and residential context. All participants provided informed consent before data collection.

Table 1

*Inclusion and exclusion criteria for parent participants*

<b>Criteria</b>	<b>Description</b>
<b>Inclusion</b>	Parents of children aged 3–6 years old, residing in Malaysia, and currently responsible for their child's daily care.
<b>Exclusion</b>	Parents of children with medical or developmental conditions that significantly limit outdoor play (e.g., severe mobility impairments).

### **ii) Quantitative Instrument and Procedure**

Quantitative data were collected using an adapted version of the Parental Attitude Toward Nature and Outdoor Recreation (PAN–PACOR) scale originally developed by McFarland et al. (2011). The instrument was modified for local relevance, translated into Malay using a forward–back translation procedure (Brislin, 1970), and reviewed by two bilingual experts to ensure linguistic and conceptual accuracy. The questionnaire consisted of four sections:

Table 2

*Questionnaire structure on parental attitudes toward children's outdoor play*

Section A	Section B	Section C	Section D
Demographic Questions	Parental Attitude towards Nature (PAN)	Parental Attitude Towards Their Child's Outdoor Recreation (PACOR)	Amount of Time Children Spent in Outdoor Play in Nature (Per Week)
This section asked about the basic respondent's demographic questions.	This section asked parents to rate 15 statements about their attitudes toward nature. The scale included questions related to <b>outdoor play or activities in nature.</b>	This section asked parents to rate 21 statements related to <b>their concerns about the safety of their child while outdoors, the advantages and drawbacks of children spending time outdoors, and behavioural matters associated with outdoor activities.</b>	This section asked parents <b>to indicate the average daily amount of time their child spent</b> in various types of outdoor play activities in nature.
The questions are about gender, residential area, and age.	Some statement examples are: <i>"I like sitting beside a quiet pond," I feel good when I am close to nature," and "I like the sound that a stream makes."</i>	Examples of questions include: <i>"I would let my child walk in the rain even if they got wet.", "Playing outside hurts my child's school grades," and "My child gets too dirty when playing outside."</i>	The parents were asked to respond to the following statement: <i>"Average amount of time my child (ren) spends outside in nature/outdoors in a week."</i>

Responses were recorded on a Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

### iii) Qualitative Interviews

To complement the survey findings, semi-structured interviews were conducted with eight parents via the Zoom platform.

Table 3

*Demographic information of the participants*

Participant ID	Gender	Age Range	Residential Area	Children (Age)
P1	Female	30–34	Urban	1 (age 5)
P2	Female	25–29	Suburban	1 (age 2)
P3	Male	35–39	Rural	3 (ages 2, 3 & 5)
P4	Female	28–32	Urban	2 (ages 2 & 5)
P5	Male	40–44	Urban	2 (ages 4 & 6)
P6	Female	30–34	Urban	2 (ages 4 & 6)
P7	Female	25–29	Urban	2 (ages 3 & 6)
P8	Male	35–39	Suburban	2 (ages 3 & 5)

The central guiding question was:

*“What challenges do you face in supporting your child(ren)’s outdoor play in nature?”*

In the semi-structured interviews, probes and follow-up questions were used to elicit detailed narratives (Camfield, 2014). All interviews were conducted in Malay, audio-recorded, and transcribed verbatim. The transcripts were analysed in Malay, and only after analysis was completed were the selected quotations translated into English for reporting. This approach helped to preserve cultural meaning in participants’ responses.

#### **iv) Data Analysis**

Quantitative data were analysed using the Statistical Package for the Social Sciences (SPSS) Version 24. Descriptive statistics (mean, frequency, range) were generated, and Pearson’s product–moment correlation was conducted to examine the relationship between parental attitudes and children’s outdoor play time. The level of significance was set at  $p < .05$ .

Qualitative data were analysed using thematic analysis following Braun and Clarke’s (2006) six-step framework, with the aid of Atlas. ti qualitative analysis software. Initial codes were generated from the transcripts in Malay, then collated into broader themes through iterative review. Two researchers independently coded a subset of transcripts, and discrepancies were resolved through discussion to enhance reliability and trustworthiness.

## **RESULTS**

### **i) Quantitative Analysis**

#### **a) Parental Demographic**

Of the 132 survey participants, the majority were female (90.9%), lived in urban areas (84.8%), and were between 25–34 years old (62.9%). These demographic patterns reflect current parenting dynamics in urban Malaysian contexts.

#### **b) Parental Attitude Section (PAN) / Parental Attitude Towards Their Child’s Outdoor Recreation (PACOR)**

Table 4

*Parents’ attitudes toward nature (PAN) and child outdoor recreation (PACOR)*

	<b>n</b>	<b>Parents' Attitude towards Nature (PAN) Mean Score</b>	<b>Parents' Attitude Towards Their Child’s Outdoor Recreation (PACOR) Mean Score</b>
<b>Gender of Parents</b>			
Male	12	78.50	130.42
Female	120	79.27	132.36
<b>Residential Area</b>			
Rural	20	78.90	129.00
Urban	112	79.25	132.75
<b>Age of Parents</b>			
25 – 34 Years Old	83	79.02	132.42
35 – 44 Years Old	40	80.83	133.00
45 Years Old and above	9	73.56	126.33

Female parents and those in urban areas showed slightly higher PACOR scores than male and rural participants, suggesting stronger support for child-led outdoor engagement in these groups.

### c) Amount of Time Children Spend in Outdoor Play in Nature (Per Week)

Table 5

*Weekly duration of children's outdoor play in nature*

Average Time	n	Percentage (%)
Less than 2 hours	41	31.1
2 hours – 5 hours	68	51.5
5 hours – 10 hours	21	15.9
10 hours and above	2	1.5
	132	100.0

The majority of parents reported that their children spent **less** than 5 hours per week in outdoor play in nature. These figures fall significantly below international guidelines recommending approximately three hours of physical activity daily for preschool-aged children.

### d) The relationship between parents' attitude towards nature and the average time spent outside in nature

Table 6

*Correlation between parental attitudes and children's outdoor play time*

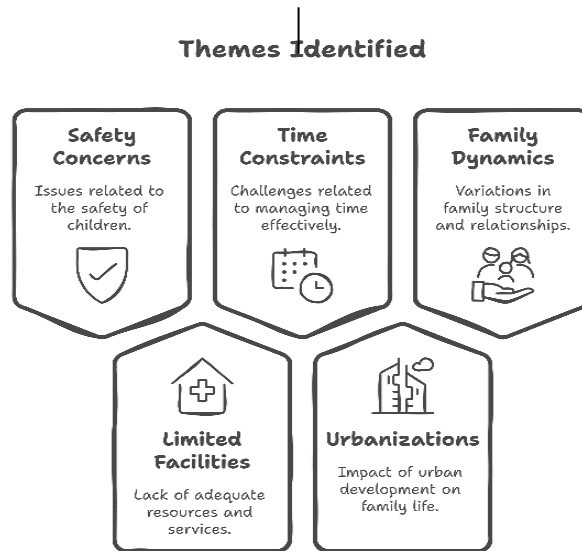
Scale	Measurement	Average Amount of Time Spent Outside in Nature
Parents' Attitude towards Nature (PAN)	Pearson's Correlation P	.210 0.15*
Parents' Attitude Towards Their Child's Outdoor Recreation (PACOR)	Pearson's Correlation P	.257 .003**
* Correlation is significant at the 0.01 level (2-tailed)		
** Correlation is significant at the 0.05 level (2-tailed)		

These findings suggest that general environmental attitudes held by parents (PAN) do not necessarily translate into behaviours or practices that affect their children's outdoor activities. On the other hand, the significant positive relationship between PACOR and outdoor time implies that when parents specifically value and support their child's interaction with nature, it has a measurable effect on behaviour.

Moreover, the correlation between PACOR and outdoor time, although statistically significant, is relatively modest in strength ( $r = .257$ ). This indicates that while parental attitudes toward their child's outdoor play are relevant, other factors are likely at play, such as the availability of green spaces, socio-economic status, neighbourhood safety, or school policies.

## ii) Qualitative Analysis

The researcher subsequently transcribed the audio recordings and translated them into English for data analysis. Using Atlas. ti software, Thematic analysis was utilised to identify categories and themes, providing a clearer understanding of the issues and barriers encountered by parents. From this research, five (5) themes were identified in this study.



*Figure 1. Themes of challenges parents face in supporting children's outdoor play*

## i) Safety Concerns

The recurring theme from the participants' responses is their profound concern for their children's safety. Several participants express these concerns in the context of current challenges, particularly related to child abduction and criminal cases.

*P1: I worried about my child's safety since the abduction case is happening widely now.*

*P2: ... due to too many viruses. also, the kidnapping issue makes us as parents more worried about letting our kids play outside of home.*

*P3: ...safety, especially given the number of kidnapping cases nowadays. So, I always have to watch them whenever they are playing outside.*

*P4: They require supervision when playing outside due to the fear of possible crime. I let my children play electronic games because it is safer than letting them play outside.*

The participant responses vividly illustrate the depth of their safety concerns. One participant explicitly mentioned their fear of child abduction, referencing the prevalence of such cases in Malaysia. Another raised concerns about the spread of viruses and the fear of kidnapping, which, in their view, exacerbates parental hesitations about allowing children to play outdoors. Many parents emphasised the necessity of continuous supervision due to apprehensions about potential crimes, underscoring the heightened vigilance required when children engage in outdoor activities. P3 even admitted being afraid to let their child roam freely due to perceived safety risks.

Parental safety concern is aligned with real-world data and reports regarding child safety in Malaysia. According to Malaysia's Bukit Aman's Criminal Investigation Department (CID), 1,509 children were reported missing between 2020 and 2022, with 85 still unlocated and some tragically found deceased. This alarming statistic reinforces parental fears, validating the need for heightened child protection measures.

This qualitative data has drawn a clear picture of the multifaceted safety concerns parents face, spanning fears of abduction, crime, and health risks. These findings underscore the need to implement safety measures to ensure children's well-being in outdoor settings. Aziz and Said (2017) have emphasised, parental concerns regarding the physical and social environment play a crucial role in shaping children's outdoor experiences. Addressing these fears is essential for fostering safe, engaging, and developmentally beneficial outdoor play opportunities for children in Malaysia. In addition, the participants also expressed concern for their children's well-being when playing outdoors and cited the presence of wild animals, stray dogs, and unsafe playgrounds as potential threats.

*P6: There are too many stray dogs in my area, which is why I have difficulties letting my children out of our house compound and play freely. An incident happened when a stray dog nearly attacked my daughter, and that traumatised all of us.*

*P3: Wild animals around my house can also affect my children when they play outdoors.*

*P8: Our neighbourhood is full of stray dogs. I have to bring my children to the nearest parks whenever they want to play outside.*

The participants' concerns about their children's well-being during outdoor play extend beyond worries about abduction and crimes; they also encompass fears related to environmental and safety factors. These additional concerns further emphasise the complex landscape parents navigate when considering outdoor play for their children. One common concern raised by the participants (P6, P3 and P8) is the presence of stray dogs in their neighbourhood. A participant's distressing incident where a stray dog nearly attacked their child, leading to trauma for the entire family. This experience highlights the tangible risks that stray animals can pose to children when playing outdoors, making it a significant concern for parents.

## **ii) Limited Facilities**

*P7: We rent a flat. Before, there was a small area for the children to play with no playground, just a tiny space. Now, the space has changed to an area for youngsters. They park their motorcycles in the area, smoke and vape. We do not have any safe open spaces or parks for our kids to play in anymore.*

P7 describes the evolution of a once-small area designated for children's play in their rented high-rise house. Initially, this space served as a modest area where children could engage in outdoor play in nature. However, the participant explains that this space has undergone a significant transformation. Instead of being a safe and child-friendly play area, it has now become a gathering spot for young individuals for smoking and vaping and raising concern.

## **iii) Time constraints**

*P1: Both of us are working, so it is hard to find time during weekdays. We go out early for work and come home quite late. But we send our daughter to kindergarten. We believe she spends time outdoors at the kindergarten, playing outside with her friends. Teachers always share some photos when they have outdoor play sessions in the WhatsApp group.*



*P7: My time is limited, so I do not have time to bring the kids to the park for play. If my husband is not working on weekends, he is working in Singapore, or during school holidays, we can have more time to have fun with our kids and bring them to the playground, parks, and lakes.*

P7 shares a different perspective, where the husband works in another neighbour country and the wife is responsible for taking care of the children while also working. She faced time constraints when bringing their children to play outside. However, the participant emphasises the importance of weekends and school holidays when the husband can spend quality time with the children, including outdoor activities like visiting nature settings.

#### **iv) Urbanisation**

*P6: My children love the beach/river more than hiking. Location is the real constraint, as those are usually far from our homes; it takes at least an hour's drive.*

*P7: Our home is located in the city centre. Finding a suitable and safe area for kids to play outside is pretty hard. Traffic is everywhere. It is quite challenging for kids to find safe parks here unless we drive to the nearest park or playground.*

These findings highlight how urbanisation can impact the accessibility of outdoor play spaces for children in urban areas. Physical constraints, such as distance and traffic congestion, can limit the opportunities for children to engage in outdoor play.

#### **iv) Family Dynamics and Arrangement**

*P2: My challenge is that I have two kids: one newborn and a 2-year-old. My husband does not like outdoor activities. So, I have to manage two children by myself. Before this, I started camping when my child (the first one) was four months old.*

*P5: ...lack of support from my partner. They prefer our daughters to focus on academics and attend tuition and art classes on weekends.*

*P8: I love to bring the children outside, but there is nothing to do. They get bored quickly and ask for an iPad.*

Despite the challenge, P2 highlighted her previous efforts to engage in outdoor activities, including camping, with their first child when they were as young as four months old. This emphasised the parents' commitment to providing outdoor play opportunities despite the family's dynamics. These findings highlight the varying family dynamics and arrangements that impact children's outdoor play access.

### **DISCUSSIONS AND IMPLICATIONS**

This study reveals a paradox: although Malaysian parents generally express positive attitudes toward nature and outdoor play, most children spend fewer than five hours per week outdoors, far below international movement guidelines for young children (Koepp et al., 2022; Tremblay et al., 2017). Unlike earlier studies that identified a strong link between parental environmental attitudes and children's outdoor play (McFarland et al., 2017), this study found that parents' general pro-environmental attitudes (PAN) had no significant association with outdoor play, while their child-specific attitudes (PACOR) showed only a modest correlation ( $r = .257$ ,  $p = .003$ ). This disconnect between values and practices suggests that broad environmental awareness alone is insufficient to promote outdoor play; supportive parenting behaviours are constrained by structural, cultural, and environmental realities.

From the perspective of Environmental Socialisation Theory (EST), which posits that environmental attitudes are transmitted through parental modelling and early experiences (Chawla, 2007; Evans et al., 2018), the divergence between PAN and PACOR highlights weaknesses in the assumed linearity of value transmission.

Parents may endorse environmental ideals but fail to translate them into child-focused practices. This study, therefore, extends EST by showing that child-specific parental attitudes matter more than general environmental concern, but even these are diluted by wider contextual constraints.

Both quantitative and qualitative findings highlight the multiple barriers parents face in supporting outdoor play. Safety concerns, including traffic, strangers, and wild animals, were pervasive, echoing international findings (Dankiw et al., 2023; Van Truong et al., 2022). Poorly maintained play spaces, air pollution, and unpredictable weather further restricted opportunities, often reinforcing children's negative perceptions of outdoor environments (Little, 2015). Urbanisation intensified these challenges: children in dense city areas with limited green space engaged in less outdoor play compared with their rural peers (Beery, 2020; Mohamad Muslim et al., 2017; Noor Hafizah et al., 2019). These findings undermine one of EST's central assumptions, that early exposure to nature is readily available and easily fostered within family contexts.

Cultural expectations and family dynamics added another layer of constraint. Consistent with Cheng et al. (2022) and MacQuarrie et al. (2022), some parents prioritised academic achievement and structured learning over play, while others cited concerns about cleanliness and "wasted time." Such pressures reflect Bento and Dias's (2017) argument that childhood is increasingly "domesticated," with limited space for unstructured exploration. This reality is particularly acute in Malaysia, where packed schedules of tuition and digital screen use limit time outdoors, despite parents' stated appreciation for nature.

At the family level, interventions must focus on bridging the gap between attitudes and behaviours. Awareness-raising alone is insufficient; parents need practical strategies and community support to create safe, regular outdoor play opportunities (Waters & Reckers, 2019). Parent education programmes could, for example, address misconceptions about safety, highlight low-cost nature-based activities, and demonstrate the developmental value of unstructured outdoor time.

At the school level, early childhood centres are well-positioned to normalise nature-based approaches. Embedding outdoor play into daily routines, not just as recess but as a core pedagogical practice, can counterbalance the pressures of academic-focused parenting. Activities such as gardening, sensory walks, and outdoor storytelling (Ramsden et al., 2025; Speldewinde & Campbell, 2022; Shaari et al., 2021) offer holistic developmental benefits and may gradually shift parental perceptions about the value of outdoor nature play.

At the policy level, this study underscores the urgency of revisiting the National Standard Preschool Curriculum (NSPC, 2017), which allocates only 20–30 minutes for outdoor activity everyday, often treated as a break rather than an integral learning experience. International benchmarks suggest much longer engagement, highlighting a gap in policy alignment (Prins et al., 2022). This limited provision reflects a classroom-centric bias that diminishes the pedagogical value of outdoor learning and risks sidelining global best practices.

This study further highlights the critical role of accessible public parks in supporting sufficient outdoor playtime for children, which is essential for their healthy development and well-being. Importantly, these findings resonate with Malaysia's PEREKA guideline

(PlanMalaysia, 2022), which promotes child-friendly, safe, and nature-inclusive design principles in urban planning. Parents' reports of unsafe, poorly maintained, or inaccessible play spaces, however, indicate that such principles are not yet consistently realised on the ground. PEREKA therefore offers a valuable model to strengthen neighbourhood planning, playground design, and community infrastructure. Ensuring its active adoption across ministries, local councils, and urban planners would help move child-friendly environments from policy aspiration to everyday reality.

The findings also refine Environmental Socialisation Theory by demonstrating that general environmental attitudes (PAN) are weak predictors of children's actual outdoor engagement. Instead, child-specific attitudes (PACOR), though modest in effect, are more influential. This nuance challenges assumptions of linear intergenerational value transfer and underscores the need for a more contextualised model of socialisation that accounts for structural and cultural constraints, such as curriculum policy and urban planning discussed earlier. Nonetheless, this study is not without limitations. Reliance on self-reported parental data introduces potential bias, and the modest sample size restricts generalisability. Future research should therefore adopt larger, more diverse, and longitudinal designs to better capture how parental perceptions, environmental access, and cultural factors interact over time to shape children's outdoor play opportunities.

## **CONCLUSION**

This study underscores the complex interplay between parental attitudes, environmental contexts, and children's opportunities for outdoor play in nature. Although parental support for outdoor recreation was modestly linked to greater time spent outdoors, broader pro-nature attitudes alone did not directly lead to increased engagement. This highlights that values must be supported by enabling conditions, such as accessible and safe green spaces, school–family partnerships, and community initiatives. The findings call for integrated strategies, combining parental education, curriculum innovation, and urban planning to bridge the gap between parental perceptions and children's lived experiences. Strengthening these connections can help nurture healthier, more active, and environmentally connected childhoods in Malaysia and across Southeast Asia.

## **ACKNOWLEDGEMENT**

The authors are grateful to all the parents who generously participated in this study and shared their time and experiences, as well as to the reviewers and colleagues who provided valuable feedback throughout the development of this manuscript.

## REFERENCES

- Affendi, A., & Masnan, A. H. (2022). Exploring Outdoor Classroom Learning as An Extension of Indoor Classroom Learning in Preschool. *Evaluation Studies in Social Sciences*, 3(2), 10–2 <https://doi.org/10.37134/esss.vol3.2.2.2022>.
- Arnas, Y. A., & Deniz, Ş. S. (2020). An investigation of preschool children's and their parents' outdoor play experiences. *Pegem Journal of Education and Instruction*, 10(2), 373-398.
- Atkinson, M., Goldenberg, G., Dubiel, J., & Wass, S. (2025). Differential Effects of An Urban Outdoor Environment On 4-5-Year-Old Children's Attention in School. *Journal of Environmental Psychology*, 102589.
- Amy L. McFarland, Jayne M. Zajicek & Tina M. Waliczek (2014). The Relationship between Parental Attitudes toward Nature and the Amount of Time Children Spend in Outdoor Recreation, *Journal of Leisure Research*, 46:5, 525–539, DOI: 10.1080/00222216.2014.11950341
- Beery, T. (2020). Exploring access to nature play in urban parks: resilience, sustainability, and early childhood. *Sustainability*, 12(12), 4894.
- Bento, G., & Dias, G. (2017). "The Importance of Outdoor Play for Young Children's Development: A Systematic Review." *Journal of Outdoor Recreation and Tourism*, 17, 10-15. This systematic review discusses how outdoor play contributes to holistic development, including essential life skills.
- Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology*, 1(3), 185–216.
- Bugental, D. B., Corpuz, R., Beaulieu, D. A., Grusec, J. E., & Hastings, P. D. (2015). An evolutionary approach to socialisation. *Handbook of socialisation: Theory and research*, 325-346.
- Camfield, L. (2014). Follow-Up Questions. In: Michalos, A.C. (eds) *Encyclopedia of Quality of Life and Well-Being Research*. Springer, Dordrecht. [https://doi.org/10.1007/978-94-007-0753-5\\_1067](https://doi.org/10.1007/978-94-007-0753-5_1067)
- Cheng, T., Brussoni, M., Han, C., Munday, F., & Zeni, M. (2022). Perceived challenges of early childhood educators in promoting unstructured outdoor play: an ecological systems perspective. *Early Years*, pp. 1–17.
- Coates, J. K., & Pimlott-Wilson, H. (2018). Learning while playing: Children's Forest School experiences in the UK. *British Educational Research Journal*. doi:10.1002/berj.3491
- Dankiw, K. A., Kumar, S., Baldock, K. L., & Tsiros, M. D. (2023). Parent and early childhood educator perspectives of unstructured nature play for young children: A qualitative descriptive study. *PLOS ONE*, 18(6), e0286468. <https://doi.org/10.1371/journal.pone.0286468>
- Dodd, H. F., Nesbit, R. J., & FitzGibbon, L. (2022). Child's Play: Examining the Association Between Time Spent Playing and Child Mental Health. *Child Psychiatry & Human Development*, pp. 1–9.
- Ernst, J. (2018). Exploring Young Children's and Parents' Preferences for Outdoor Play Settings and Affinity toward Nature. *International Journal of Early Childhood Environmental Education*, 5(2), 30–45.
- Evans, G. W., Otto, S., & Kaiser, F. G. (2018). Childhood Origins of Young Adult Environmental Behaviour. *Psychological Science*, 29(5), 679–687.
- Flannigan, C., & Dietze, B. (2018). Children, Outdoor Play, and Loose Parts. *Journal of Childhood Studies*, 42(4), 53–60.
- Ernst, J., & Burcak, F. (2019). Young children's contributions to sustainability: The influence of nature play on curiosity, executive function skills, creative thinking, and resilience: *Sustainability*, 11(15), 4212.
- FMT Reporters. (2022, April 15). 1,509 children have gone missing since 2020, says Bukit Aman. *Free Malaysia Today*. <https://www.freemalaysiatoday.com/category/nation/2022/04/15/1509-children-have-gone-missing-since-2020-says-bukit-aman/>
- Gabriela Bento, Gisela Dias. (2017) The importance of outdoor play for young children's healthy development, *Porto Biomedical Journal*, Volume 2, Issue 5, Pages 157-160, ISSN 2444-8664, <https://doi.org/10.1016/j.pbj.2017.03.003>.
- Goldenberg, G., Atkinson, M., Dubiel, J., & Wass, S. (2024). Outdoor learning in urban schools: Effects on 4–5-year-old children's noise and physiological stress. *Journal of Environmental Psychology*, 97, 102362.
- Little, H. (2010). Relationship between parents' beliefs and their responses to children's risk-taking behaviour during outdoor play. *Journal of Early Childhood Research*, 8(3), 315-330. <https://doi.org/10.1177/1476718X10368587>
- Harper, N. J., & Obee, P. (2021). Articulating outdoor risky play in early childhood education: voices of forest and nature school practitioners. *Journal of Adventure Education and Outdoor Learning*, 21(2), 184-194.

- Hassan, N. E., & Khalil, S. R. (2024). The role of parents in fostering environmental stewardship in children. *International Journal of Trendy Research in Engineering and Technology*, 09(01), 56–63. <https://doi.org/10.54473/ijtret.2024.9107>
- Hunter, S., Spence, J. C., Leatherdale, S. T., & Carson, V. (2022). Associations Between Parents' Perceived Neighborhood Environment and Objectively Measured Walkability with Their Children's Physical Activity. *Journal of Physical Activity and Health*, 19(12), 811-819.
- Institute for Public Health. (2020). *National Health and Morbidity Survey (NHMS) 2019: Non-communicable diseases, healthcare demand, and health literacy—Key Findings*. National Institutes of Health, Ministry of Health Malaysia. <https://www.iku.gov.my/nhms>
- Johnstone, A. et al. (2022) Nature-based early childhood education and children's physical activity, sedentary behaviour, motor competence, and other physical health outcomes: a mixed-methods systematic review. *Journal of Physical Activity and Health*, 19(6), pp. 456-472.
- Kandemir, M., & Sevimli-Celik, S. (2021). No muddy shoes, no dirty clothes! Examining the views of teachers and parents regarding children's outdoor play and learning. *Journal of Adventure Education and Outdoor Learning*, 1-22.
- Kernan, M. (2010). Outdoor affordances in early childhood education and care settings: Adults and children's perspectives. *Children, Youth, and Environments*, 20(1), 152–177.
- Kiewra, C., & Veselack, E. (2016). Playing with Nature: Supporting Preschoolers' Creativity in Natural Outdoor Classrooms. *International Journal of Early Childhood Environmental Education*, 4(1), 70-95.
- Koepp, A. E., Gershoff, E. T., Castelli, D. M., & Bryan, A. E. (2022). Total play time needed for preschoolers to reach the recommended amount of non-sedentary activity. *International Journal of Environmental Research and Public Health*, 19(6), 3354.
- Little, H. (2015). Mothers' beliefs about risk and risk-taking in children's outdoor play. *Journal of Adventure Education & Outdoor Learning*, 15(1), 24–39. <https://doi.org/10.1080/14729679.2013.842178>
- Louv, R. *Last Child in the Woods: Saving our Children from Nature-Deficit Disorder*; revised and updated ed.; Atlantic Books: London, UK, 2010.
- Mann, J., Gray, T., Truong, S., Brymer, E., Passy, R., Ho, S., & Cowper, R. (2022). Getting Out of the Classroom and Into Nature: A Systematic Review of Nature-Specific Outdoor Learning on School Children's Learning and Development. *Frontiers in Public Health*, 1270.
- Mann, J., Gray, T., Truong, S., Sahlberg, P., Bentsen, P., Passy, R., ... & Cowper, R. (2021). A systematic review protocol to identify the key benefits and efficacy of nature-based learning in outdoor educational settings. *International Journal of Environmental Research and Public Health*, 18(3), 1199.
- Margrete Skar, Line Camilla Wold, Vegard Gundersen & Liz O'Brien (2016): Why do children not play in nearby nature? Results from a Norwegian survey, *Journal of Adventure Education and Outdoor Learning*.
- Mart, M. (2021). Parental Perceptions to Outdoor Activities. *International Journal of Progressive Education*, 17(4), 358-372.
- MacQuarrie, M., McIsaac, J. L. D., Cawley, J., Kirk, S. F., Kolen, A. M., Rehman, L., & Stone, M. R. (2022). Exploring parents' perceptions of preschoolers' risky outdoor play using a socio-ecological lens. *European Early Childhood Education Research Journal*, 1-16.
- McFarland, A. L., Hammond, D. E., Zajicek, J. M., & Waliczek, T. M. (2011). Growing minds: The development of an instrument to measure parental attitude toward nature and their child's outdoor recreation. *Horttechnology*, 21(2), 225-229.
- McFarland, A., Zajicek, J., & Waliczek, T. (2014). The relationship between parental attitudes toward nature and the amount of time children spend in outdoor recreation. *Journal of Leisure Research*, 46(5), 525-539.
- McFarland, L., & Laird, S. G. (2018). Parents and early childhood educators' attitudes and practices about children's outdoor risky play. *Early Childhood Education Journal*, 46, 159-168.
- McHugh, T., Litchfield, C., Pearson, E., & Le Busque, B. (2023). The Relationship Between Parental Knowledge, Attitudes, and Behaviour: Australian Primary School-aged Children and Nature Experiences. *Journal of Adventure Education and Outdoor Learning*, 1-18.
- McLean, K., Lake, G., Wild, M., Licandro, U., & Evangelou, M. (2023). Perspectives of play and play-based learning: What do adults think play is? *Australasian Journal of Early Childhood*, 48(1), 5-17. <https://doi.org/10.1177/18369391221130790>
- Ministry of Education (MOE). (2020). *Malaysia Education Blueprint 2013-2025 (Preschool to Post-Secondary Education)*. Retrieved from [https://www.moe.gov.my/images/dasar-kpm/articlefile\\_file\\_003108.pdf](https://www.moe.gov.my/images/dasar-kpm/articlefile_file_003108.pdf)
- Mitra, R., Moore, S. A., Gillespie, M., Faulkner, G., Vanderloo, L. M., Chulak-Bozzer, T., ... & Tremblay, M. S. (2020). Healthy movement behaviours in children and youth during the COVID-19 pandemic: Exploring the role of the neighbourhood environment. *Health & Place*, 65, 102418.

- Moore, R. C. (2017). *Childhood's domain: Play and place in child development* (Vol. 6). Routledge.
- Murray, E. J., & Williams, P. H. (2019). Risk-taking and Assessment in Toddlers During Nature Play: The Role of Family and Play Context. *Journal of Adventure Education and Outdoor Learning*, 20(3), 259–273.
- Mustapa, N. D., Maliki, N. Z., Aziz, N. F., & Hamzah, A. (2019). Children's direct and indirect experiences with nature and their connectedness to nature. *Planning Malaysia*, 17.
- Nelson Nieheus, A., Bundy, A., Broom, A., Tranter, P., Ragen, J., & Engelen, L. (2013). Everyday uncertainties: Reframing perceptions of risk in outdoor free play. *Journal of Adventure Education & Outdoor Learning*, 13(3), 223–237.
- Parsons, K. J., & Traunter, J. (2019). Muddy knees and muddy needs: parents' perceptions of outdoor learning. *Children's Geographies*, 0(0), 1–13. <https://doi.org/10.1080/14733285.2019.1694637>
- Passmore, H. A., Martin, L., Richardson, M., White, M., Hunt, A., & Pahl, S. (2021). Parental/guardians' connection to nature better predicts children's nature connectedness than visits or area-level characteristics. *Ecopsychology*, 13(2), 103–113.
- PlanMalaysia. (2022). *Panduan inisiatif persekitaran mesra kanak-kanak (PEREKA)*. Jabatan Perancangan Bandar dan Desa.
- Prins, J., van der Wilt, F., van der Veen, C., & Hovinga, D. (2022). Nature play in early childhood education: A systematic review and meta ethnography of qualitative research. *Frontiers in psychology*, 13, 995164.
- Prins, J., Gaikhorst, L., & Hovinga, D. (2025). Nature as a Co-Teacher in Early Childhood Language Education. *Early Childhood Education Journal*, 1–14.
- Raj, D., Mohd Zulkefli, N., Mohd Shariff, Z., & Ahmad, N. (2022). Determinants of Excessive Screen Time among Children under Five Years Old in Selangor, Malaysia: A CrossSectional Study. *International journal of environmental research and public health*, 19(6), 3560. <https://doi.org/10.3390/ijerph19063560>
- Ramsden, R., Mount, D., Lin, Y., Fox, E., Herrington, S., Loebach, J., Cox, A., Bundy, A., Fyfe-Johnson, A. L., Sandseter, E. B. H., Stone, M., Tremblay, M. S., & Brussoni, M. (2025). Results from the PROMoting Early Childhood Outside cluster randomised trial evaluating an outdoor play intervention in early childhood education centres. *Dental Science Reports*, 15(1). <https://doi.org/10.1038/s41598-025-85397-1>
- Ray, C., Kokkonen, J., Simonsen, N., Wackström, N., Ray, J., & Engberg, E. (2022). Parent-child nature visits and young Finnish children's nature connectedness. *European Journal of Public Health*, 32(Supplement\_3). <https://doi.org/10.1093/eurpub/ckac131.336>
- Remmers, T., Broeren, S.M., Renders, C.M. *et al.* (2014). A longitudinal study of children's outside play using family environment and perceived physical environment as predictors. *Int J Behav Nutr Phys Act* 11, 76 <https://doi.org/10.1186/1479-5868-11-76>
- Richardson, M., Passmore, H. A., Barbett, L., Lumber, R., Thomas, R., & Hunt, A. (2020). The green care code: How nature connectedness and simple activities help explain pro-nature conservation behaviours. *People and Nature*, 2(3), 821–839.
- Roberts, A.; Hinds, J.; Camic, P.M. Nature activities and wellbeing in children and young people: A systematic literature review. *J.Adventure Educ. Outdoor Learn.* 2019,20, 298–313.
- Rosa, C. D., Profice, C. C., & Collado, S. (2018). Nature experiences and adults' self-reported pro-environmental behaviours: The role of connectedness to nature and childhood nature experiences. *Frontiers in Psychology*, 9, 1055.
- Rouse, E. (2016). Making learning visible—parents' perceptions of children's learning outdoors. *Early Child Development and Care*, 186(4), 612–623.
- Ryan, D. P. J. (2001). Bronfenbrenner's ecological systems theory. Retrieved January 9, 2012.
- Sadownik, A.R. (2023). Bronfenbrenner: Ecology of Human Development in Ecology of Collaboration. In: Sadownik, A.R., Višnjić Jevtić, A. (eds) (Re) theorising More-than-parental Involvement in Early Childhood Education and Care. *International Perspectives on Early Childhood Education and Development*, vol 40. Springer, Cham. [https://doi.org/10.1007/978-3-031-38762-3\\_4](https://doi.org/10.1007/978-3-031-38762-3_4)
- Saleh, S. F., Latip, N. S. A., & Rahim, A. A. (2018). Assessment of learning with nature in preschool. *Planning Malaysia*, 16(3), 46–56. <https://doi.org/10.21837/pmjournal.v16.i7.499>
- Saunders, M. N. (2012). Choosing research participants. *Qualitative organizational research: Core methods and current challenges*, 35–52.
- Shi, Y. (2017). Explore Children's Outdoor Play Spaces of Community Areas in High-density Cities in China: Wuhan as an Example. *Procedia Engineering*, 198(September 2016), 654–682. <https://doi.org/10.1016/j.proeng.2017.07.118>
- Sia, M. K., Yew, W. C., & Low, X. W. (2023). Exploring the Causal Effects of Outdoor Play on School Readiness of Preschoolers in the Klang Valley, Malaysia. *Sustainability*, 15(2), 1170.



- Saimon, R., Choo, W. Y., & Bulgiba, A. (2015). "Feeling Unsafe" A Photovoice Analysis of Factors Influencing Physical Activity Behaviour Among Malaysian Adolescents. *Asia Pacific Journal of Public Health*, 27(2), NP2079-NP2092.
- Speldewinde, C., & Campbell, C. (2022). Mathematics learning in the early years through nature play. *International Journal of Early Years Education*, 30(4), 813-830.
- Speldewinde, C., Kilderry, A., & Campbell, C. (2021). 'All the things children can see': understanding children's noticing in bush kinders. *Journal of Outdoor and Environmental Education*, 24(2), 151-167.
- Spiteri, J. (2020). Young Children's Experiences in Nature as a Precursor to Achieving Sustainability. In: Leal Filho, W., Azul, A., Brandli, L., Özuyar, P., Wall, T. (eds) *Quality Education. Encyclopedia of the UN Sustainable Development Goals*. Springer, Cham. [https://doi.org/10.1007/978-3-319-69902-8\\_121-1](https://doi.org/10.1007/978-3-319-69902-8_121-1)
- Tillberg Mattsson, K. (2002). Children's (in) dependent mobility and parents' chauffeuring in the town and the countryside. *Tijdschrift voor economische en sociale geografie*, 93(4), 443-453.
- Tremblay, M. S., Chaput, J. P., Adamo, K. B., Aubert, S., Barnes, J. D., Choquette, L., ... & 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, 1-32.
- Uline, C. L., & Kensler, L. A. (2021). Play: Restore Nature Play into the School Day. In *A Practical Guide to Leading Green Schools* (pp. 132-151). Routledge.
- United Nations. (1989). *Convention on the Rights of the Child*. United Nations Treaty Series, 1577, 3. <https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-child>
- Van Truong, M., Nakabayashi, M., & Hosaka, T. (2023). Parents' orientation is more important for children's visits to green spaces than the availability of spaces and time. *Landscape and Urban Planning*, 235, 104738.
- Van Truong, M., Nakabayashi, M., & Hosaka, T. (2022). How to encourage parents to let children play in nature: Factors affecting parental perception of children's nature play. *Urban Forestry & Urban Greening*, 69, 127497.
- Waters, J., & Rekers, A. (2019). Young Children's outdoor play-based learning. *Encyclopedia on early childhood development*.
- Wu, H., Ji, R., & Jin, H. (2023). Parental factors affecting children's nature connectedness. *Journal of Environmental Psychology*, 87, 101977.
- Zhai, J., Chen, Y., Tian, P., Sun, D., & Sun, J. (2024). Revealing the linkage between parental perspectives on outdoor activities and the health-related quality of life in young children. *Early Child Development and Care*, 1–20. <https://doi.org/10.1080/03004430.2024.2395386>