



Deposited via The University of York.

White Rose Research Online URL for this paper:

<https://eprints.whiterose.ac.uk/id/eprint/241060/>

Version: Published Version

Article:

COMPTON, SARAH, Morton, Kate, Savage, Louise et al. (2026) Nurturing in nature: an evaluation of a nature-based group for parents and caregivers of babies and young children: a thematic analysis and logic model. *Wellbeing Space and Society*. 100358. ISSN: 2666-5581

<https://doi.org/10.1016/j.wss.2026.100358>

Reuse

This article is distributed under the terms of the Creative Commons Attribution (CC BY) licence. This licence allows you to distribute, remix, tweak, and build upon the work, even commercially, as long as you credit the authors for the original work. More information and the full terms of the licence here:


<https://creativecommons.org/licenses/>

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.



Nurturing in nature: an evaluation of a nature-based group for parents and caregivers of babies and young children – a thematic analysis and logic model

Sarah M.B. Compton^{a,*} , Kate Morton^a, Louise Savage^b, Harald Fredheim^c, Hannah Armitt^d, Louise Tracey^e, Sarah Louise Blower^a

^a Department of Health Sciences, University of York, York, UK

^b Phoenix Families CIC, Hessle, UK

^c Department of Archaeology, University of York, York, UK

^d Research and Development Department, Humber Teaching NHS Foundation Trust, Willerby, UK

^e School of Education, University of Leeds, UK

ARTICLE INFO

Keywords:

Nature-based intervention
Mental health
Green space
Parents
Museums
Flexible, free-choice intervention
Early years
Logic model

ABSTRACT

Many parents/caregivers experience mental health challenges during the early years of their child's life. These difficulties not only have a negative long-term impact on child health and development but also incur a significant cost to society. While nature-based interventions show promise for improving mental health and wellbeing, their potential to support parents/caregivers with young children remains under-researched. This study evaluated a nature-based parent/caregiver support intervention for parents/caregivers with children under five situated within a city-centre museum garden. The intervention jointly focussed on supporting parent/caregiver wellbeing and promoting mindful engagement with nature. Using qualitative methods, including semi-structured interviews (n=15), an observation and two workshops to develop a logic model, this study explored the experiences and perspectives of parents/caregivers, facilitators and museum staff regarding the intervention's perceived impacts and mechanisms of change. The intervention was perceived to promote parent/caregiver wellbeing by providing opportunities to relax and connect with nature, interact with other parents/caregivers and spend time with their children. The evaluation also identified specific characteristics that facilitated these outcomes, including its flexible, free-choice format, a primary focus on parent/caregiver wellbeing and the facilitators' strong interpersonal skills. Furthermore, the intervention fostered relationships between museum staff, facilitators and families, leading to reported improvements in museum staff wellbeing, job satisfaction and sustained family engagement with the museum. This study suggests perceived acceptability of nature-based interventions in museum settings. However further mixed method research is needed to determine intervention effectiveness, for whom and under what conditions.

1. Background

1.1. Green space and wellbeing

Spending time in green spaces positively impacts the health and wellbeing of both adults and children. Systematic reviews have demonstrated improved mental wellbeing in various adult populations (Coventry et al., 2021) as well as benefits for children's mental wellbeing, health, and cognitive development (McCormick, 2017). Yet, many families lack easy access to, or do not routinely engage with, green

spaces (McCormick, 2017; Public Health England, 2020). Green spaces include both wild, undeveloped land with natural vegetation and urban green spaces, such as parks and street-side greenery (Twhig-Bennett and Jones, 2018). However, studies exploring how associations between green spaces and mental wellbeing vary between urban and rural settings are limited (Houlden et al., 2018). For this paper, a nature-based intervention refers to any initiative, practice or approach primarily designed to immerse people in nature to enhance their health and wellbeing (Shanahan et al., 2019).

Despite the potential benefits of nature-based interventions, their

* Corresponding author at: Department of Health Sciences, University of York, York YO10 5DD, UK.

E-mail address: sarah.compton@york.ac.uk (S.M.B. Compton).

<https://doi.org/10.1016/j.wss.2026.100358>

Received 25 September 2025; Received in revised form 20 January 2026; Accepted 30 January 2026

Available online 31 January 2026

2666-5581/© 2026 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>).

application to parents/caregivers with children under the age of five remains underexplored. A recent study by Walker-Mao et al. (2024) highlighted this gap, finding only a small number of low quality studies on nature-based interventions for pregnant and postpartum women experiencing depression and anxiety. Furthermore, there have been no reviews of qualitative studies, or those including parents/caregivers without diagnosed conditions, and even less research involving fathers and co-parents. In this article, the term 'parent' refers to any individuals involved in a child's care, such as birthing and non-birthing partners, grandparents, stepparents, foster parents and other significant figures. Caring for a young child can impact the health and wellbeing of everyone involved. By adopting a broad definition of the term 'parent', this article ensures that no group is overlooked.

1.2. Parent mental health and infant relationships

Many parents struggle with their mental health and loss of identity after a new child joins the family (Jewell et al., 2022). As babies are entirely dependent on their parents for both physical and emotional support, the stressors affecting parental mental health can seriously disrupt positive parenting practices and the parent-infant relationship with lasting effects on the child's development (Lawless et al., 2014). Furthermore, studies indicate that the ages of two to five constitute another sensitive period for children, as exposure to maternal depression during this time can increase the risk of emotional disorder in later life (Naicker et al., 2012). The economic burden of mental ill health in the UK is estimated to be £300 billion a year (Cardoso and McHayle, 2024). For perinatal mental health problems, a cost of £8.1 billion for each one-year birth cohort has been predicted, of which two-thirds relate to potential negative outcomes for the child over the life course (Bauer et al., 2014). As such there is a growing impetus from both a policy and research perspective to support parents and infants during this critical period (Hurt et al., 2018; Powell et al., 2021).

1.3. Barriers to accessing support

Many parents of young children face barriers in seeking and accessing treatment for mental health difficulties (Webb et al., 2021). For some women, particularly those within the perinatal period, pharmacological treatments are found to be less favourable due to concerns over side effects and potential risks to the infant (Smith et al., 2019). While psychological interventions may be preferred, their uptake is often hindered by difficulties in access, such as long waiting lists or childcare challenges (Viveiros and Darling, 2019; Webb et al., 2023). Furthermore, stigma or scepticism associated with treatment, often within culturally diverse groups, can lead to a reluctance in seeking help (Ash et al., 2025; Edge and MacKian, 2010; Webb et al., 2023). Fathers and other non-birthing parents, though less frequently considered, also face obstacles, including a lack of information and services, stigma, the prioritisation of maternal and infant needs, and the delegitimisation of their experiences (Copland and Hunter, 2025; Darwin et al., 2017). Given these constraints, alternative approaches are needed to support the mental health and wellbeing of families with young children.

1.4. Nature-based interventions

Nature-based interventions are increasingly recognised as a promising means of support for parents with young children. Hall et al. (2024) identified three interconnected pathways through which nature-based interventions may improve perinatal mental health: biologically/physiologically via better sleep (Kokkonen et al., 2021) and activity (Hatfield et al., 2022; Hazlehurst et al., 2022); relationally/socially through enhanced parent-infant interaction (Ward et al., 2019a), nature and social connectedness (Sachs et al., 2022); and cognitively/creatively by boosting sensory engagement (Fullam et al., 2021),

emotional exploration (Ríos-Rodríguez et al., 2024) and self-efficacy (Barnes et al., 2021). Although research in this area is still developing, evidence suggests the promising impact of nature-based interventions on parental wellbeing and parent-infant relationships. Further research is therefore crucial to fully understand and leverage these potential benefits for parental mental health and child development.

1.5. The current study

This study evaluates an existing nature-based parent support intervention for parents with pre-school children aged under five. The intervention takes a novel approach, both in its unique setting within the secure walled garden of a city centre museum and in its primary focus on providing informal support for parents. Not yet formally evaluated, this early-stage qualitative research aims to provide a fundamental understanding of the intervention, aligning with the established principles of complex intervention evaluation and development (Skivington et al., 2021). A crucial aspect of this preliminary work involved developing a logic model for the intervention. This model provides a visual representation of the intervention's intended pathway to change, clarifying its inputs, characteristics, components, techniques, mechanisms and expected short-, medium- and long-term outputs. Logic models are instrumental in the evaluation process, shaping objectives, design and methodological choices. By collecting qualitative insights into parents', facilitators' and museum staff's experiences, alongside a clear articulation of its programme logic, this evaluation marks the first steps in building an evidence base for the intervention. Throughout this paper the intervention will frequently be referred to as a 'group' reflecting the language used by parents, facilitators and museum staff.

1.5.1. Study aim

The aim of this exploratory study was to understand parents', facilitators' and museum staff's experiences and perceptions about the nature-based parent support intervention, and to develop a logic model, mapping theorised outcomes (at multiple-levels) and mechanisms of change.

2. Methods

A qualitative research design comprising semi-structured interviews and an observation of the group was employed to address the study objectives. Additionally, the research team conducted two stakeholder workshops to develop a logic model and narrative summary outlining the intervention's theorised mechanisms, outcomes and influencing contextual factors. This study obtained ethical approval from the University of York's Department of Health Sciences' Research Governance Committee (HSRGC/2024/626/G). The manuscript was prepared to adhere to the COREQ-checklist (Tong et al., 2007) (see Supplementary material 1).

2.1. Study setting and intervention

The nature-based parent support intervention was developed by Phoenix Families CIC for parents and children under five, jointly focussing on parent mental health and engagement with nature (a completed TIDieR Checklist (Hoffmann et al., 2014) describing the intervention has been included as Supplementary material 2). The group aims to encourage parents to take a break and be mindful, while promoting positive, playful interactions that promote parent-child relationships. Initially offered exclusively to parents with babes in arms, the group had been set up to support those who had gone through pregnancy and birth during lockdown. However, as the babies grew and became toddlers, the facilitators recognised that parents needed support beyond these early stages. Subsequently, the intervention was offered to parents and caregivers with pre-school children of all ages. Moreover, by supporting all caregiver-child dyads, including grandparents and

childminders, the group recognises the health and wellbeing implications for anyone providing care to young children.

Sessions are flexible and free-choice, during which facilitators use their expertise to maintain a calm and relaxed environment that is both responsive to parents' needs and supportive of their autonomy. Nature-based experiences are available for parents and children to explore both jointly and independently, including natural crafts, such as leaf and petal bashing (creating patterns by crushing leaves and petals in fabric), sensory play with homemade scented playdough and nature observations with magnifying glasses. Facilitators lay out the materials for these activities and may decide to demonstrate them depending on the situation, however there are no organised group-based activities.

During each session, the facilitators welcome parents with a drink on arrival. The facilitators aim to speak with every adult present, asking how they are and inviting them to talk about their wellbeing if they feel happy to do so. At the time of data collection, new parents attending the group were given a welcome pack comprising a waterproof zip wallet filled with a small notebook for reflections, a pencil made from a twig, a meditation stone, a camomile tea bag, a small vial with peppermint oil and a welcome note.

The intervention is delivered by two skilled facilitators. Facilitator 1, a qualified social worker and therapist, has extensive experience working with children and families, including managing a perinatal counselling service. They also have experience and training in 'walk and talk' therapy (Doucette, 2004). Facilitator 2 is trained in children's care and development and has experience working as both a Special Educational Needs Coordinator (SENCO) and safeguarding officer. They have owned and operated a preschool and have considerable experience working with children and families. Both facilitators are parents and use their lived and professional experience to work sensitively and knowledgeably with children and parents.

Group sessions take place face-to-face within an urban green space comprising a secure walled garden adjoining a local museum (see photo in Supplementary material 3 and description Supplementary material 4) with a connected indoor space (used only in bad weather). While the garden is open to the public, it is secluded and not visible from outside the museum. Initially delivered in a small open woodland outside the city, the intervention aimed to support parents while observing social distancing guidelines. After obtaining additional funding, the facilitators approached the museum to request use of the garden space in kind. Noticing an increase in footfall from families with young children, the museum secured funding to continue hosting the group. This funding was still in place at the time of data collection.

One free, drop-in session runs weekly for most of the year and is aimed at all parents and caregivers with pre-school children. The sessions are open to the public with no referrals from other organisations. Most families discover the group online, primarily through local websites advertising parent-child groups or social media, through the museum or word of mouth. The sessions usually attract between five and ten families, however attendance numbers and participating families can vary from week to week. Attendance tends to peak during the summer months and decrease in winter. Given the drop-in nature of the group, duration of parent engagement varies greatly, ranging from frequent participation over several years to infrequent, convenience-based visits. At the time of data collection, the group was funded by the Arts Council England however support has varied, with other organisations contributing both before and after this period. Originally lasting one and a half hours, the sessions now run for one hour due to funding constraints. This is a flexible personalised intervention which facilitators tailor to meet parents' needs through unstructured one-to-one conversations.

2.2. Sampling and recruitment

Parents were sampled opportunistically. This non-probabilistic method involved inviting all parents to take part in the study during

the sessions attended by the lead researcher. The recruitment process for parents is detailed in Fig. 1. Individuals were selected based on their availability and willingness to participate. To enhance sample diversity, recruitment prioritised parents with different relationships to the child, and those who had been attending for varying lengths of time. A pragmatic sample size of five to ten parents was targeted, a number determined by available resources, research capacity and the typical number of families attending the group. Due to the drop-in nature of the group, the specific families in attendance varied between each session attended by the researcher. Consequently, while some families may have participated in both the observation and the interview, others took part in only one or the other.

A purposive total population sampling approach was also used to recruit the two group facilitators to the study. Museum staff directly involved with the group either through the commissioning of the intervention or through consistent face-to-face engagement with facilitators and parents were purposively sampled.

The researchers invited facilitators and museum commissioning staff to interview via email. Museum commissioning staff then provided the researcher with the contact details for front of house staff involved in greeting parents to the group. Front of house staff were subsequently invited to interview by the researcher via email.

2.2.1. Eligibility criteria

Parents were eligible to participate in the study if they had attended at least one group session with a pre-school child at the museum in the last year and were aged over 18 years. This aimed to include differing experiences of parents, including those who had decided not to continue attending the group.

Facilitators delivering the sessions were eligible to participate. Museum staff were eligible to participate if they were either:

1. Involved in the commissioning of the group.
2. Front of house staff involved in welcoming visitors to the museum.

2.2.2. Participant identification

2.2.2.1. Parent interviews. In the week before the research began, facilitators informed parents about the study through flyers distributed during the group session and via their Facebook page. Flyers included a QR code linked to an online consent to contact form. For parents wanting further information, the facilitators were available to discuss the research and provide paper consent to contact forms.

The lead researcher attended three sessions to meet with families, answer any questions about the research and conduct interviews (sessions two and three only). Interested parents were given an information sheet and consent form. Parents unable to be interviewed during the session, whether by choice or time constraints, provided written consent for the researcher to contact them later to schedule an interview. Participants either completed a paper consent form or provided verbal consent at the start of the interview. This was obtained by the researcher, who read out the statements from the consent form and asked participants to confirm agreement. Verbal confirmation was audio-recorded and securely stored separately from the interview data.

2.2.2.2. Museum staff and facilitator interviews. Participant information sheets and consent forms were emailed to potential participants fitting the eligibility criteria.

2.2.2.3. Observation. Prior to the observation, flyers explaining the research were distributed to parents by facilitators during the sessions and via their Facebook page. The researcher was also available to discuss the observation during the previous three sessions they attended. The observation occurred during the researcher's fourth visit, due to the drop-in nature of the group it was unclear which families would be

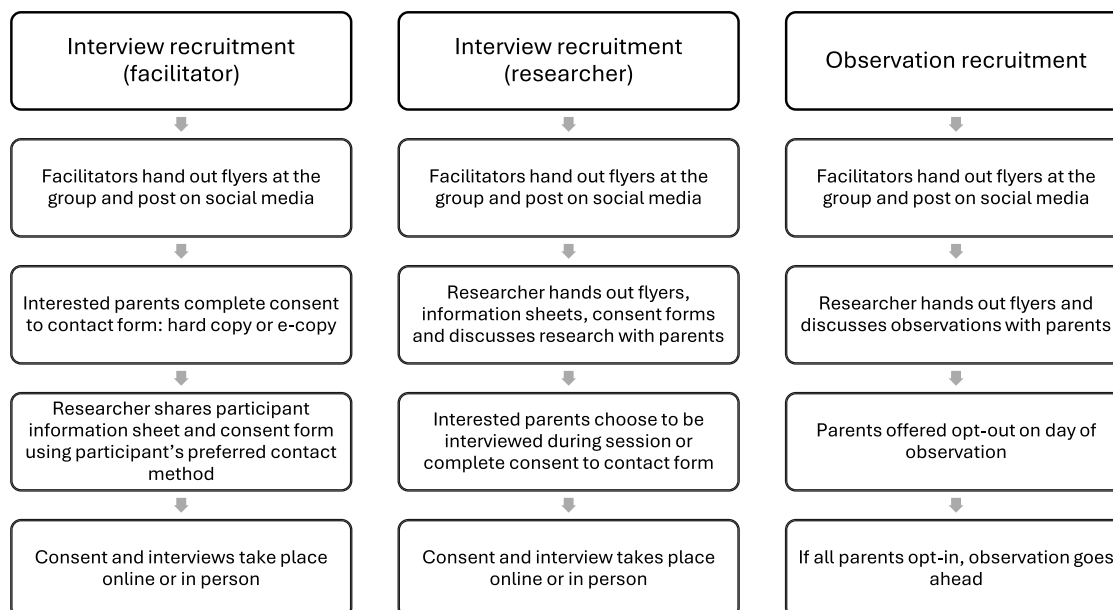


Fig. 1. Recruitment process for parents.

present. For example, some families may have attended one of the previous three sessions and been aware of the planned observation while others were not. On the day of the observation, parents were approached by the lead researcher who explained the focus of the observation (e.g. how the group operates, how and what attendees are engaging with), the anonymity of the observation (i.e. no personal details or identifiable data will be recorded) and was available to answer any questions. A verbal opt-out recruitment process was operated whereby parents were given the option to be excluded from the observation. As such, the details of parents in attendance were not collected. Due to the group-based nature of the intervention, the observation required unanimous consent from all attending families (Handley et al., 2020). Without full consent, the researcher could not guarantee that an opt-out family would not be observed. If full consent was not obtained, the researcher would return the following week. If after three weeks unanimous consent was still not granted, the observation would be cancelled.

2.3. Data collection

The interviews and observation were conducted by the lead author, an experienced applied researcher with postgraduate qualifications in research methods.

2.3.1. Interviews

One-to-one semi-structured interviews (museum front of house staff participated in a joint interview) were carried out either in-person during the group session, via video call or by telephone, according to participant preference. Guided by study objectives, parents, facilitators and museum staff topic guides (see Supplementary material 5) were developed *a priori* by the research team. Both prepared and *ad hoc* questioning was utilised through a semi-structured format, fostering a conversational approach.

For parent interviews, optional demographic questions were included to capture the respondents' age group, ethnicity, relationship to the child(ren) they brought to the group and the age of the child(ren). Interviews typically lasted 10 to 15 minutes and parents received a £10 shopping voucher as a 'thank you' for taking part. For facilitators and museum staff, all interviews took place via online video call. Facilitator interviews lasted around 50 minutes, and museum staff interviews

lasted between 20 and 30 minutes. Following the interview, audio recordings were transcribed by the lead author and checked for accuracy. They were not returned to participants for comment.

2.3.2. Observation

An unstructured observation took place during the fourth group session attended by the researcher. Rather than having a predetermined schedule, the unstructured observation allowed the researcher to develop a holistic understanding of behaviour and the research context by co-constructing knowledge with study participants (Mulhall, 2003). The unstructured observation enriched the interviews by offering a comprehensive view of how the sessions operated and how the group interacted with each other and the physical environment.

The researcher was an observer as participant (Mulhall, 2003), taking part in the session while their role as an observer was known to the parents. Extensive notes were not taken during the session. Adopting a non-invasive approach, the researcher observed unobtrusively by taking notes in a journal while seated on the wall surrounding the central grassy area. This familiar and casual presence was intended to minimise intrusion. Having attended and participated in three previous sessions, it was anticipated that the researcher's presence felt more comfortable and natural to parents than would an impartial observer taking notes and not interacting with families (Mulhall, 2003).

Directly after the session, the researcher wrote up their field note observations and reflections. These were organised into an *a priori* semi-structured schedule guided by the study objectives (see supplementary material 4).

2.4. Data analysis

Interview and observation data were analysed using NVIVO 15 (Lumivero, 2024). Taking an iterative approach, thematic analysis was conducted on the datasets informed by study objectives and following the broad steps outlined by Braun and Clarke (2006). Where possible, interview findings were triangulated with observation data to validate extracted themes. The analysis was conducted by the lead author, a Research Assistant and parent identifying as a White Irish woman with master's degrees in research methods and applied psychology research. The analysis was supported by two experienced qualitative researchers

identifying as White British women, both are psychologists with extensive knowledge of family wellbeing and child mental health and expertise in intervention design and evaluation.

As a parent who has attended a range of parent-child groups with her own children, the lead researcher was aware of how her own experiences and perspective informed the research. To understand how these shaped her interpretation, she engaged in regular discussions with co-researchers, ensuring assumptions were challenged and no undue weight was placed on participant experiences that resonated with her own.

Following data familiarisation, two parent transcripts were coded by a single researcher. The research team met to discuss initial reflections, impressions and possible codes. Coding was inductive and the research team met regularly to iteratively refine codes, identify and discuss emergent patterns in the data and to reach consensus on the development of themes and sub-themes that responded to the study objectives.

2.5. Logic Model

Prior to the interviews, a stakeholder workshop was held with the researchers, facilitators, museum team commissioning the sessions, museum front of house staff and experts in museum studies and green spaces. Attendees discussed the intervention in detail, focussing on the perceived need for the group, core aims, activities, barriers and facilitators to delivery and outcomes, including those that were unintended. Based on these discussions, a draft logic model diagram and accompanying narrative were developed by the research team explaining the theorised mechanisms, outcomes and contextual factors influencing the intervention.

The logic model was revisited after the semi-structured interviews and observation had been completed, to draw on the learning from these activities. A second workshop was held with the original stakeholder group where changes based on the research findings were discussed and integrated into the revised model.

3. Results

3.1. Participant demographics

The final sample included both mothers (n=7) and fathers (n=2). Most parents were aged between 31-40 years (n=6) with the remaining aged 41-50 years (n=3). The majority of parents attended the group with one child (n=6) with the rest bringing two children with them (n=3). Children were aged between two months and four and a half years. The length of time parents had been attending the intervention ranged between less than a month to two and a half years with some being frequent attendees while others came to the group on a more casual basis. Eight participants were White British, and one participant was White Eastern European.

Museum staff comprised employees involved in the commissioning of the group (n=2) and front of house staff responsible for welcoming visitors (including parents) (n=2). Tenure at the museum varied between staff members with some being in post for approximately two years while others had been with the museum for over a decade.

Facilitators (n=2) had been delivering the intervention for two and three years respectively.

3.2. Thematic analysis

The perspectives of parents, facilitators and museum staff are presented together throughout the analysis. Four themes were constructed from the data: 1) nurturing parents and caregivers in everyday moments, 2) wild, free and together in nature, 3) impacts for parents, children, facilitators and museum staff, 4) shared values, developing relationships and successful partnerships. Themes and subthemes are presented in Table 1. Pseudonyms have been used throughout.

Table 1
Summary of themes and subthemes.

Theme	Subtheme
1. Nurturing parents in everyday moments	1.1 Parent-focussed 1.2 Practical care 1.3 Space to talk 1.4 Building belonging within boundaries 1.5 Calmness
2. Wild, free and together in nature	2.1 Opportunities to be in nature 2.2 A diverse safe space 2.3 Freedom to choose 2.4 Play with natural materials
3. Impacts for parents, children, facilitators and museum staff	3.1 Impacts for parents 3.2 Impacts for children 3.3 Impacts for facilitators 3.4 Impacts for museum staff
4. Shared values, developing relationships and successful partnerships	4.1 Mutual respect and relationship building 4.2 Successful partnerships, accessibility and shared benefits 4.3 Support and sustainability

Theme 1: Nurturing parents and caregivers in everyday moments

Participants noted that the group distinguished itself from other parent-child groups in prioritising parent wellbeing. Parents appreciated how facilitators created a calm, non-judgemental environment through their openness and everyday acts of kindness.

1.1. Parent-focussed

Families, facilitators and museum staff described the emphasis on care for parents as a unique feature of the intervention, setting it apart from other parent-child groups which are more focussed on children. For many parents, accessing a group that supported their own wellbeing was not something they had considered before attending the group:

Everything is focussed on children, not necessarily the wellbeing of parents and I think especially in these early years you don't realise how much of an impact it has on you as an individual. You can have lots of people around you and you can still feel very isolated and lonely...It just made me realise there's a lack of that around and made me think how there could be more things like this I think for care. (Bella, parent)

Museum staff also recognised the absence and importance of a group both within their own provision for families and in other organisations in the local area:

I think it's not like anything else we offer...I've not really seen anything like it. I think it's the fact that it focusses on parents...We do the sessions to look after the children and their development but just making sure that parents and carers get a look in as well, I think that's really important and quite different. (Beth, museum staff)

Facilitators explained the unique value of the group in addressing the difficulties experienced by parents, often filling a critical support gap:

It's important because what we hear from our parents is that they feel not heard, not seen and brushed off...And [at the group] every problem's valued...I think it's important to have somewhere for parents to go to feel comfortable, safe and unjudged. (Sophia, facilitator)

1.2. Practical care

Parents reflected on how the group created a sense of being cared for. Small acts of kindness, such as being given a cup of tea, made a difference especially when not receiving support elsewhere:

They gave me a care package [welcome pack with notebook, pen, teabag etc.], made me a coffee, offered me fruit and asked me how things were going with the new baby...which is nice sometimes to have that care. I don't have family that live nearby, so it's nice people checking in on you and making sure you're alright. (Florence, parent)

For facilitators, making people a drink and remembering each person's preferences was an important way to value parents, recognising the profound impact everyday gestures of compassion can have:

They feel valued because we could be the only person to actually make them a cup of tea... it's very personal because nobody has a drink the same...I think they feel valued and it's an honour, it's a privilege to do it. (Sophia, facilitator)

Observations showed facilitators responding to parents' needs through practical and empathetic gestures. Breastfeeding mothers were given water and sunscreen, refreshments were readily available, and hugs were shared to help create a supportive and caring atmosphere. Furthermore, facilitators actively engaged with children in activities such as painting or tree climbing, providing valuable respite for parents, a feature of practical support greatly appreciated by participants:

I'm definitely looking forward to Fridays...to be able to come here and have that time for myself, even if it's just 5-10 minutes because he's playing somewhere...with someone like today, is awesome. Today is awesome. (Maria, parent)

1.3. Space to talk

In addition to practical support, parents appreciated how the facilitators' open demeanour made them feel comfortable expressing themselves:

[Facilitators] are brilliant...there's been times where I've not been very happy or there's stuff going on...in my life and they just have that openness about them that makes you want to talk. (Jane, parent)

Parents explained how facilitators created this supportive space through their empathy and intuition:

You can always tell people who know how to listen...You never felt like you were being just asked a question for the sake of asking a question...It's not just a greeting...[facilitators] are genuinely asking you. And some of that was in delivery and some of that was in the way that...they could tell something was a bit off [and ask] 'is there anything you want to talk about?' (Susie, parent)

Furthermore, parents highly regarded the facilitators' clinical expertise, which created a trusting space for some to confidently share their difficulties:

I had a really tough time mental health wise...I knew that they understood what those things were, I didn't feel like I had to be as guarded or as masked if I felt shit...It wasn't just mums understanding mums...I understood that they had clinical understanding and for someone like me, who is very cautious and had had very poor mental health support from the health service for decades. It felt really, really important to feel understood by people who knew what they were talking about. (Susie, parent)

Museum staff also recognised how the facilitators' approach enabled them to develop relationships with families:

I think it's [facilitators] that built up such a good rapport with the parents. It's amazing. (Ali, museum staff)

Facilitators explained how they engaged with parents to create that sense of being able to talk. They perceived their role as being open, non-judgmental, empathising whilst not giving advice, to enable parents to articulate their feelings:

It's as simple as, 'what do you think?' or 'what do you need?' And people aren't used to asking them questions of themselves...It's giving them the platform to explore that without sending them down a path...sitting with the uncomfortable...and just acknowledging that this is hard, it's not something that will be fixed, it's part of the process. (Ellie, facilitator)

1.4. Building belonging within boundaries

Facilitators described providing 'in the moment' support for parents, while balancing the needs of the individual with the wider group. They were also mindful of what was within their professional capacity to provide:

[I'll] have a conversation with a parent that leaves them in a place where they're OK...I might just need to check in with [another parent]...I don't think that's necessarily a bad thing because it gives them time to consolidate...but I'm also conscious we're not a therapy service...it's about helping that person in the moment. (Ellie, facilitator)

Observations reinforced this point. Facilitators moved organically between parents who wanted to talk. They would often return to previous conversations, demonstrating attentive follow up.

Furthermore, parents appreciated facilitators' commitment to checking in with everyone, suggesting that this level of care was not guaranteed in other settings:

Because you get groups where one parent...just dominates the conversation with whoever's in charge...So, I'll put off for another week and hope that that parent doesn't turn up whereas at [the group], they seem to have time for everybody...It's in a way a bit of a breath of fresh air this group. (James, parent)

Facilitators faced a challenge in balancing the support offered to parents while staying within their professional remit. Even as the end of the session approached, the facilitators made no attempt to tidy up until the last family had left, long past the one-hour time limit. It was clear that if parents needed that extra time to talk, the facilitators would accommodate them. For some parents feeling unhurried contributed to their sense of belonging and worth:

There wasn't this sort of like, bell ringing 'kids, it's time to put everything away'...We all were able to find a way to bring it to a natural end...It's really important because sometimes that might be the only time that you're not doing something to a really strict clock, but it also makes you, it makes you feel like your presence is valued. (Susie, parent)

However, facilitators also recognised how this risked overstepping professional boundaries in terms of giving up their own personal time:

If the parent is hanging around until the end, we will, you know, make a point of acknowledging and we'll try not to get into anything at any depth because we're conscious in terms of boundaries as well. (Ellie, facilitator)

1.5. Calmness

The intervention was distinguished from other groups as parents expressed how they experienced a unique feeling of calmness:

It's just a lovely calming group...I think a lot of baby groups are very intense and you leave feeling exhausted, yeah, fried. Whereas this is kind of the opposite of that. (Bella, parent)

Both parents and museum staff felt that the warm, relaxed approach of the facilitators contributed to the feeling of calmness:

The ladies that run it...are so, they're just incredibly lovely and welcoming...You really don't feel there's any judgement. I've been to groups in the past...and I feel like sometimes people are maybe like, 'no come and sit here' or 'stop doing that' and you don't get any of that from

them which makes me as a parent feel so much happier. (Gemma, parent)

I think in the case of [the group], like the staff that run it...they're just incredible at making you feel really relaxed and at ease. (Olive, museum staff)

Guided by their own values, facilitators aimed to create a calm, judgment free environment, both through their own natural way of being and their approach to engaging with parents:

I think that's just our approach that we're both very calming people. Yeah, we do have a very calm manner about us, and I think that reflects on everybody there because everybody is at peace or seems to be, even with the difficulties that our parents and children bring with them. (Sophia, facilitator)

Observing the group, the sense of calm and peacefulness was palpable. Facilitators moved between roles with ease; for example, one would be talking with a parent while the other was serving drinks or playing with children. Their movements through the space were fluid and natural and it was evident from the smiles and laughter that families were happy and comfortable.

However, the promotional material's description of the group discouraged one parent from attending, feeling their family did not fit in with this perceived image:

I've seen it like on Facebook or something like that...but I've not been before...because it said it was...relaxing...and my daughter's pretty wild and loud...I thought it's probably not something for her to go to...it was only when a friend explained what the group was like that we decided to come. (Gemma, parent)

Theme 2: Wild, free and together in nature

Situated within the museum's garden, the group allowed families to experience the benefits of nature within a safe and peaceful environment. The group's flexible, open-ended format fostered a sense of freedom, empowering parents to freely use the space without pressure. Furthermore, parents felt that engagement with nature enhanced social connections and improved overall wellbeing.

1.6. Opportunities to be in nature

The group's nature-based approach was a key factor in attracting parents to the group. While parents recognised the importance of nature for their family, they often faced barriers to engaging in outdoor experiences:

We don't have much outdoor space at home, so I think it was the first time he encountered grass really. And he didn't like it to start with, but the more we've come, you know, it doesn't worry him, and I think it's important getting him used to being outdoors in nature. (Steven, parent)

One parent reflected on how nature shaped their own upbringing and how this contrasted with their child's experience:

The nature focus of it was really important...because I grew up in the countryside and I really miss that side of it for [Child]. (Gemma, parent)

Whilst at the group, parents enjoyed seeing their children engaging with nature and one described this as meeting an innate need:

I love the tree...I have some nice memories of [Child] in it...It's a cause of wonder for them, like looking at the slugs and stuff...I think kids gravitate to trees...we do as well I think...it looks after us out here. (Jane, parent)

For many parents, the complementary experience of nature held a similar appeal to the group's focus on wellbeing:

The catching thing was that it's for parents, mainly for parents to take care of our wellbeing, but also the nature aspect of it. That was really

important because I'm a nature person, being in nature and doing everything with nature, so that was catchy for me. (Maria, parent)

Furthermore, the outdoor garden environment provided a pleasant and tranquil experience for many parents:

I like being under the big tree, just very yeah, calming and peaceful. It's nice being outside. Even though it's not been particularly sunny the last two weeks, it's been nice to be out under a tree and in nature. (Florence, parent)

Although most parents expressed pleasure in being outdoors, others acknowledged that they were less likely to attend sessions during the colder months:

I stopped going so regularly because when the weather, it turns towards winter...although the children would have still liked to be outside, I'm more of a fair-weather person. (Molly, parent)

2.2. A diverse, safe space

For most parents, the museum's walled garden offered a feeling of safety that contributed to their sense of freedom during the sessions:

There's a nice freedom to it...I feel like I can just sort of let him go about his business and I know that he's in a safe environment. (Steven, parent)

Commissioning staff saw the neutrality of the museum environment as an important feature in potentially alleviating parent anxiety around attending a parent-child group:

I think, like it being a neutral venue is really important to people as well because they're not, I think there's a lot less anxiety about visiting a parent and toddler group if you feel like you can just be yourself and relax. (Olive, museum staff)

Furthermore, museum staff also believed that the group helped erode preconceptions that some parents may have held about museums:

[Museums] are different to how they used to be...I think in the past they could be quite intimidating places for some people. You know, because through [the group] they realise, we're a welcoming place. (Ali, museum staff)

Compared to their previous open woodland location, facilitators felt that the museum garden was more inclusive for families who may not be used to spending time in nature:

Some parents enjoyed being in the woodland, but it tends to be parents that would normally go for a walk in those areas that came to us...I think some of them felt quite anxious because the space was quite open...The museum offers, that middle ground...it's secure and it's safe, but it's got a space within it. (Ellie, facilitator)

This was reflected by parents who felt more comfortable with the safe, enclosed garden space:

I didn't go to [previous intervention site] because when my son was younger, he was a bit of a runner, and it wasn't quite such a contained space. I was a bit worried about it. (Molly, parent)

Both parents and facilitators appreciated the diversity of the natural space and how this contributed to the peaceful atmosphere:

The garden itself is really nice. It's, you know, it's a big area. There's different...paved areas that you can run around on, there's the grass, there's the trees. It's a really nice sort of calm environment. (Steven, parent)

Furthermore, facilitators described how being in the garden was a multisensory experience that they encouraged parents to appreciate through mindful engagement with nature:

There's one thing we do encourage is to stop, to breathe and to listen. And when you do those things, it's amazing what you hear...It has got natural shade from the trees, it's got sunshine, it's got a wall, it's got water, it's got everything that we need...it's a beautiful space. (Sophia, facilitator)

2.3. Freedom to choose

Parents were particularly drawn to the group's relaxed, flexible, free-flowing approach, valuing its lack of pressure to participate, a key difference from other, more directive, groups:

There are lots and lots of parent groups and young child groups that are very like 'come and we'll do this activity...your child will get this out of it, you will get that out of it'. And I think there is a lot of societal pressure to be kind of doing things and [the group] looked...like it was going to be welcoming, low pressure and to be perfectly frank low effort, which at that point I couldn't have managed anything that was higher effort. (Susie, parent)

Facilitators explained how they encouraged parents to curate their own experience. Sessions were deliberately non-prescriptive, giving families the freedom to choose how to use the space and spend their time:

Very often in structured settings, the parent and the child aren't relaxed because they're constantly thinking...what's next? And with us [it's] free flow. You can...stay in the same spot if you'd like for an hour, or you can walk around the garden or go sit on your own or join it. You're just free, free to be. (Sophia, facilitator)

For some parents, the simplicity and unrestricted nature of the activities and facilitators' approach contributed to this feeling of acceptance and ease:

But the main pull of the activity is...that again they were all completely low pressure, and they were all open-ended. So, you know the painting of the tree...some of us were like, 'oh God, he's ruined it', 'oh, she's splattered paint in the wrong places' And [facilitator] just kept saying, 'that's what it's there for'...'they can paint it how they want'. And it's a really simple thing... There's no wrong bit. And all of the activities were like that. (Susie, parent)

Additionally, having the choice not to participate was a feature of the group that many parents appreciated. For one parent, the freedom to choose without pressure led to feelings of inclusivity making them feel more connected to the group:

You could be who you wanted to be. You could sit and chat with somebody, or actually you could sit with your little one and just be by yourselves but still feel like you were part of something...I think because...there were activities out, but there was never any pressure to take part in the activities. (Susie, parent)

Observations showed parents interacting with the space in myriad ways. Sometimes parents sat alone while at other times they would mingle and chat to other families. Some parents might spend more time interacting with their children or supporting another parent's children, while others would speak at length to one of the facilitators. Without a rigid structure, parents evidently felt at ease exercising their autonomy in freely using the space.

For many parents, the flexible, open-ended sessions encouraged social interaction between families:

Some of the other groups I have been to are a little more rigid in their structure...There are fun activities for the kids, but they feel less social in their sort of setup. Whereas this feels a lot more geared towards everyone. Yes. So yeah, chatting, just chatting and being relaxed and being more social with each other. (Steven, parent)

This was supported by facilitators who explained how in their

experience, parents tended to be more social in less structured settings:

We find that parents engage and talk more when it's free flow rather than structured. (Sophia, facilitator)

Conversely other parents felt that some more organised communal activities could help bring the group together, particularly for those who found it difficult to open conversations:

I think maybe if there was an opportunity for everyone to talk to each other because you only talk to people if you pluck up the courage to go and speak to another mum or things like that...And maybe just talk to the staff that work here...Maybe an opportunity for us all to sit and have a chat...either at the start or at the end...would be nice. (Florence, parent)

2.4. Play with natural materials

As well as the natural setting, the opportunity for free play with natural materials supported parents' wellbeing. One parent described how the physical act of crushing petals to create flower prints became a way to connect with and process difficult emotions related to a personal struggle:

Doing all that bashing, I never thought about this. That's an absolutely awesome, great idea and I can get my anger out especially when I've got [a difficult situation] at the moment. (Maria, parent)

Engaging with the natural materials was a multisensory experience enlivening parents' sense of smell and touch, while the communal activity provided stress relief and fostered bonding:

I've sat and other mums have sat and we're all just like squeezing the playdough there and it's like scented and we're, like joking like, "oh it's like a stress ball for us". But it's so lovely like, just sat there chatting. Children are playing and we're like "ah". You know, and you won't get that from some other groups. (Jane, parent)

The same parent also expressed the joy she found in creatively engaging with nature, noting that it allowed her to reconnect with a part of herself she felt had been partially lost since becoming a parent:

I've made some things with [Child], and I've probably got more out of it than she has...I have a creative background myself and...I feel like I've lost a bit of that, so coming here sometimes I've got back into that. (Jane, parent)

Facilitators described using their judgement and experience to support parents to engage with activities when necessary:

There is generally one of us doing the activities or modelling how to do the activity. And you generally get a feel of if somebody needs help or if somebody's not that confident. Just pick up and help. (Sophia, facilitator)

Like the space itself, parents found the natural materials contributed to the sense of calm:

The...materials they set out for the children, they're naturally calming, you know, like the playdough that they make themselves and, you know, the wooden things. And I just think that has an effect on everybody here. And I just think the setting's lovely. (Jane, parent)

Watching the group collectively interact with the natural materials revealed poignant moments of connectivity. A younger child watched with curiosity while an older child stirred lavender, leaves and flowers into plant pots of mud. After a while they felt confident to join in as the older child instinctively shared their wooden spoon with the younger toddler. Another child was observed independently playing with playdough when a facilitator picked up a white feather and gently placed it on top. The child looked up, grinned and was visibly delighted with the small gesture. Simple as they were, these intimate moments appeared to cultivate a sense of calm and togetherness within the group.

Furthermore, facilitators explained how their natural materials were purposely inclusive in addition to being good for families' wellbeing:

So green space and working with anything green is very important for the mind, for the brain and it's very calming. It's a very sensory, natural feel. You can source these objects anywhere, which is really important because of cost of living. Families not being able to afford these nice, plastic, wonderful, sparkly toys. When we can create just as much fun with things that you can find in your own environment. And it's easy, accessible to everybody as well as being really good for your general wellbeing. (Sophia, facilitator)

From a therapeutic perspective, the facilitator highlighted the potential for natural materials to act as 'transitional objects', helping parents extend the positive experience of the sessions into their daily lives:

The other day a parent was...stacking...a woven thing. But just natural without thinking about it so, but they could do that in the garden couldn't they? In the park or so it's transferable. So hopefully in some way they become...like transitional objects...The creation of the feeling in [the group] can be carried outside of that, along with their materials. (Ellie, facilitator)

Families were also encouraged to take objects home that resonated with them. For one family this led to further engagement with nature outside the sessions:

[Child] picked up one of the smaller stones and wouldn't let it go...[the facilitators] were like, 'oh, it's fine, just let him take it'. So, every time we've come to the beach or to the foreshore, we're out looking for more stones to take in [to the group] with us. (James, parent)

Theme 3: Impacts for parents, children, facilitators and museum staff

Parents, facilitators and museum staff described the perceived benefits of the group for themselves and each other. This was apparent not only in how they spoke about the group but also through direct observations of the group. Additionally, the museum experienced impacts on an organisational level, as explored in theme 4.

3.1. Impacts for parents

Positive outcomes described by parents included improved relationships with their children, improved wellbeing, and satisfaction in seeing their children develop socially.

Parents reflected on how the group had impacted their relationships with their children. For one family, the group provided an opportunity for them to spend quality time together, improving the parent-child relationship:

I feel like at the moment with my oldest daughter, I'm really struggling to give her the time that I gave her before and we're seeing some kind of behaviour issues. But we were able to have some time together...shared things to talk about which is lovely. (Florence, parent)

Observations also revealed intimate moments of connection between parents and their children. One parent helped her children collect leaves and petals to stir up in their plant pot. She stroked her child gently on the arm with a leaf and the child mimicked the behaviour stroking her softly with a leaf.

Some parents felt more confident socialising with their child among other families:

Being the sort of a full-time dad...I was a little bit nervous at first, that I might feel like I was intruding on other people's space...But I never feel like I shouldn't be here...everyone's always really welcoming. And I think that's relaxed me into my role a little bit...feel a bit easier being sociable with our little boy. (Steven, parent)

Facilitators described their intention to create judgement free spaces

where parents could enjoy spending time with their children, believing that easing the pressure on children to conform could shift parental expectations and improve their relationship in the long term:

[There's] a lot of expectation of even in a music class, 'your child should be able to hit this drum'...Well, should they?...What we see in the parents over time, there's no expectation on their child. Allows them all to be. (Ellie, facilitator)

The lack of expectations placed on their children was appreciated by parents, who perceived improved wellbeing for both them and their child, suggesting a positive impact on their relationships:

Well, I walk away from that feeling like I've enjoyed it rather than walking away thinking...'Oh, gosh, like my child didn't sit in the circle like everybody else'...I think we both walk away feeling a bit better. And we both get something out of it. (Gemma, parent)

Many parents found the care that they received from facilitators made them feel valued as people, improving their wellbeing:

I came away last week just feeling really valued as a person...[Facilitator] chatted to me and really checked in with me, gave me the little care package and talked me through it...Just little things like that when you're feeling tired and like you're maybe not doing a great job...just pick you up a little bit, that felt great. (Florence, parent)

Furthermore, parents discussed how peer support improved their wellbeing by expanding their support networks:

I spent a lot of time just sat here watching [Child 1] enjoy herself and sat with [Child 2], feeding him, talking to another mum who had a little boy, a little bit older. She recommended some other groups...So it's just having those conversations you learn about other things that are available and then that improves your wellbeing because you've got that another group to go to. Another bit of support you didn't know that was available, so that's great. (Florence, parent)

3.2. Impacts for children

Observations revealed a relaxed and inclusive environment with children confidently moving freely between communal and independent play. One child shared a packet of biscuits with their friend, when another child approached they were also given biscuits intuitively and with no prompts from the surrounding adults.

Facilitators explained how creating a safe space for children to experience and explore not only improved their confidence and social connections but also encouraged healthy attachment interactions with their parent:

Being able to give that space...we see them testing new things, taking safe risks and making connections with other children. Experiencing things that they maybe haven't before...Over time we see both parent and child become confident. Enough to move away and come back, move way and develop that more healthy attachment. (Ellie, facilitator)

Many parents appreciated the educational benefits of the sessions on their children. For some this was improving their knowledge and connection with nature:

Just learning about nature, I suppose, because sometimes the group leaders take them off a little bit as well and point out different things. So, I think they learn a bit about you know the different flowers or the bugs, all the flowers and stuff. So again, it's a little bit more educational than just a group where they play with toys. (Molly, parent)

For other parents coming to group was key to sparking their child's interest in the museum:

I had [visited the museum] lots, but not with [Child]. So, it was a nice sort of catalyst for him exploring a bit further. And then the last few weeks that

we were able to go, he did spend most of it just wanting to go into the museum to look at the truck. (Susie, parent)

Some parents felt that the group helped improved their child's confidence and social skills:

With him being an only child, you know, he doesn't really have any relatives around... And he's happily engaging with other kids, engaging with the other parents... and this has definitely helped him to just acclimatise to being around people that aren't his mum and dad and still feeling safe and still feeling happy that you can run around and have a good time. (Steve, parent)

Other parents observed that their child engaged in more independent play while being at the group:

We've been to other groups where they're indoor...but she always wants me to be with her. I don't know what happened here, [Child] just immediately went and attached herself to some of the children and played... well, I don't know whether that's because it's outside or why, but she felt more comfortable. (Florence, parent)

The calming effect of the group was widely noted across all ages, from infants to older children:

It must be very calming for him because, he doesn't normally sleep like this in the day. (Florence, parent)

I think [child] walks away from [the group] feeling a bit happier and less stressed. (Gemma, parent)

3.3. Impacts for facilitators

Facilitators described how the group gave them the freedom to act professionally in accordance with their beliefs, which they identified as contributing to their sense of worth:

It's given me my purpose back...and belief in myself...it's really refreshing to know that you are actually valued. See our parents feel seen and heard. But so do we. If we can do, we can provide what we believe in. We don't have to say anything that we don't believe in...the power of listening, not to respond is massive. (Sophia, facilitator)

Furthermore, facilitators took pride in their work and the positive recognition they received from parents served as a vital source of encouragement to continue running the group:

There's really positive impacts...in terms of being able to...stand back and reflect on what we're doing...And we're seeing children and their relationships grow and we get so much positive feedback from parents. That's, you know, it's really powerful, it's for us to keep doing what we're doing. (Ellie, facilitator)

3.4. Impacts for museum staff

Staff involved in commissioning the group believed front of house staff were more engaged with their role and experienced improved wellbeing:

[The front of house staff] are really passionate about [the group] sessions...developing that relationship with the families who come...I think the impact on their wellbeing and participation in our programming has really developed. (Beth, museum staff)

Furthermore, front of house staff observed that the improved mood they experienced after the sessions, enhanced their engagement with subsequent museum visitors:

Ash: It gives a good vibe on the day because everybody seems to be happy and calm.

Ali: That's a positive effect that [the group] has on our museum, on the people who are connected to it

Ash: And we enjoy it.

Ali: It's just something nice when there's kids running around enjoying themselves...But I suppose when they put us in a good mood...that must sort of transfer too, when welcoming other guests in because we're really in a good mood...[There's] better customer service from us.

Front of house staff who met the families attending the sessions explained how the group had enabled them to develop lasting relationships with families:

Because of its nature, children grow up, obviously move on to school and such. But we do see them come in [to the museum] and they still recognise us and we recognise them, you know and say hello. (Ash, museum staff)

Theme 4: Shared values, developing relationships and successful partnerships

Participants appreciated how the group developed successful, mutually beneficial relationships built on understanding, reciprocity and trust. While everyone recognised the value of the group, identifying strategies to achieve sustainability was more challenging.

4.1. Mutual respect and relationship building

Successful relationships between families, facilitators and museum staff were cultivated through demonstrations of mutual respect and nurtured through open communication and a willingness to understand each other's roles and experiences. Facilitators explained how respectful behaviours were enacted by families and museum staff:

It's important...there's a real acceptance from the staff that yes, these kids are going to sometimes stand on that tree and sometimes they're going stand on flowers. But obviously...we encourage the kind of respect for what's around. And I think we see that, we don't really have a lot of people just standing on flowers or anything like that. (Ellie, facilitator)

On arrival to the session, families chatted easily and laughed with front of house staff who helped them bring their prams into the garden. Despite there being an alternative unmanned entrance leading directly from the street into the garden, all families chose to come through the museum reception. Facilitators valued the museum staff's role in welcoming parents to the group, recognising how they contributed to the comfortable, relaxed environment:

We know our families are going to get a good welcome and that's really important to us because...we need our families to feel comfortable and we can do that at the museum. [Museum staff] have a really good rapport with our families and they will show them through to us. (Sophia, facilitator)

4.2. Successful partnerships, accessibility and shared benefits

The museum was widely considered to be an ideal venue for hosting the group, bringing mutually beneficial outcomes for facilitators, participating families and the museum itself. Its city centre location was greatly appreciated by parents for its accessibility, especially for those without their own transport:

Lots of people love going to forest schools and stuff like that. But not everybody can physically access them...you might be going through all sorts of stuff, the last thing you need is to get on 4 buses...And being able to go to something that feels like it's in the middle of a wood, but it's in the middle of the city is brilliant. (Susie, parent)

For many parents, the group's central location at the museum offered an opportunity to get out of the house and make the most of the day:

I walk in, but I know people that either get the bus or drive. So, I think it is quite a convenient place and then we can go and enjoy the museums afterwards. So, you can make a day of it really. (Jane, parent)

Hosting the group demonstrated the museum's welcoming atmosphere to families, which proved mutually beneficial to the museum by attracting new visitors:

Yeah, it has broken down some barriers for us, potentially of people visiting us and [the group] encouraged them to come. But then yeah, I think just the nature of us is the space has made them feel safe, which is really nice and they've continued to come back. (Beth, museum staff)

Commissioning staff recognised the rarity and value of their green space, while acknowledging that it was underutilised:

We're aware we're lucky to have that being in a city. So, I think it's something we do definitely need to try and use more of. (Beth, museum staff)

For some parents the gardens were a previously undiscovered gem, and the group had been instrumental in introducing the space to new families:

The gardens that they do it in is lovely cause I've never been. I've been to the museum loads of times, and I didn't, I've never been in those gardens. (Gemma, parent)

4.3. Support and sustainability

The positive relationships and mutual benefits fostered by the group inspired enthusiastic support from museum staff and families. This resulted in front of house staff advocating to senior management on the group's behalf and detailing how it helped them meet some of their priorities:

We've got quite sort of protective of them as a group and as a provision... And funding was always an issue... So, I kind of lobbied on their behalf to our management and sent an e-mail saying you know, it fills so many of our target sort of groups... and some of them, you know, probably haven't been to museums before and so on. So, we're getting new visitors. We're ticking the boxes for mental health provision, under-fives and so on. (Ash, museum staff)

Commissioning staff also lobbied for the group however their support was tempered somewhat by the realities of allocating limited funding:

So even just internally, hopefully to advocate for, you know, more support for it, which obviously it's tricky one. We've got all our targets and various things to meet, but hopefully just if it's proven, you know the effect it's having that will in the long run, hopefully continue that we do get some funding set aside for it. (Beth, museum staff)

Parents were aware of the difficulties faced by the group in obtaining funding and were concerned how this would impact the duration and frequency of the sessions:

That's the only niggle that there isn't enough time because of... funding issues... They put the survey out, saying would we like the group to be every two weeks or once a month and things like this. And like obviously I was quite disappointed when they said that they had the funding cut. (James, parent)

Many parents wanted to support the group, whether in promoting it to others or giving their time:

And I think I do try and tell people about it, but I always worry that if people don't use these kind of things, that they'll go. But I will continue to support it for as long as I can and I'm interested in maybe volunteering as well at some point. (Jane, parent)

Some parents said they would be happy to pay a fee, though for many the fact that it was free was a key feature that attracted them to the group:

Even if there was a little bit of an entrance fee, I wouldn't mind paying it because it is such a nice morning out. (Steven, parent)

I was looking online for some sort of free things to do... because it's very expensive to, you know, be on maternity leave and take your children out somewhere for the day, every day, and pay for it. (Florence, parent)

Museum staff understood the importance of delivering family well-being programmes. They valued the facilitators' skills and expertise in supporting mental health while acknowledging their own limitations in offering this provision themselves:

We've tried kind of various bits in the past, but I think it's just us not having that direct expertise ourselves. So that's why working with [facilitators] who've got that specialist training and expertise to have that specific kind of expert focus on it, it's really great to have. (Beth, museum staff)

Facilitators recognised that the museum operated inherently differently to them as an organisation. And while there was some tension in terms of professional agendas and financing, they recognised the partnership had numerous advantages particularly for families:

Is wellbeing in the museum agenda... I think we serve a purpose for them to demonstrate that that's what they're offering. So, whereas we don't have an agenda, I think because that's the nature of them being an organisation, they have to sit within their agenda and their budgets and things like that. But I think for the families generally running in a partnership like that has loads of advantages in terms of it being a neutral space and it's free and it's even as the kids are growing up... they know the different parts of the museum... explore and then use them. (Ellie, facilitator)

3.3. Logic model diagram and narrative

A logic model (Fig. 2) and accompanying narrative (see Supplementary material 6) were co-produced with stakeholders during two workshops and refined based on qualitative evidence emerging from the participant interviews and observation. This iterative process highlighted the essential elements of delivering a flexible, free-flowing intervention that prioritised parents' wellbeing through non-judgmental, mindful support in a safe, neutral green space.

Key intervention outcomes were summarised as short-term (e.g. being seen as a parent and an individual, increased confidence for children, museum staff wellbeing); intermediate (e.g. building positive connections with nature, repeat visits to the museum); and long-term (positive wellbeing, engaging with and valuing nature in life, families become ongoing visitors and supporters of museums). All outcomes were hypothesised during the logic model workshops and informed by stakeholder expertise and experience of the intervention. Subsequently, the logic model was revised to incorporate findings from participant interviews and the group observation. Frequency of engagement with the intervention varied amongst participants, ranging between less than a month to two and a half years for parents, two to three years for facilitators and up to three years for museum staff. This breadth of exposure allowed the study to capture a comprehensive range of perceived outcomes. An asterisk (*) within the logic model diagram denotes outcomes were supported by qualitative evidence from interview and observation data.

The core theories and concepts underpinning nature's potential to improve health that served as the intervention's mechanisms of change were identified as Kaplan's Restoration Theory (Kaplan, 1995), Richardson's Restoration Theory (Richardson, 2019) and the Biophilia Hypothesis (Wilson, 1984). Social support mechanisms were also theorised including emotional, esteem and social network support (Cutrona and Suhr, 1992).

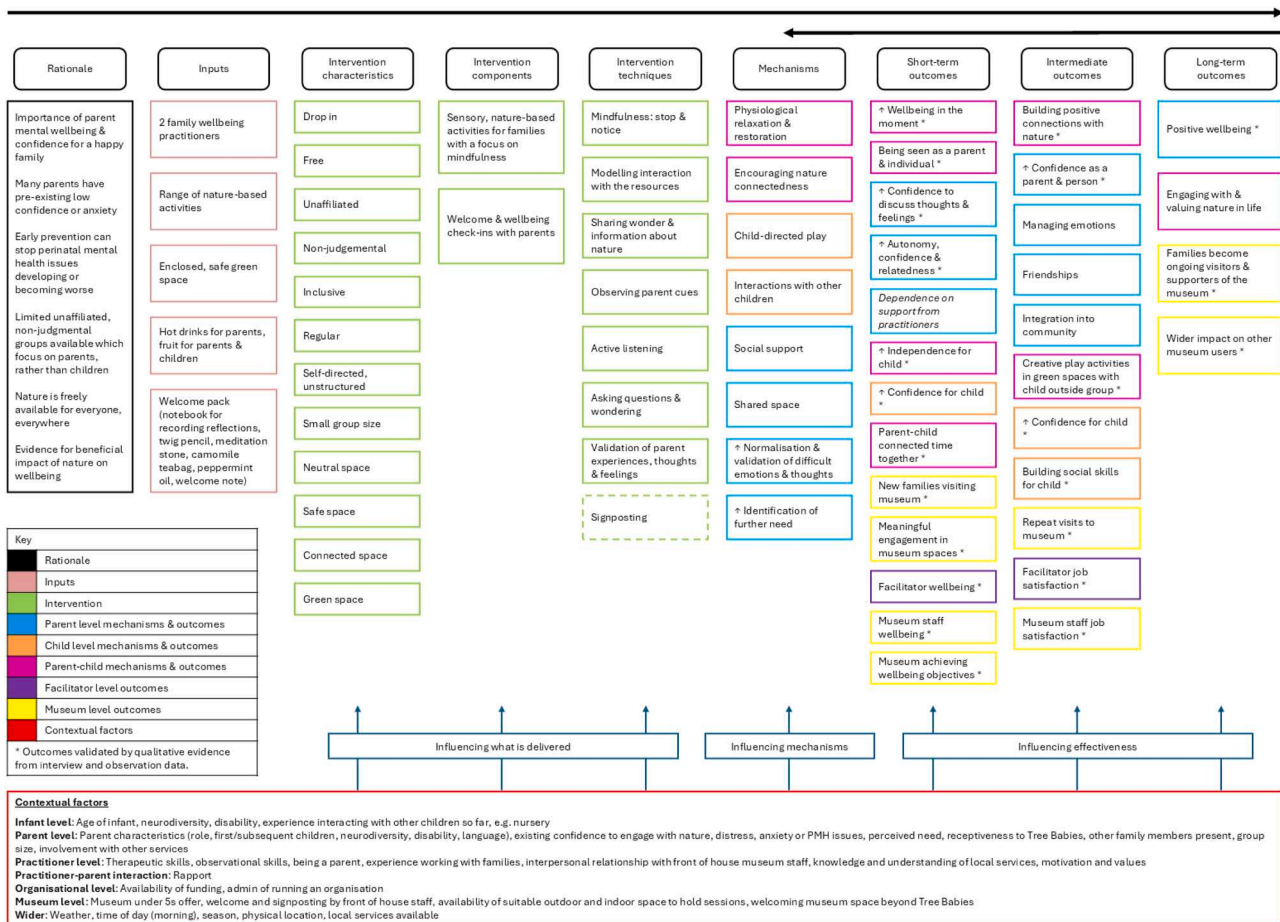


Fig. 2. Intervention logic model.

4. Discussion

This qualitative evaluation built a detailed understanding about how a nature-based intervention delivered in a museum setting was perceived to work by those delivering and receiving it. Theorised mechanisms and outcomes for parents, children, facilitators and museum staff were described in a logic model. The intervention was perceived to promote wellbeing for parents through providing opportunities to relax and connect with nature, to interact with other parents, and to spend time with their children. These mechanisms have been previously identified in research regarding nature-based interventions (Hall et al., 2024, 2023; James et al., 2021; Shrestha et al., 2025; Ward et al., 2019b). The evaluation also found that there were specific characteristics of this nature-based intervention which appeared to help facilitate these positive mechanisms and outcomes for parents. These were the flexible, free-flow format of the intervention, the focus on parents' wellbeing rather than children's development, and the facilitators' interpersonal skills. These will each be discussed further below.

Parents felt the group's flexibility enabled them to feel relaxed, enjoy the freedom to choose how they spent their time, interact more easily with others, and curate their own experience whether with themselves, their children or other parents. This echoes the preference of parents co-designing a nature-based intervention, who recommended having flexible, free-flowing sessions without prescribed activities (Hall, 2023). Furthermore, the ethos of having free, open spaces that children could explore without restrictive behavioural parameters was shared by those delivering and attending museum services across the wider Humber Museum Partnership, of which the museum was a part (Hackett et al., 2017). Like the group in the present study, the museums valued child-led learning in spaces where parents could relax while their

children explored independently. These shared values between providers and facilitators may be critical factors when considering wider implementation of this intervention.

Consistent with Morrow et al.'s (2017) research on unstructured camping, this study found that a 'back to basics' experience in nature promoted feelings of calmness and tranquillity by giving participants freedom from societal expectations and agency in choosing their own activities. While much of the existing literature on children's health and development in museum spaces emphasises a more structured approach with parents facilitating child engagement and learning through scaffolding (Kervin et al., 2025), the group in this study distinguished itself by taking a more intuitive approach. Parents valued both free-play and the absence of more formal activities. This approach resonates with the concept of the 'slow museum' where families are given the time and space to simply be with one another (Wallis and Noble, 2024). Similarly, it aligns with evidence that free-play contributes to improved parent-child engagement and child outcomes when compared to more structured activities (Kwon et al., 2013). The evaluation also highlighted the importance of the garden as a liminal space (Hood et al., 2022), a feature that often doesn't feature in museum management agendas but offers a vital area for young families to connect and engage in less structured play. However, the extent to which parent-infant relationships were improved in this study due to the intervention's lack of rigid structure remains unclear. Further research could focus on how structured and unstructured play in nature-based and more conventional settings can improve outcomes for families, offering a more nuanced understanding of flexible, free-choice interventions.

The focus on parents' wellbeing rather than children's development was incredibly important for helping parents to feel recognised and valued. To some extent, the techniques used in this intervention to

prioritise parent wellbeing could be delivered in any context, for example, providing practical support with childcare and offering one-to-one conversations to ask how parents are. However, the facilitators also made use of the natural setting to support the focus on parents' wellbeing. For example, they encouraged parents to stop and notice the natural environment around them and provided nature-based materials which could be flexibly used by parents and children. Indeed, many parents described how they enjoyed engaging with these materials. As nature can be enjoyed by all ages, these interventions provide an ideal setting for parents to take a breath and remember their own importance, while their children also enjoy themselves.

The Biophilia hypothesis asserts that humans have an innate desire to connect with nature (Wilson, 1984), yet many families, particularly from lower socioeconomic backgrounds face significant barriers to accessing natural spaces (National Children's Bureau, 2013). This is despite evidence suggesting that communities with more green spaces tend to experience fewer socioeconomic health disparities (Lovell et al., 2020). Therefore, effective implementation demands careful consideration of the specific sociocultural barriers encountered by families. For example, situating the intervention in a safe, free and centrally located public space can directly address accessibility issues. Furthermore, an open inclusive space created through the facilitators' approach can alleviate personal barriers, such as feelings of stigma or judgement (Palsola et al., 2020).

Finally, the facilitators' interpersonal skills, expertise, and training were fundamental to how the intervention was received. These skills cultivated trust and parents reported feeling at ease, valued, safe and unjudged, resonating with reports from other parents involved in both nature-based and other types of interventions (Tanner et al., 2024; Ward et al., 2019b). As well as a natural calmness and warmth, and conversational skills to deliver non-directive support to parents, the facilitators also believed in the value of engaging with nature and embedded this belief throughout their interactions with parents. Future efforts to implement nature-based interventions need to consider the interpersonal skills and experience of facilitators. Building networks with other practitioners, families and researchers working in this area to share best practices and learning could help enhance wider rollout and the overall quality of such programmes. Training and ongoing support could help cultivate these qualities in new facilitators.

These findings show the benefit of harnessing connections between public organisations and skilled practitioners to deliver services in accessible, safe spaces. It is known that urban green spaces can be hugely beneficial for people's mental wellbeing (Nutsford et al., 2013), and this research shows how a safe, contained green space can be preferable for parents with young children to an open, rural space. Museums, leisure centres, parks and other public venues could offer huge potential for untapped space in which to deliver such interventions. As seen here, this can also lead to wider benefits such as increased footfall in these public spaces, and relationship building between intervention and venue staff. However, as mentioned above, skilled facilitators to deliver such interventions are essential, and sustainable funding to pay for their time can be an issue. This is particularly pertinent as parents often prefer a slightly longer session, to warrant the effort in attending, to allow for a more flexible drop-in approach if they are running late, and to be able to immerse themselves in the activities (Shrestha et al., 2025), but when funding is limited this can be challenging. In this case, the group sessions were scheduled for 1 hour, but facilitators often stayed longer, which helped parents to feel valued but impinged on facilitators' personal time.

A key strength of this research was the establishment of a trusting relationship between the researcher and group members as this encouraged participants to share experiences and perceptions more openly. The researcher attended one session before starting data collection to get to know the group, and during data collection the researcher assisted with tasks like making drinks, tidying up, and chatted with families, all of which worked to cultivate rapport. Having established familiarity through prior visits, all parents readily agreed to

the observation. The observation was a significant strength, providing firsthand insight into the group's implementation and capturing the voices of both children and parents. Furthermore, the inclusion of the intervention facilitators' and the commissioning organisation's perspectives facilitated a more in depth understanding of the sustainability of delivering these types of interventions. Existing literature has investigated the impact of nature-based interventions on mothers experiencing mental health problems (Walker-Mao et al., 2024). However, less is known about their effects on community samples, regardless of whether participants are experiencing difficulties. This study addresses this gap offering a more nuanced understanding of how such interventions operate within a community setting, where participants may have vastly different experiences of mental health.

The study also had some important limitations. Overall, the insights gained were highly positive and these favourable impressions were described both by long-term attendees and parents who were quite new to the intervention. While there is a risk that participants felt motivated to over-emphasise benefits to ensure the intervention's survival, it is unclear whether participants were aware of any financial uncertainty regarding ongoing funding. Moreover, a willingness to overstate these benefits may reflect the parents' own commitment to ensuring the group's continuation. Notably, only one parent no longer attending the group participated in the study. As a result, the views of those who had left the group and may not have found the intervention beneficial were underrepresented. Furthermore, data collection (interviews and observation) occurred during the summer months with the observation taking place on a particularly warm day. It is plausible that the good weather enhanced participants' mood and overall positive feelings towards the intervention. To strengthen these findings, future research could explore how experiences fluctuate during the winter months, incorporate the perspectives of participants unaware of the group's financial situation and recruit more individuals who no longer attend the group.

Finally, the sample of parents was fairly small and while it included two fathers, and parents with a wide range in terms of the age of their child and time since first attending the intervention, there was a lack of diversity amongst the parents in terms of ethnicity (all participants were White) and age (all participants were aged 30 years or older). This is an important limitation because it is known that nature-based interventions which are not co-developed with parents from marginalised ethnic backgrounds can risk not meeting their needs (Naughton-Doe, 2022). In addition, socioeconomic status, mental health difficulties, or existing nature connectedness was not captured, which have been shown to influence intervention effectiveness (Pritchard et al., 2020; Rogerson et al., 2020; Shanahan et al., 2019).

Further mixed-method research is needed to evaluate similar nature-based interventions across diverse settings and participants. In this regard, a logic model can be a useful planning tool for mapping causal pathways and determining which interventions are effective, for whom, and under what conditions. Such foundational work is essential for developing more inclusive and effective nature-based interventions for all parents and provides the necessary framework for future randomised controlled trials to establish causal links.

In the UK, there is growing consensus amongst policymakers that prevention and early intervention are vital in strengthening parent-infant relationships (Department for Education, 2025). These initiatives capitalise on the early years as a pivotal period to cost-effectively improve the health and development of children and the wellbeing of their families. This intervention offers a promising low-cost opportunity to support parents at this critical stage of their babies' lives, warranting further research and policy recognition,

Ethics Statement

This study obtained ethical approval from the University of York's Department of Health Sciences' Research Governance Committee (HSRGC/2024/626/G).

CRedit authorship contribution statement

Sarah M.B. Compton: Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Kate Morton:** Writing – review & editing, Supervision, Methodology, Investigation, Formal analysis, Conceptualization. **Louise Savage:** Writing – review & editing, Investigation. **Harald Fredheim:** Writing – review & editing, Investigation. **Hannah Armit:** Writing – review & editing, Investigation. **Louise Tracey:** Writing – review & editing, Investigation. **Sarah Louise Blower:** Writing – review & editing, Supervision, Methodology, Investigation, Funding acquisition, Formal analysis, Conceptualization.

Declaration of competing interest

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests:

Sarah Louise Blower reports financial support was provided by National Institute for Health and Care Research Yorkshire and Humber ARC (NIHR200166). Louise Savage reports a relationship with Phoenix Families CIC that includes: board membership and employment. Author LS is director of and employed by Phoenix Families CIC. LS is the developer and provider of the nature-based parent support intervention. Data collection and analysis were carried out independently by the academic team (SC, KM and SB). This report is independent research funded by the National Institute for Health and Care Research Yorkshire and Humber ARC (NIHR200166). The views expressed in this publication are those of the author(s) and not necessarily those of the National Institute for Health and Care Research or the Department of Health and Social Care. If there are other authors, they declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Acknowledgements

Thank you to everyone who contributed to the stakeholder workshops to develop the logic model: Lucy Cooke, Helen Bevan, Esther Hallberg, David Maer, Victoria McCoid, Emma Standley, Sally Toon

We would also like to thank the parents and caregivers who shared their experiences as part of this research.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.wss.2026.100358](https://doi.org/10.1016/j.wss.2026.100358).

References

- Ash, M.J., Woods-Jaeger, B., Udoetuk, S., Livingston, M.D., Sales, J.M., 2025. Barriers and facilitators to accessing mental health supports among black perinatal women: application of the patient-centered access framework. *J. Racial Ethnic Health Disparities* 1–11. <https://doi.org/10.1007/s40615-025-02428-3>.
- Barnes, C., Harvey, C., Holland, F., Wall, S., 2021. Development and testing of the nature connectedness parental self-efficacy (NCPSE) scale. *urban forestry & urban greening* 65, 127343. <https://doi.org/10.1016/j.ufug.2021.127343>.
- Bauer, A., Parsonage, M., Knapp, M., Iemmi, V., Adelaja, B., 2014. *The costs of perinatal mental health problems*. LSE & Centre for Mental Health, London.
- Braun, V., Clarke, V., 2006. Using thematic analysis in psychology. *Qual. Res. Psychol.* 3, 77–101. <https://doi.org/10.1191/1478088706qp063oa>.
- Cardoso, F., McHayle, Z., 2024. *The Economic and Social Costs of Mental Ill Health*. Centre for Mental Health.
- Copland, F.S., Hunter, S.C., 2025. Paternal perinatal mental health support: fathers' perspectives on barriers, facilitators, and preferences. *Discov. Ment. Health* 5, 1–14. <https://doi.org/10.1007/s44192-025-00165-x>.
- Coventry, P.A., Brown, Jennifer V.E., Pervin, J., Brabyn, S., Pateman, R., Breedvelt, J., Gilbody, S., Stancliffe, R., McEachan, R., White, Piran C.L., 2021. Nature-based outdoor activities for mental and physical health: Systematic review and meta-analysis. *SSM - Populat. Health* 16, 100934. <https://doi.org/10.1016/j.ssmph.2021.100934>.

- Cutrona, C., Suhr, J., 1992. Controllability of stressful events and satisfaction with spouse support behaviors. *Commun. Res.* 19, 154–174. <https://doi.org/10.1177/009365092019002002>.
- Darwin, Z., Galdas, P., Hinchliff, S., Littlewood, E., McMillan, D., McGowan, L., Gilbody, S., 2017. Fathers' views and experiences of their own mental health during pregnancy and the first postnatal year: a qualitative interview study of men participating in the UK Born and Bred in Yorkshire (BaBY) cohort. *BMC. Pregnancy. ChildBirth* 17, 1–15. <https://doi.org/10.1186/s12884-017-1229-4>.
- Department for Education, 2025. *Giving Every Child The Best Start In Life*. Department for Education.
- Doucette, P.A., 2004. Walk and talk: an intervention for behaviorally challenged youths. *Adolescence* 39, 373–388.
- Edge, D., MacKian, S.C., 2010. Ethnicity and mental health encounters in primary care: help-seeking and help-giving for perinatal depression among Black Caribbean women in the UK. *Ethn. Health* 15, 93–111. <https://doi.org/10.1080/13557850903418836>.
- Fullam, D.J., Hunt, D.H., Lovell, D.R., Richards, D., Bloomfield, D.D., Warber, S., Tarrant, D.M., Jenny, D., Orr, D.N., Burns, L., Garside, R., 2021. *A Handbook for Nature on Prescription to Promote Mental Health*. University of Exeter.
- Hackett, A., Procter, L., Macrae, C., 2017. *How do families with under fives experience museums? Research report for Humber Museum Partnership, May 2017*. Manchester Metropolitan University.
- Hall, K., Barnes, C., Duggan, L., Walton, S., Moran, P., Turner, K., Evans, J., 2024. The applicability of nature-based interventions to support mothers' postnatal wellbeing: a conceptual review. *Wellbeing. Space Soc.* 6, 100187. <https://doi.org/10.1016/j.wss.2024.100187>.
- Hall, K., Evans, J., Roberts, R., Brown, R., Barnes, C., Turner, K., 2023. Mothers' accounts of the impact of being in nature on postnatal wellbeing: a focus group study. *BMC Women's Health* 23, 1–12. <https://doi.org/10.1186/s12905-023-02165-x>.
- Handley, M., Bunn, F., Lynch, J., Goodman, C., 2020. Using non-participant observation to uncover mechanisms: insights from a realist evaluation. *Evaluation* 26, 380–393. <https://doi.org/10.1177/1356389019869036>.
- Hatfield, G., Lesser, I., Nienhuis, C., 2022. Utility of an outdoor group exercise program for improving postpartum mental health. *Health Fitness J. Canada* 15, 18–30. <https://doi.org/10.14288/hfj.v15i1.807>.
- Hazlehurst, M.F., Muqueeth, S., Wolf, K.L., Simmons, C., Kroshus, E., Tandon, P.S., 2022. Park access and mental health among parents and children during the COVID-19 pandemic. *BMC. Public Health* 22, 1–11. <https://doi.org/10.1186/s12889-022-13148-2>.
- Hoffmann, T.C., Glasziou, P.P., Boutron, I., Milne, R., Perera, R., Moher, D., Altman, D. G., Barbour, V., Macdonald, H., Johnston, M., Lamb, S.E., Dixon-Woods, M., McCulloch, P., Wyatt, J.C., Chan, A.W., Michie, S., 2014. Better reporting of interventions: template for intervention description and replication (TIDieR) checklist and guide. *BMJ* 348, g1687. <https://doi.org/10.1136/bmj.g1687>.
- Hood, L., Bailey, A.R., Coles, T., Pringle, E., 2022. Liminal spaces and the shaping of family museum visits: a spatial ethnography of a major international art museum. *Museum Manage. Curator.* 37, 531–554. <https://doi.org/10.1080/09647775.2021.2023897>.
- Houlden, V., Weich, S., Albuquerque, J.P.de, Jarvis, S., Rees, K., 2018. The relationship between greenspace and the mental wellbeing of adults: a systematic review. *PLoS. One* 13, e0203000. <https://doi.org/10.1371/journal.pone.0203000>.
- Hurt, L., Paranjothy, S., Lucas, P.J., Watson, D., Mann, M., Griffiths, L.J., Ginja, S., Paljarvi, T., Williams, J., Bellis, M.A., Lingam, R., 2018. Interventions that enhance health services for parents and infants to improve child development and social and emotional well-being in high-income countries: a systematic review. *BMJ Open* 8, e014899. <https://doi.org/10.1136/bmjopen-2016-014899>.
- James, G., Kidd, K., Cooley, S.J., Fenton, K., 2021. The feasibility of outdoor psychology sessions in an adult mental health inpatient rehabilitation unit: service user and psychologist perspectives. *Front. Psychol.* 12. <https://doi.org/10.3389/fpsyg.2021.769590>.
- Jewell, J.S., Farewell, C.V., Walls, J., Brooks-Russell, A., Dempsey, A., Leiferman, J.A., 2022. Parents' Mental Health Experiences during the Perinatal Transition: A Qualitative Study. *Iss. Mental Health Nurs.* 43, 323–329. <https://doi.org/10.1080/01612840.2021.1975329>.
- Kaplan, S., 1995. The restorative benefits of nature: Toward an integrative framework. *J. Environ. Psychol., Green Psychol.* 15, 169–182. [https://doi.org/10.1016/0272-4944\(95\)90001-2](https://doi.org/10.1016/0272-4944(95)90001-2).
- Kervin, L., Taylor, E.K., Lewis, K., Rivera, C., Mantei, J., Parker, M., 2025. Children's museums as places for playful learning: a focus on child wellbeing. *Australasian J. Early Childhood.* <https://doi.org/10.1177/18369391251351654>, 18369391251351654.
- Kokkonen, J.-M., Vepsäläinen, H., Abdollahi, A., Paasio, H., Ranta, S., Erkkola, M., Roos, E., Ray, C., 2021. Associations between Parent-child nature visits and sleep, physical activity and weight status among finnish 3–6-year-olds. *Int. J. Environ. Res. Public Health* 18, 12426. <https://doi.org/10.3390/ijerph182312426>.
- Kwon, K.-A., Bingham, G., Lewsader, J., Jeon, H.-J., Elicker, J., 2013. Structured task versus free play: the influence of social context on parenting quality, toddlers' engagement with parents and play behaviors, and parent-toddler language use. *Child Youth. Care Forum.* 42, 207–224. <https://doi.org/10.1007/s10566-013-9198-x>.
- Lawless, A., Coveney, J., MacDougall, C., 2014. Infant mental health promotion and the discourse of risk. *Sociol. Health Illn.* 36, 416–431. <https://doi.org/10.1111/1467-9566.12074>.
- Lovell, R., White, M., Wheeler, B., Taylor, T., Elliott, L., 2020. *A rapid scoping review of health and wellbeing evidence for the Green Infrastructure Standards*. Natural England.

- Lumivero, 2024. NVivo: leading qualitative data analysis software [WWW Document]. lumivero. URL <https://lumivero.com/products/nvivo/> (accessed 9.16.25).
- McCormick, R., 2017. Does access to green space impact the mental well-being of children: a systematic review. *J. Pediatric Nurs., Spec. Issue: Soc. Determinant Health* 37, 3–7. <https://doi.org/10.1016/j.pedn.2017.08.027>.
- Morrow, R., Rodriguez, A., King, N., 2017. Back to basics: can unstructured camping promote wellbeing? *Therapeutic Commun.: Int. J. Therapeut. Commun.* 38, 49–56. <https://doi.org/10.1108/TC-08-2016-0016>.
- Mulhall, A., 2003. In the field: notes on observation in qualitative research. *J. Adv. Nurs.* 41, 306–313. <https://doi.org/10.1046/j.1365-2648.2003.02514.x>.
- Naicker, K., Wickham, M., Colman, I., 2012. Timing of First exposure to maternal depression and adolescent emotional disorder in a national canadian cohort. *PLoS One* 7, e33422. <https://doi.org/10.1371/journal.pone.0033422>.
- National Children's Bureau, 2013. Environmental inequalities and their impact on the health outcomes of children and young people: policy and evidence briefing.
- Naughton-Doe, R.J., 2022. An evaluation of a pilot walking project with Syrian refugee families in Greenwich. *figshare*, London.
- Nutsford, D., Pearson, A.L., Kingham, S., 2013. An ecological study investigating the association between access to urban green space and mental health. *Public Health* 127, 1005–1011. <https://doi.org/10.1016/j.puhe.2013.08.016>.
- Palsola, M., Renko, E., Kostamo, K., Lorenzato, F., Hankonen, N., 2020. Thematic analysis of acceptability and fidelity of engagement for behaviour change interventions: the let's move it intervention interview study. *Br. J. Health Psychol.* 25, 772–789. <https://doi.org/10.1111/bjhp.12433>.
- Powell, T., Gheera, M., Bolton, P., 2021. Early intervention: a background paper. *House of Commons Library*, London.
- Pritchard, A., Richardson, M., Sheffield, D., McEwan, K., 2020. The relationship between nature connectedness and eudaimonic well-being: a meta-analysis. *J. Happiness Stud.* 21, 1145–1167. <https://doi.org/10.1007/s10902-019-00118-6>.
- Public Health England, 2020. Improving access to greenspace A new review for 2020. *Public Health England*.
- Richardson, M., 2019. Beyond restoration: considering emotion regulation in natural well-being. *Ecopsychology*. 11, 123–129. <https://doi.org/10.1089/eco.2019.0012>.
- Ríos-Rodríguez, M.L., Rosales, C., Hernández, B., Lorenzo, M., 2024. Benefits for emotional regulation of contact with nature: a systematic review. *Front. Psychol.* 15. <https://doi.org/10.3389/fpsyg.2024.1402885>.
- Rogerson, M., Wood, C., Pretty, J., Schoenmakers, P., Bloomfield, D., Barton, J., 2020. Regular doses of nature: the efficacy of green exercise interventions for mental wellbeing. *Int. J. Environ. Res. Public Health* 17, 1526. <https://doi.org/10.3390/ijerph17051526>.
- Sachs, A.L., Coringrato, E., Sprague, N., Turbyfill, A., Tillema, S., Litt, J., 2022. Rationale, Feasibility, and acceptability of the meeting in nature together (mint) program: a novel nature-based social intervention for loneliness reduction with teen parents and their peers. *Int. J. Environ. Res. Public Health* 19, 11059. <https://doi.org/10.3390/ijerph191711059>.
- Shanahan, D.F., Astell-Burt, T., Barber, E.A., Brymer, E., Cox, D.T.C., Dean, J., Depledge, M., Fuller, R.A., Hartig, T., Irvine, K.N., Jones, A., Kikillus, H., Lovell, R., Mitchell, R., Niemelä, J., Nieuwenhuijsen, M., Pretty, J., Townsend, M., van Heezik, Y., Warber, S., Gaston, K.J., 2019. Nature-based interventions for improving health and wellbeing: the purpose, the people and the outcomes. *Sports (Basel)* 7, 141. <https://doi.org/10.3390/sports7060141>.
- Shrestha, T., Voon Yi Chi, C., Cassarino, M., Foley, S., Di Blasi, Z., 2025. Factors influencing the effectiveness of nature-based interventions (NBIs) aimed at improving mental health and wellbeing: an umbrella review. *Environ. Int.* 196, 109217. <https://doi.org/10.1016/j.envint.2024.109217>.
- Skivington, K., Matthews, L., Simpson, S.A., Craig, P., Baird, J., Blazeby, J.M., Boyd, K.A., Craig, N., French, D.P., McIntosh, E., Petticrew, M., Rycroft-Malone, J., White, M., Moore, L., 2021. A new framework for developing and evaluating complex interventions: update of medical research council guidance. *BMJ* 374, n2061. <https://doi.org/10.1136/bmj.n2061>.
- Smith, M.S., Lawrence, V., Sadler, E., Easter, A., 2019. Barriers to accessing mental health services for women with perinatal mental illness: systematic review and meta-synthesis of qualitative studies in the UK. *BMJ Open*. 9, e024803. <https://doi.org/10.1136/bmjopen-2018-024803>.
- Tanner, J., Wilson, P., Wight, D., Thompson, L., 2024. The importance of group factors in the delivery of group-based parenting programmes: a process evaluation of Mellow Babies. *Front. Child Adolesc. Psychiatry* 3. <https://doi.org/10.3389/frcha.2024.1395365>.
- Tong, A., Sainsbury, P., Craig, J., 2007. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int. J. Qual. Health Care* 19, 349–357. <https://doi.org/10.1093/intqhc/mzm042>.
- Twhig-Bennett, C., Jones, A., 2018. The health benefits of the great outdoors: a systematic review and meta-analysis of greenspace exposure and health outcomes. *Environ. Res.* 166, 628–637. <https://doi.org/10.1016/j.envres.2018.06.030>.
- Viveiros, C.J., Darling, E.K., 2019. Perceptions of barriers to accessing perinatal mental health care in midwifery: a scoping review. *Midwifery*. 70, 106–118. <https://doi.org/10.1016/j.midw.2018.11.011>.
- Walker-Mao, C., Sachs, A.L., Walls Wilson, J., Wrigley, J., Litt, J.S., Farewell, C.V., Lattimer, B., Leiferman, J.A., 2024. Systematic review of nature-based interventions for perinatal depression. *Anxiety, Loneliness, Matern. Child Health J.* 28, 1886–1896. <https://doi.org/10.1007/s10995-024-03989-1>.
- Wallis, N., Noble, K., 2024. The slow museum: the affordances of a university art museum as a nurturing and caring space for young children and their families. *Museum Manage. Curator*. 39, 694–715. <https://doi.org/10.1080/09647775.2023.2269145>.
- Ward, T., Goldingay, S., Parson, J., 2019a. Evaluating a supported nature play programme, parents' perspectives. *Early Child Develop. Care* 189, 270–283. <https://doi.org/10.1080/03004430.2017.1317764>.
- Ward, T., Goldingay, S., Parson, J., 2019b. Evaluating a supported nature play programme, parents' perspectives. *Early Child Development and Care*.
- Webb, R., Uddin, N., Constantinou, G., Ford, E., Easter, A., Shakespeare, J., Hann, A., Roberts, N., Alderdice, F., Sinesi, A., Coates, R., Hogg, S., Ayers, S., 2023. Meta-review of the barriers and facilitators to women accessing perinatal mental healthcare. *BMJ Open*. 13, e066703. <https://doi.org/10.1136/bmjopen-2022-066703>.
- Webb, R., Uddin, N., Ford, E., Easter, A., Shakespeare, J., Roberts, N., Alderdice, F., Coates, R., Hogg, S., Cheyne, H., Ayers, S., Clark, E., Frame, E., Gilbody, S., Hann, A., McMullen, S., Rosan, C., Salmon, D., Sinesi, A., Thompson, C., Williams, L.R., 2021. Barriers and facilitators to implementing perinatal mental health care in health and social care settings: a systematic review. *Lancet Psychiatry* 8, 521–534. [https://doi.org/10.1016/S2215-0366\(20\)30467-3](https://doi.org/10.1016/S2215-0366(20)30467-3).
- Wilson, E., 1984. *Biophilia: The human bond with other species*. Harvard University Press, Cambridge, MA.