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Parental perceptions of an indoor bouldering programme for toddlers and pre-schoolers in England: an initial exploratory study

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ABSTRACT

Many sports programmes designed for children under five claim improvements in physical, social, and psychological outcomes. However, few have been subject to any form of inquiry. This paper reports an initial exploratory study of parental perceptions of an indoor bouldering programme designed for children younger than 6 when delivered in England. Six parents who accessed an average of four sessions took part in a telephone interview to gather initial perceptions, and to establish whether they felt that there had been changes in their children's and their own behaviour by attending the Rock Tots/Kids classes. Thematic analysis indicated that parents were generally positive about the programme, and could identify some changes in their children's intrapersonal, interpersonal, and climbing specific skills when participating in the sessions. Parents also reported changes in their own approaches to parenting. Suggestions for future research of sports programmes targeted at this age group are discussed.

KEYWORDS

Toddlers; pre-schoolers; bouldering; climbing; sports; parents

The first five years of a child's life are the most important for establishing routines and creating habits that are associated with good quality health outcomes in adulthood (Tammelin et al., 2014). It is widely acknowledged that physical activity (PA) and sports participation are associated with positive physical, psychological, and social outcomes for young people and adults (Holt et al., 2017). However, there is an assumption that effects seen in older children also translate to the very youngest in society. Consequently, there has been an increasing number of sporting activities aimed at this market. For example, programmes marketed at this age group in England include Soccer tots, Rugby tots, Puddle Ducks swimming classes, pre-school gymnastics, and baby ballet. A recent scoping review has suggested that pre-schoolers (0 to 5 years) participation in organised sporting activities promotes increased social skills, prosocial behaviour, and self-regulation (Harlow, Wolman, & Fraser-Thomas, 2020). Yet, the limited number of studies focusing on the under-fives, in addition to the few studies investigating sport specific programmes, brings into question any claims of effectiveness for this age group. The current study aims to contribute to the existing literature by reporting the qualitative perceptions of six parents whose children (aged 1 to 6 years) took part in a developmentally adapted indoor bouldering programme in England. This study is the first to investigate this programme, so the findings provide an initial insight into the potential use of bouldering as a modified sports programme for this age group.

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The early years is a period marked by significant developmental change and the acquisition of specific skills. A salient feature of this period is the need for children to engage in child-led social play and physical activity. Play is crucial for social and biological development with unstructured, child-led free play offering optimal conditions for the child to experience excitement, fun, joy and light-heartedness (Pellegrini, Dupuis, & Smith, 2007). One element of free play that is critical to the healthy development of the child is that of risky play. Sandseter (2009) describes risky play as thrilling and exciting, and an activity that involves the risk of physical injury. Eight categories have been identified, and while risky play is typically associated with the outdoors there is recognition that letting go of control, climbing up or jumping down from height, and engaging in vicarious play can also occur indoors (Sandseter, Kleppe, & Sando, 2021). While risky play can be dangerous, concerns about safety are seen to limit the child's ability to explore the environment, thus reducing their experience and opportunities to face challenges which are needed for healthy development. By engaging in risky play children can explore possibilities and boundaries and discover for themselves how to handle challenging situations (Apter, 2007). Furthermore, risky play has been linked to positive developmental outcomes such as improved social, motor, and spatial skills, and enhanced psychological outcomes (Brussoni et al., 2015).

It is widely recognised that there is an increasing decline in opportunities for young children to participate in outdoor unstructured free play because of cultural trends towards indoor leisure activities, such as computer games, and increasing safety concerns and parental surveillance (Clements, 2004; Dodd, FitzGibbon, Watson, & Nesbit, 2021). With child-led free play on the decline adult-led activities, such as music and reading groups or sporting classes, are increasing in popularity. This has led some academics to be concerned that childhood is becoming scholarised (Dodd et al., 2021). The term 'modified sports programme' is often used to refer to a set of formal and organised sporting activities that have been adapted for use at developmentally appropriate levels with young children (4 years+). Modified programmes are considered a suitable method in which children can 'sample' a variety of different sports and acquire positive early experiences of taking part in sport and exercise (Cote, Liddor, & Hackfort, 2009; Eime et al., 2015). What makes these programmes unique is the focus on sport via play-based activities and games. When adapted to developmentally appropriate levels, modified sports programmes can emulate salient features of free play (i.e. a level choice and enjoyability) which can provide optimal conditions for social learning and development. Moreover, these programmes can promote the acquisition of a broad base of motor skills that can be applied across a range of sports (Cote et al., 2009; Goodway & Robinson, 2015). Because of this, there has been an increasing number of modified sporting activities aimed at young children, including toddlers and pre-schoolers (Fraser-Thomas & Safai, 2018).

Due to the increased franchising of modified sports programmes it has been suggested that such programmes are targeted at middle class parents who have the economic capital in which to participate (Allen, Velija, & Dodds, 2020). It is proposed that such programmes have the tendency to reinforce middle class perceptions of what it means to be a good parent, while satisfying their need to 'display' the actions of their family unit to others in order to be considered a functional family unit (Finch, 2011). It has previously been suggested that sport may reinforce structural inequalities within society by creating spaces where we only interact with people who tend to share similar capital ((Bourdieu, 2013; Dagkas & Quarmby, 2012). Recent findings from Allen et al. (2020) suggest that middle-class parents engage in these activities under the guise that such activities are a sign of good parenting. It is assumed that such activities provide children with a developmentally enriching experience, and a space where social and cultural capital can be established and reinforced. In essence, parents use modified sports programmes to give their children the best start in life and to differentiate their offspring from other children.

Despite the perception that modified sports programmes are developmentally enriching for young children, and the fact that evidence to support their utility has been gradually increasing over the last 20 years, there is still little consensus as to whether participation in organised sport enhances health and developmental outcomes for very young children over and above other

unstructured PA and play based activities (Fraser-Thomas & Safai, 2018). There are several explanations for this lack of agreement within the literature. Firstly, while health guidelines in the UK stipulate that children under the age of five should participate in three hours of physical activity a day, including 60 minutes of moderate-to-vigorous intensity for pre-schoolers aged three to five (Department of Health and Social Care [DHSC], 2019), the physical, developmental and psychological benefits of young children's participation in organised sporting activities is contested (American Association of Paediatrics [AAP], 2001; Stryer, Tofler, & Lapchick, 1998). Research appears to suggest that negative physical and psychological experiences of sports participation i.e. competition, failure and risk taking, often outweigh any beneficial gain (Cote et al., 2009; Fraser-Thomas & Safai, 2018). Moreover, there is a consensus that any form of play at this age should be self-initiated and enjoyable, and not driven by adult motivations. Consequently, previous evaluations of modified sports programmes have tended to utilise children over the age of five, following guidance that these children are likely to have greater readiness for participating in sports due to enhanced physical and cognitive maturity (Goodway & Robinson, 2015).

A second explanation may stem from the way in which sports programmes for this age group are often treated as a variation of more informal PA interventions within the literature. While this may be useful for understanding the overall impact of PA on young children, it does not help in deciphering the independent effects of early exposure to sport specific environments. As an example, two recent comprehensive reviews of programmes aimed at young children identified 27 studies, of which only 7 reported findings from children (4–6 years) who had participated in an organised sporting activity (Harlow et al., 2020; Timmons et al., 2012). Collectively, the findings do suggest some increased benefits to social competency, psychosocial skills, and cognitive development. However, a lack of clarity in working definitions means that conclusive evidence regarding the utility of modified sports programmes for this age group is more rudimentary than previously thought. This is particularly concerning given that marketing of toddler/pre-schooler sports is often geared around a narrative of advanced attainment of developmental outcomes which may be unsubstantiated (Calero, Beesley, & Fraser-Thomas, 2018). As a result, there is a need for further research of modified sports programmes, with a particular focus on building the evidence base for the younger populations to inform future directions and research interests.

Current study

The current study is an initial exploratory study of a small sample of parents who had attended two or more sessions of a developmentally adapted indoor bouldering programme designed for children under the age of six years. Bouldering is a form of rock climbing that takes place on small rock faces, or on artificial rock walls, without the aid of a rope. As climbing forms part of the UK's recommended guidelines for suitable physical activities for toddlers and pre-schoolers (DHSC, 2019), indoor bouldering is considered a suitable sport that can be modified to be developmentally appropriate for very young children. The Rock Tots and Rock Kids programmes have both been developed by a trained developmental psychologist who also has a background in rock climbing. Rock Tots is an introductory climbing class for children aged 1 to 4 years and their parents. It incorporates balance, coordination, and flexibility as well as many other skills for climbing. Every session is interactive and includes a variety of developmentally appropriate activities to help the children learn about climbing including active singing, and games on and off the wall. The instructor gives personalised levelled tasks, challenges, coaching and help to both children and their parents. An example of this would be the programmes unique 'Teddy rescue' game. Within this scenario parents are provided with a teddy bear that they are required to place on a climbing hold at a suitable height for their child to climb up to. As children's competency in climbing increases, parents are encouraged to place the teddy in more challenging locations. Support for parents new to the session is a vital part of Rock Tots. Teaching them how best to support their children on the wall serves to give them important knowledge about how best to keep their children safe and builds confidence in the climbing wall

environment. Rock Tots has a certified award scheme that helps both children and parents understand and document the acquisition of climbing skills and techniques, as well as making it very clear to see how progression is being made.

Rock Kids is the more advanced climbing class for children aged 3 to 6 years old. It is a step up from Rock Tots, focusing more on skill-based tasks and games. At the heart of Rock Kids is the ethos of wanting parents to celebrate their child's climbing skills rather than stifle it, due to their own fears. Parents are a key part of each session, helping their child to learn the skills needed to become a young climber. Parents are given tips and advice about how best to support and coach their child with their climbing. The inclusion of parents within the sessions, in addition to the parent-child-coach relationship, is a key element of the programmes and is what distinguishes them from all other products marketed at this age group.

Both programmes are delivered within indoor climbing centres as rolling initiatives. That is, each session focuses on a different skill to help the children learn about climbing. Both Rock Tots and Rock Kids are currently delivered across a total of eight indoor climbing centres in England (four in the North of England, one in the Midlands, and three in London), yet the programmes have not been subject to any form of evaluation. Because of this, the purpose of the current study was to initially explore parental perceptions of the Rock Tots/Kids classes with a view to identify avenues for further study. The research questions were;

- (1) Why did the parents choose to attend the Rock Tots/Kids classes and what were their initial perceptions?
- (2) Did the parents identify any changes in their children's behaviour/development following attendance at the Rock Tots/Kids classes?
- (3) Did the parents identify any changes in their own parenting strategies following attendance at the Rock Tots/Kids classes?

Materials and methods

Design

The study was originally designed as a four-month pre-post mixed-methods exploratory evaluation, with a rolling recruitment strategy starting at the end of January 2020. This design would have afforded the parent-child dyads the opportunity to attend, at a minimum, eight Rock Tots/Kids climbing sessions before completing a battery of post-programme questionnaires and an exit interview from April 2020. However, due to COVID-19 and the UK national lockdown imposed on the 26 March 2020, the design of the study was revised. A decision was made to contact all participants by email at their four-month post-recruitment point and ask those that had consented to take part in a telephone interview whether they were happy to re-consent to this activity. The current study reports on the findings from these telephone interviews.

Participants

A total of 30 parent-child dyads had enrolled onto one of ten induction sessions of the Rock Tots/Kids programmes held between January and March 2020. Of these, 17 parents consented to take part in the study (56.6% of all available dyads). At the four-month follow up, contact with three families was unable to be established. A further dyad withdrew from the study as they had not been able to attend any Rock Tots/Kids classes beyond the initial session. This left a final sample of 13 dyads (10 mother-child and 3 father-child) who were contactable at follow up, and that had attended two or more sessions (76.4%). From this group, a total of six parents (35.2% of those originally recruited; 46.1% of those contactable at follow up) re-consented to take part in the exit interviews. This sample consisted of three fathers and three mothers from six different families who had a mean age of

35.50 years ($SD = 6.41$; range 22–44) at the point of recruitment. Five parents self-reported their ethnicity as White British, one as Asian British. Five of the six parents had attained educational qualifications equivalent to degree level or higher. The remaining parent was studying for their undergraduate degree at the time of recruitment. All parents were employed (full time $n = 4$; part-time $n = 1$; self-employed $n = 1$). The children who participated in the classes were evenly split between males and females, with a mean age of 2.83 years ($SD = 1.60$; range 2 to 6 years) at initial recruitment. The mean number of sessions that participating dyads attended was 4 ($SD = 1.53$; range = 2 to 6).

Procedure

Ethical approval for the research study was granted by the host institutions Research Ethics Committee [Ref: 62,334]. Parents were informed of the study during the mandatory induction session that ran immediately prior to the start of the first Rock Tots/Kids session. Parents who were interested in taking part were only eligible to sign up to the study prior to the first formal session. This was to ensure that the children in the study had as little exposure to the programme as possible at the point of recruitment. Rolling recruitment into the study was adopted to accommodate for the anticipated slow recruitment to the Rock Tots/Kids classes as they underwent a bedding in phase within the climbing facility.

The Rock Tots/Kids instructor, who had been fully briefed on the purpose of the study, introduced the researcher to the parents at the start of each induction session. Interested parents were then directed towards the researcher to discuss the study in more detail while the children were engaged in initial warm up activities to minimise distraction. Parents who provided written informed consent to take part were then provided with hard copies of the pre-programme questionnaires (a general demographics form, Being a Mother Scale [BaM-13; Matthey, 2011] and the Ages and Stages Questionnaire Squires, Bricker, & Twombly, 2009). Exit interviews were conducted over the phone four months later and were audio recorded for later transcription and coding.

Telephone interviews were conducted using Skype for Business facilities available to the researcher through the host institutions subscription. Parents were contacted on their mobile phone at a time and day that was convenient for them to circumvent any Wi-Fi connection issues and any clashes with daily routines i.e. nap or dinner times. All interviews were audio recorded using a handheld Dictaphone which enabled all verbal exchanges to be captured in their entirety. An initial rapport was established by engaging in general conversation before proceeding with the more formal elements of the interview schedule. No recording suffered from technical or audio issues at the time of transcription.

Interview guide

Given the unique involvement that parents have with the programme a semi-structured interview guide was developed to elicit parent's perceptions of their children's experiences of the Rock Tots/Kids classes. The questions were based around five main areas; 1) the underlying reasons for choosing Rock Tots/Kids as a parent-child activity; 2) what they and their children enjoyed the most about the programme; 3) what they and their children enjoyed the least; 4) what changes, if any, the parents had identified in their children as a direct result of attending the Rock Tots/Kids classes; and 5) what changes, if any, the parents had identified in themselves. A series of probes and elaboration questions were developed to gain depth and detail of beliefs and values. Probe questions ('What parent-child activities do you usually do with your child?') and elaboration questions (e.g. 'can you tell me a bit more about that?') were utilised as and when they were needed. Although the same lead questions were used in all cases, the order in which the questions were asked varied in each interview. This encouraged a natural flow of dialogue (Hayman, Borkoles, Taylor, Hemmings, & Polman, 2014).

Data analysis

The length of the interviews ranged between 20 and 30 minutes and were transcribed verbatim. Analysis of the data was deductive in nature and coding of the transcripts adhered to Braun and Clarke's (2006) guide for conducting thematic analysis. Braun and Clarke propose that there are six phases of thematic analysis. For Phase 1 (familiarising yourself with the data) the lead author transcribed each interview in full and read through each interview three times. Upon the third read, the lead author began to generate initial codes (Phase 2) by extracting the data into an excel spreadsheet and organising the material according to the questions/prompts that guided the interview. The data was then revisited and grouped according to shared themes or characteristics (Phase 3). For Phase 4 (reviewing themes) initial theme categories were shared with a critical friend (an experienced qualitative social researcher) whose role was to identify incongruences or inconsistencies and suggest alternative ways of grouping the data. This process allowed for further refinement and consolidation of the data into its final themes. Phase 5 and 6 therefore comprised the final defining and naming of themes to produce the report. The stages outlined here speak to the sincerity and credibility elements of the eight 'big tent' quality criteria for qualitative research proposed by Tracy (2010).

Results

Thematic analysis identified three overarching themes with a variety of subthemes embedded within these themes. The three main themes were 1) benefits to children, 2) benefits to parents, and 3) programme specific characteristics.

Theme 1: benefits to children

Understandably, all parents that took part in this study were hesitant to attribute changes in their children's overall development to the Rock Tots/Kids classes given that many had attended only a handful of sessions. However, all parents did acknowledge that within the sessions their children were beginning to exhibit changes across several social, psychological, and physical domains. Parental responses could be thematically grouped according to changes in intrapersonal skills, interpersonal relationships, as well as outcomes associated specifically with the sport (Figure 1).

Intrapersonal skills

The parents reported that the classes afforded the children the opportunity to gain greater self-awareness as they were required to observe and recognise the limits of their own abilities.

I think sometimes you have to encourage him or get him to do things but I think once he got going and did it he you know you really enjoyed it and yeah he took quite naturally to it. Quite physically, he is physically quite strong and tall and he is naturally quite suited to it so you could see that he was enjoying the kind of finding his way up, and problem solving his way up the wall and getting to the top

(P6, Father)

The parents also spoke about how their children's increasing self-awareness contributed to increased confidence, which in turn allowed them to take on new challenges and persevere in challenging situations.

Probably just his confidence in physical stuff like climbing and knowing how strong he is.

(P2, Mother)

He had had to overcome the challenges, so within the space of those two weeks we saw him, I suppose persevere in a way that was that was probably better than we have seen previously

(P6, Father)

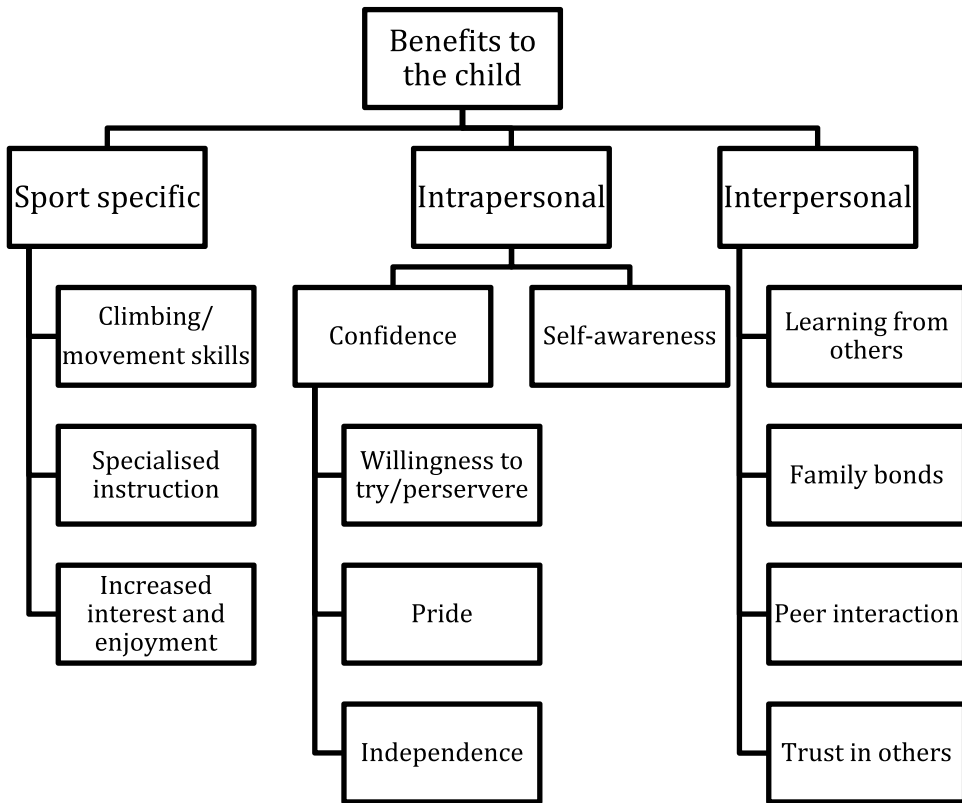


Figure 1. Parental perceived benefits to the children from attending the Rock Tots/Kids classes.

Certainly, very confident and willing to try things and not so worried about heights for example and being scared in certain scenarios.
(P1, Father)

This newly found confidence was also said to be expressed in the pride that the children took in their achievements

But it was good seeing him sort of sort of take on a challenge and push himself to do things ... sometimes [child's name] needs a bit of encouragement to kind of go for things and try things ... but it was good to see him push himself, and with encouragement, especially from the instructors to climb, for example all the way to the top of the wall, because you see his reaction afterwards and the pride he takes in it
(P6, Father)

In addition to this, the parents reported increases in the children's self-confidence as they became more familiar with the indoor climbing environment.

I think for him his confidence changed coz he gets quite shy when using new places and new people but after a couple of times he had sort of got used to who is teaching the session ... I think the repetitiveness of going back to the same place each time helped him become confident in knowing what he was doing when he was there
(P3, Mother)

Interpersonal relationships

All parents recognised the potential benefits of the classes on their children's developing social skills. The importance of learning from others and acquiring a skill that could be used to enhance family bonds were both cited as reasons for initially attending the classes

We thought Rock Tots would be good because he would be interacting with the other kids, learning from people who know how to teach young children how to climb, and then playing other games that are beneficial other than just getting on the wall and having a go i suppose.

(P4, Father)

It is something that she can do throughout her life, but it also enables us to do a lot more as a family, that was the main reason.

(P5, Mother)

It's just a way of allowing them to learn more about climbing in the right environment so that we could all enjoy it as a family moving forward as they get older

(P1, Father)

Two of the parents reported that, given the age of their children and that they were not yet attending nursery or school, the Rock Tots/Kids classes afforded them the opportunity to socialise and interact with children of similar ages, as well as adults. The parents recognised the additional benefits of this socialisation, particularly with regards to increasing the child's confidence and trust in others, and the general enjoyment that interacting with other children can bring.

It is more of a confidence thing in her ability to speak to adults because she is sort of really wary of adults, mainly because they seem to touch her a lot in public and it traumatises her. Whereas it has sort of rebuilt her trust in adults. She absolutely loves [the instructor] . . . and since we have been going to the Rock Kids sessions she has been more trusting of adults

(P2, Mother)

She also enjoys the interaction with the other kids so that's why she likes both aspects of it [Rock Tots] I think.

(P5, Mother)

Sport specific

Beyond the intra and interpersonal aspects, some parents initially reported the health and fitness elements that brought them to the sessions.

We felt it was a really good all round fitness and there's something that you can do from like any age group up to any age group you know, you see a lot different age groups of people in the indoor climbing wall then there's all the fitness. [. . .] we thought that Rock Tots being geared for her age group would be ideal for starting and getting her involved in it.

(P5, Mother)

Other parents indicated that the anticipated benefits of their children receiving sport specific instruction was the main motivator for attending the classes

One of the main motivations for doing Rock Tots was that whilst I climb I've never been taught how to do it but I thought it would be really useful for them to kind of learn it properly rather than just like playing around and doing it. But it's really useful for them to have some kind of guided instruction as well so that was the motivation for doing it really

(P3, Mother)

When questioned about potential changes in their children's behaviour and development that might be attributed to the programmes, some parents acknowledged that their children had started to show an improvement in general climbing and fundamental movement skills within the sessions.

I think in the few sessions we did he was definitely learning the balance side of things. You know when you're trying to work out can I lift this leg up? Can I move this arm up? Kind of thing, to make sure you got enough points of contact to still balance. So I think in the few sessions we did his balance was improving
(P3, Mother)

Maybe with the climbing, mainly he has shown some improvement with it
(P4, Father)

Moreover, the parents acknowledged that they had observed an increase in the children's interest and enjoyment of climbing both within and outside of the sessions, noting incidences where the children would talk about climbing as a focal point of interest, sometimes with individuals who had not been present during the classes.

It was quite noticeable that both of them would be quite vocal with family and friends afterwards talking about going climbing, and that we had been climbing, or we are going climbing tomorrow sort of thing. So it was obvious that they enjoyed it. And even though it didn't always show during the sessions it was obvious it was having an impact on them and they were enjoying it and were eager to go back and do it again and try other things
(P1, Father)

I think sometimes you have to encourage him or get him to do things but I think once he got going and did it he you know you really enjoyed it and yeah he took quite naturally to it.
(P6, Father)

Before it was me saying should we go climbing you know when you're trying to think of a different activity to do or just anything that will keep them entertained but now they are asking to do it
(P3, Mother)

Theme 2: benefits to the parents

While the parents were able to identify the benefits of attending the programmes to their children, they were less able to identify benefits to their own behaviour. Those parents who did acknowledge changes in themselves were those who had attended four or more sessions. Their responses could be categorised according to the acquisition of knowledge from the programmes that could be transferred to other routine activities and settings, and the shift in their approach to parenting based on increased awareness of their children's developmental ability (Figure 2).

Acquired knowledge

Some of the parents acknowledged that attending the Rock Tots/Kids classes had helped them identify effective strategies to increase their children's engagement across different activities, including climbing outside of the classes.

I think we have picked up a couple of things in terms of how to keep him engaged with it for a bit longer ... we do try to vary it up a little bit but we have had a few more ideas on how to keep him engaged with that sort of element of physical activity
(P4, Father)

In addition, some of the parents spoke about the specific benefits to their own knowledge of climbing from attending the sessions, specifically regarding the use of terminology and how this could be applied outside of the sessions to continually support their children's development of climbing.

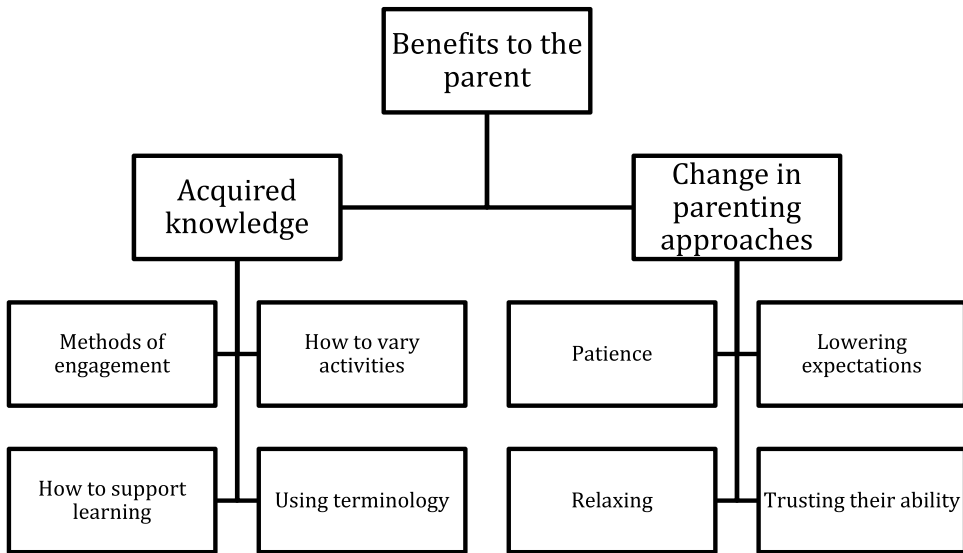


Figure 2. Parental perceptions of the benefits of the Rock Tots/Kids classes on parent outcomes.

How to support them to learn I guess I've learned from it, and also some of the kind of correct language to use ... they have to learn a hold type or something each time but then when you're out and about playing around in rocks and stuff in the Peak District you can kind of use the right words and so it reinforces for them what they were doing on the wall so I think in that respect I've changed the way I talk about it

(P3, Mother)

Changing approaches to parenting

The parents also spoke about becoming more aware of their children's ability, both in terms of their developmental limitations but also their developmental strengths. Within these responses' the parents spoke of the impact that attending the programmes had on their approaches to parenting outside of the climbing centre environment. For example, one parent spoke about being more patient with their children, lowering their expectations, and understanding their child's capabilities within the realms of what is feasible for that developmental stage.

Probably a bit more patience with them, not expecting them to be able to do everything straight away and to tell them to keep trying and keep supporting them with that and not just expecting them to be able to do everything first time I suppose

(P1, Father)

Other parents spoke about how the classes had increased their trust and confidence in their children's ability, and how this then encouraged them to relax and allow their child to explore the limits of their own abilities.

I am more relaxed about things that other parents might be cautious of like trusting their physical abilities. So not constantly telling them to get down, not always holding them whilst they do something a bit on the risky side ... I am more willing to kind of let them try themselves

(P2, Mother)

I think I am more accepting of her trying to do stuff and not doing it for her, so knowing that she needed to do things more for herself she's got to learn it. I was kind of stepping back a lot more from what she was doing and not rushing in so much to help her and letting her find her way with it a little bit more
(P5, Mother)

Theme 3: programme specific characteristics

Underpinning the benefits to both children and parents are the specific characteristics of the programme that provide the fundamental mechanisms of change. Parents collectively spoke of the unique qualities of the programme in terms of delivery and content, as well as the fundamental importance of the relationship with the instructors to engage their children (Figure 3).

Uniqueness of the programme

Overall, the parents were very positive about the Rock Tots/Kids classes noting that the programmes were quite distinct from other programmes aimed at this age group. Specifically, parents spoke highly of the informal, laid back approach to delivery, the structure of the sessions that included a variety of activities to sustain engagement, the ability to take breaks when required, the relevance of the activities to climbing, in addition to the added benefits of immersing the child within the climbing environment. All the parents reported that despite the classes being associated with a risky sport, they recognised that the programme had been designed to be developmentally appropriate which is fundamental to keeping this age group engaged.

I think the variety was very good . . . the fact that it is split up into portions of climbing, portions of games, portions of singing and dancing while doing the stretches and then going into different rooms and doing different activities like the parachute and all that kind of thing I think that just keeps them occupied for that session
(P1, Father)

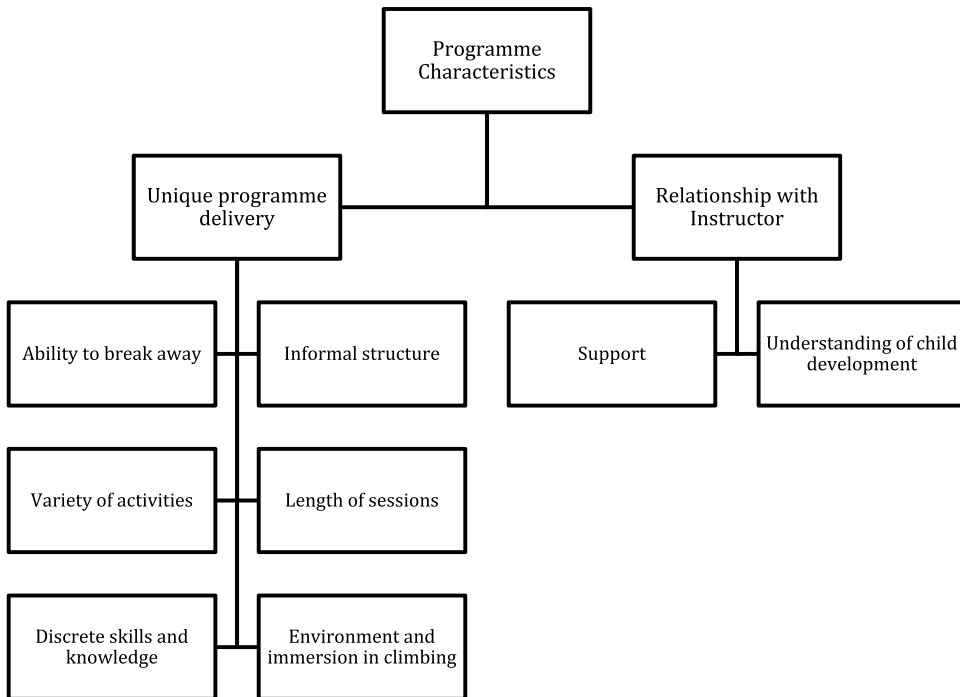


Figure 3. Parental perceptions of the unique elements of the Rock Tots/Kids classes.

It's just totally different. We tried gymnastics, swimming and they are all like I don't know how to explain it, just totally different. Like swimming's really structured and it gets a bit boring, whereas like the Rock Tots they do a warmup and then do some climbing and some games ... It is so easy going. She doesn't get upset like when she has to hand her ribbon back at ballet. She just has to accept that she doesn't have to be quiet. It's just so easy going.
(P2, Mother)

Because it wasn't just sort of an hour of straight you know keep climbing, climbing, climbing, there was sort of breaks in the middle. There were snacks provided on one of the days, and a drink, and you could also step away. There was no pressure to keep engaged with it, if you wanted a break from it you could
(P6, Father)

Parents also noted that Rock Tots/Kids was unique in terms of the discrete skills and knowledge that were being developed through engagement with climbing related activities.

The climbing adds an element of problem solving ... I mean there is an element of problem solving in other things that we are doing with him, elements of his learning, but not in sporting activities and certainly not much upper body stuff ... I think most of the other sports, certainly for young kids are sort of very much focused on running around and chasing so I think, I suppose there are a few differences there
(P4, Father)

Equally all the activities do have a relevance to the climbing with balance and that kind of thing so. and then they can utilise that directly in the exercises on the wall itself
(P1, Father)

I think that just the way that they actually encourage them to learn about the holds I thought that was quite good ... Like when they named the holds and when they talked about the different types of holds. Obviously doesn't really go in properly at their age but I thought it was a good starting point for them.
(P5, Mother)

The parents also spoke about the impact of the environment in which the programme is delivered, and how the immersion within the climbing environment via delivery at the climbing centre exposed the children to a variety of experiences that otherwise they would not have.

Because it is in sort of a broader, larger climbing centre there are lots of other people of different abilities doing things and [he] got quite interested in watching the elder groups. I think on one of the days they actually had the GB climbing team there and he was watching them, and he was absolutely fascinated. So, he seemed to get quite a lot from watching the other people doing it as well not just from the class itself but from the actual setting that it was within.
(P6, Father)

One parent noted that this immersive environment allowed their child to acquire knowledge regarding object properties more quickly than if the child had not attended the classes.

He has picked up even just really simple things like colours and counting numbers easier because it [the climbing wall] is just a lot of colours, and then like the left and right easier
(P2, Mother)

Relationship with instructors

Throughout the interviews the parents frequently acknowledged the role of the instructor, and how important they are to the children's overall experience. Parents identified that the instructors were incredibly supportive of the children, and were able to encourage and engage them for a sustained period of time due to the unique relationships that they had built with the children and their general understanding of children's development.

I think the people running the session have been really good . . .she was really engaging. [Child's name] liked her so they definitely deserve a mention. I think they have done a really good job with the sessions and how they have kept the kids engaged with it as well.

(P4, Father)

The staff are a little bit more understanding of normal child behaviour than other groups . . . The relationship between the instructors and the children is completely different. It's more friendly and confidence building I think that's the biggest thing

(P2, Mother)

Discussion

Although child-led free play is known to be vital for development during the early years, there is an increasing demand for adult-led structured activities such as modified sports programmes. However, despite their increasing popularity, there is very little evidence to support claims of a positive effect on developmental outcomes for toddlers and pre-schoolers. Two possible reasons may be contributing to this: 1) a distinct lack of studies evaluating modified sports programmes, and b) even fewer evaluations using samples of children under the age of five. Because of this, the current study sought to contribute to the literature by obtaining initial parental perceptions of an indoor bouldering programme designed for use with children aged 1 to 6 years. The findings indicate that within the sessions the children were beginning to exhibit changes across intra and interpersonal domains, as well as acquiring some discrete skills associated with the sport. The parents commented that they had observed some changes in their own approaches to parenting in addition to acquired knowledge. Further, all parents noted the unique qualities of the programmes which distinguishes them from other structured activities aimed at this market. While the current study is exploratory, and we are unable to draw firm conclusions from qualitative reports, these findings provide preliminary indications that the Rock Tots/Kids programmes could yield benefits with this age group. Further research is required to establish quantifiable changes that could be attributed to these programmes.

General discussions of children's participation in sport tends to centre around concerns regarding decreasing health and fitness levels (Harding, Page, Falconer, & Cooper, 2015). However, research has suggested that for middle-class families, toddler sports are one way in which parents invest in their children's developing capital, and that reasons for participating often go beyond the child learning to become competent in a specific sport or be healthy (Allen et al., 2020; Bourdieu, 2013; Finch, 2011). Findings from the current study tend to support this notion, with parents suggesting that the classes would bring the family together through shared activities. This finding provides a direct reference to the work by Finch (2011) regarding the notion of 'displaying families' and the need to be seen by others to validate ideas of functioning well as a family. The parents also spoke of the advantages of the programmes to provide the child with skills that they could use for life. This relates back to the work of Dagkas and Quarmby (2012), Boudieu (2013), and most recently Allen et al. (2020) regarding the need for middle class families to invest in specific activities for their offspring to develop specific skills or qualities deemed essential for getting ahead in life, but also to meet the requirements of being a good parent.

The themes relating to the observed benefits to children support previous research in this area. Parents reported potential changes in children's interpersonal, intrapersonal, and general climbing skills which align to the social, psychological and physical benefits reported elsewhere with samples of children of similar ages, and other sporting activities which are similarly structured in delivery i.e. duration, frequency, and structure (Biber, 2016; Fraser-Thomas & Safai, 2018; Metwaly, 2015; Sterkowicz-Przybycień, Kłys, & Almansba, 2014). However, given the limited number of sessions that the dyads were able to attend we cannot claim that these

reported changes are specific to this programme. There may have been additional factors that sit outside of the programme that may have influenced these findings. Subsequently, there is a need for further evaluation of this programme with a group of parents who have had longer exposure to the programme and its contents.

The themes relating to the observed benefits to parents also support previous research in this area. Loprinzi and Trost (2010) report that parents own PA and their perceptions of the child's competence were positively associated with parental support for PA. Furthermore, parents' perceptions of the child's competence were positively associated with both home-based and childcare PA. In the current study, parents were predominantly experienced climbers. In addition, the sample largely reported changes in their parenting approach. Specifically, parents suggested they were more relaxed and trusting of their child's ability, and subsequently were more likely to allow the children to engage in risky play at home. The links between child-led risky play, improvements in the parent-child relationship, and benefits to child developmental outcomes are well documented (Bornstein & Bornstein, 2007; Pellegrini, 2009; Sandseter et al., 2021). Subsequently, with its ethos of including parents in the delivery of the sessions, Rock Tots/Kids may be indirectly improving parent-child relationships by providing parents with new perspectives of their child's competence and ability.

Strengths

The primary strength of this study is that this is the first to evaluate the Rock Tots/Kids programmes, and to explore how this programme may benefit children's development. This is an important area of study given the established link between PA and benefits to cognition and other health outcomes observed in older populations (Holt et al., 2017). In addition, the positive relationships between risky play and advancements in development are now beginning to emerge (Brussoni et al., 2015) and the current study contributes to our growing knowledge of this subject area.

A second strength is that this study provides initial evidence for the potential benefits of an indoor bouldering programme which has been designed to be developmentally appropriate for young children. The results of this study should provide the foundation for further research in this area and should feed into a more comprehensive and scientifically robust study that approaches children's development through a holistic lens.

Limitations

The primary limitation of this study is that the current findings are based on the responses of six parents who had not been able to attend many sessions of the programmes due to the nationwide closure of indoor climbing walls as a direct result of COVID-19 in March 2020. The parents acknowledged the difficulty in identifying specific developmental changes as a direct result of the programme, and while the current findings are promising, we are limited in the conclusions that can be drawn.

Caution must also be taken when interpreting the findings when we consider the method of data collection, and the specific characteristics of the sample providing the data. The study suffered high levels of attrition and subsequently the final sample of parents taking part in the interviews may not be representative of all parents who took part in the programmes. Indeed, we must acknowledge that perhaps our participating parents were more motivated to take part in the interviews because their experience of the programmes was more positive. As a result, our findings might reflect some homogeneity within the sample, and the results might look quite different had a broader range of parents been available to share their views.

Although perceived outcomes from the included parents are considered insightful, they do not provide actualized outcomes of sport participation. Furthermore, the parents' responses may be inflated due to social desirability or response bias (Alderson, 2005). This is particularly salient when

we consider how representative of the general population the current sample may or may not be. The present dyads were predominantly white, well-educated, middle class parents who also self-reported a history of rock climbing. It is very likely that these parents will have had different motivations for joining the programme compared to parents of a lower social class or those who had no prior experience of rock climbing. It is important to acknowledge that access and participation in sport is highly correlated with social class, and subsequently, in line with previous research, future investigations should seek to include a diverse sample of parent-child dyads that represent wider societal groups (Allen et al., 2020).

Future research and conclusions

This is the first study of a modified indoor bouldering programme designed for very young children. The study was always intended to be exploratory to identify initial parental perceptions of the programme. The findings demonstrate that parents initially attended the classes to enhance their children's development and to provide opportunities to do things together as a family. Overall, parents were generally very positive about the programme, and following attendance, perceived there to be benefits to their children's development and to their own parenting strategies. While self-motivated unstructured free play should be the prime focus for children of this age, we must acknowledge that adult led, structured activities are increasing in popularity and an assessment of their utility is required to make informed judgements of their appropriateness. Subsequently, based on the current findings we recommend that there is a need for researchers to continue to evaluate programmes which are popular amongst this age group i.e. football, rugby, ballet, gymnastics, and swimming. Current evidence for the effectiveness of modified sports programmes on toddler and pre-schooler outcomes is limited due to a few low-quality studies with this age group (Harlow et al., 2020). Future research should focus on gathering additional qualitative data with a variety of stakeholders i.e. parents, instructors and the children themselves, in order to triangulate the findings. Only once this body of work is established should researchers then attempt to establish preliminary evidence of efficacy via feasibility and pilot trials. In the short-term this should provide us with a better understanding of potential mechanisms of change, in addition to appropriateness, without the time and cost implications associated with randomised controlled trials.

In conclusion, while it is strongly recommended that parents promote self-motivated play rather than adult chosen 'sports' amongst this age group, the current study provides initial evidence that the Rock Tots/Kids classes may influence changes in children's interpersonal, intrapersonal, and climbing specific skills following attendance of the sessions. However, while these results are positive, they are not definitive. A sequential programme of research is required before we can make claims that this programme is effective in generating meaningful change for children and their families.

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Data availability statement

Due to the nature of this research, participants of this study did not agree for their data to be shared publicly, so supporting data is not available.

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