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Adventurous play for a healthy childhood: Facilitators and barriers identified by parents in Britain

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ABSTRACT

Rationale: Adventurous play, where children take age-appropriate risks involving uncertainty, fear, and thrill, is positively associated with children's physical health, mental health, and development. There is growing concern that children's access to and engagement with adventurous play opportunities are declining in Westernised countries, which may have negative implications for children's health.

Objective: The current study aimed to ascertain the facilitators of and barriers to children's adventurous play most identified by parents in Britain and to determine whether these differ across socio-demographic and geographic groups.

Methods: This study analysed the responses of a nationally representative sample of 1919 parents who took part in the British Children's Play Survey. Two open-ended questions asked parents to identify what they perceive to be the facilitators of and barriers to their child's adventurous play. A quantitative coding scheme, developed using the qualitative framework identified by Oliver et al. (2022), was applied to parents' responses.

Results: A diversity in the most identified facilitators and barriers was found, including concerns about the risk of injury from adventurous play and the safety of society, positive attitudes about the benefits of adventurous play, as well as factors related to child attributes. In general, these were consistently identified across different socio-demographic and geographic groups, although some differences were found in barriers.

Conclusions: The findings of this research support the identification of key targets for those working with parents to improve children's adventurous play opportunities and ultimately their physical and mental health. Future research should seek to design and tailor interventions by asking parents about the support they would value.

Adventurous play is defined as "child-led play where children experience subjective feelings of excitement, thrill, and fear; often this occurs in the context of age-appropriate risk-taking" (Dodd and Lester, 2021, p. 1). Synonymous with risky play, adventurous play typically happens outdoors and can involve playing at great heights, great speed, with dangerous tools, near dangerous elements, such as water, rough and tumble play, and independent play where children can get lost and are out of sight of adults (Sandseter, 2007; Sandseter and Kleppe, 2019). Many studies have found that children enjoy adventurous play, expressing the balance between exhilaration and fear as 'scary-funny' (Sandseter, 2010). Children feel that life without risk would be no fun (Green and Hart, 1998) and value opportunities for risk and challenge in their play (Brussoni et al., 2020).

Adventurous, risky, outdoor play during childhood is linked with

physical health, development, and emotional well-being (Brussoni et al., 2015; Sando et al., 2021). For example, for young children involved in the Head Start programme in the United States, the more time children spent playing outdoors, the greater the benefits in terms of Body Mass Index (Ansari et al., 2015). Similarly, outdoor play was found to be positively associated with both light physical activity and moderate to vigorous physical activity in 11-year-old children living in Canada (Stone and Faulkner, 2014). Further, outdoor play has consistently been linked to the prevention of myopia in both western (Rose et al., 2008) and non-western contexts, including India (Singh et al., 2019). (A review of the health benefits of risky play found that benefits include increased physical activity, reduced sedentary behaviours, and increased social competence and resilience (Brussoni et al., 2015). Where schools increase children's opportunities for adventurous or risky play, cited

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benefits include children who return to the classroom ready to learn, with improved concentration and self-esteem (Lester, Jones & Russell, 2011; Lavrysen et al., 2017). Adventurous play may also reduce children's risk of problematic anxiety and fears, by offering opportunities to learn about coping, uncertainty, and physiological arousal, all of which are implicated in the development of childhood anxiety disorders (Dodd and Lester, 2021; Sandseter and Kennair, 2011). Accordingly, recent research found that the more time British children spent playing adventurously the lower their internalising symptoms (Dodd et al., 2022).

Despite the benefits of adventurous play, evidence suggests that in western societies children's opportunities for it are declining and becoming increasingly restricted. In the United States, fewer children are reported to be playing adventurously than their parents did as children (Clements, 2004) and the spaces where children play most adventurously, in green spaces and indoor play centres, are the spaces where children in Britain are playing the least (Dodd et al., 2021). This decline in adventurous play and the reduction in opportunities for adventurous play can be explained by several factors, including cultural attitudes towards risk, school, peer, familial and parent factors (Brussoni et al., 2012; Morrongiello and Lasenby-Lessard, 2007; Nesbit et al., 2021). The role of parents is particularly important, as they can facilitate or restrict access to play activities, as well as intervene to disrupt or stop the play (McFarland and Laird, 2020).

Several studies have found that parents tend to hold positive attitudes and beliefs about adventurous play, but that the competing perceived barriers are persistent and difficult to overcome (Little, 2015; McFarland and Laird, 2018). Recent qualitative research has highlighted the facilitators and barriers that British parents perceive concerning adventurous play. Using data from the British Children's Play Survey (BCPS) (Dodd et al., 2021), which included a nationally representative sample of parents and caregivers in Britain, Oliver et al. (2022) analysed a subsample of 377 responses to open-ended questions asking parents to identify the facilitators and barriers they perceive to their child's adventurous play. A qualitative framework was developed to capture the breadth of facilitators and barriers identified. The facilitators and barriers identified were consistent with research exploring adventurous play in different countries, such as Australia (Little, 2010; Little et al., 2011; Niehues et al., 2016), the United States (McFarland and Laird, 2018) and New Zealand (Jelleyman et al., 2019) and include positive attitudes or beliefs about the benefits of adventurous play for children, the need for adult supervision, concerns about the risk of injury from adventurous play as well as concerns related to road safety, amongst others.

Whilst the largely qualitative previous research provides rich insights, it is unclear what the most dominant facilitators and barriers are involved in adventurous play in Western societies because the focus has been on capturing the breadth of views. Having a clear understanding of the most common facilitators and barriers is important for informing public health and play promotion programmes. Furthermore, facilitators and barriers may differ across socio-demographic and geographic groups. For example, parents and children who live in cities may experience different facilitators and barriers from those who live in rural areas. Identifying substantive differences between groups is important to ensure programmes are appropriate and aligned with needs.

The current study is the first to explore these questions regarding parents in Britain and is also the first large-scale study to address this topic using open-ended questions rather than forced choice. Using open-ended questions is important because it ensures that the findings are led by the issues parents highlight as important, rather than the issues that researchers consider might be important. Using the qualitative framework of facilitators and barriers identified by Oliver et al. (2022), a quantitative coding scheme was developed and applied to the complete sample ($n = 1919$) of open responses gathered in the BCPS (Dodd et al., 2021). The following research questions were addressed.

1. What are the most common facilitators of and barriers to adventurous play identified by parents in Britain?
2. Do the parent perceived facilitators of and barriers to adventurous play differ by socio-demographic and geographic group?

1. Methods

1.1. Participants

This study analysed data collected as part of the BCPS (Dodd et al., 2021; raw data available: <https://doi.org/10.5255/UKDA-SN-8793-1>). Participants were 1919 parents and caregivers living in Britain (54% female) with children (49% female) aged 5–11 years ($M = 8.45$; $SD = 1.99$). The demographic characteristics of the sample can be seen in Table 1. Participants were recruited via YouGov, a UK public opinion research company. The survey was completed online and anonymously. The majority of participants were parents/stepparents (97.3%) and therefore we refer to them as parents for simplicity. The methods and procedures were approved by the University of Reading School of Psychology and Clinical Language Sciences Ethics Committee (2020-003-HD). The coded data and analysis script are available here: <https://doi.org/10.17605/OSF.IO/2E8RQ>

1.2. Measures

The current study focuses on the questions from the BCPS that asked parents to provide socio-demographic and geographic information, as well as their responses to two open-ended questions about the facilitators of and barriers to adventurous play.

1.3. Socio-demographic and geographic factors

The BCPS included multiple socio-demographic questions. The socio-demographic information used for the current study included: parent sex, child sex, child age group (younger [age 5–7]; older [age 8–11]) parent age group (younger [18–34]; middle [35–44]; older [45+]), parent ethnicity (White ethnicities; Non-White ethnicities), socio-

Table 1
Demographic characteristics of the sample.

Characteristic	Subcategory	N (%)
Parent sex	Male	881 (46%)
	Female	1038 (54%)
Child sex	Male	982 (51%)
	Female	937 (49%)
Child age group	Younger (age 5–7)	634 (33%)
	Older (age 8–11)	1285 (67%)
Parent age group	Younger (18–34)	399 (21%)
	Middle (35–44)	1026 (53%)
	Older (45+)	494 (26%)
Parent ethnicity ¹	White ethnicities	1415 (74%)
	Non-White ethnicities	141 (7%)
	No response	363 (19%)
Socio-Economic Status ² (SES)	Higher	1135 (59%)
	Lower	784 (41%)
Child disability ^{1,3}	Yes	243 (13%)
	No	1597 (83%)
	No response	79 (4%)
	Geographic information	Urban
	Town or Fringe	206 (11%)
	Rural	192 (10%)

¹ Some data are missing as some parents chose not to provide this information.

² The demographic classification of SES from The Market Research Society classifies families based on the occupation of the head of the household and is typically categorised as a binary variable representing higher/middle class or lower/working class.

³ Defined as a 'diagnosed learning disability, mental health disorder or physical disability'.

economic status (SES) (higher; lower) and child learning disability, mental health problems or physical disability (yes; no). The geographic information used was information on whether parents lived in urban, rural, or town/fringe areas.

The socio-demographic factor of parent ethnicity was initially explored as five subcategories: White British; Other White; Mixed ethnicities; Asian or Asian British; Black or Black British (Office for National Statistics, 2017). Still, some subcategories had low participant numbers and so, to reduce the potential impact on the reliability of the main analyses, the categories were collapsed into White/Non-White categories. Parents who indicated their ethnicity was 'Other' were also included in the main analyses in the Non-White category. For information, we have provided the breakdown of barriers and facilitators by the five subcategories in the supplementary material.

1.4. Open-ended questions

The term "adventurous play" was defined for parents and they were asked two open-ended questions. These were: 'Which factors, if any, allow you to let/encourage your child aged (5–11) to play in an adventurous way?' and 'Which factors, if any, make it difficult for you to let/encourage your child aged (5–11) to play in an adventurous way?'. The questions aimed to elicit responses about the perceived facilitators of and barriers to their child's adventurous play. Parents were encouraged to provide as much information as possible in their answers (see raw data file).

1.5. Coding scheme

The current study coded the facilitators and barriers identified by parents in their responses to the two open-ended questions asked as part of the BCPS. To code the responses, a quantitative coding scheme was developed using the qualitative framework created by Oliver et al. (2022). A range of facilitators and barriers were identified by Oliver et al. (2022) described by four overarching categories, each containing themes. The overarching categories were: Social Environment; Physical Environment; Risk of Injury and Child Factors (Framework can be found here: <https://doi.org/10.17605/OSF.IO/2E8RQ>). As most themes could be both a facilitator and barrier (e.g., supervision is a facilitator when parents feel more comfortable due to the presence of adults to supervise the play and is a barrier when parents worry there are no adults present to supervise the play), there was only one framework.

To create the quantitative coding scheme, each theme within the framework (e.g., Supervision, Busy Roads, Child Attributes) became a code and was operationalised with a definition. The full coding scheme can be found here: <https://doi.org/10.17605/OSF.IO/2E8RQ>

Some codes were created in addition to the original framework to capture blank or nonsensical responses ('Blank Answers/Nonsensical Text'), responses that appeared irrelevant or ambiguous ('Response not Relevant/Ambiguous Answers'), responses that indicated the parent was unsure how to answer ('Don't Know/Not Sure') and responses that were sensible but did not fit within the codes derived from the original framework ('Codable but not in Original Coding Scheme/Framework'). A general code of 'Safety' was also included as an additional code to capture responses that referenced safety or the safety of the environment, but where not enough information was given to attribute the response to a more specific theme e.g. a theme within the social or physical environment. The themes 'younger siblings' and 'older siblings' from the original framework were collapsed into one 'Siblings' code for simplicity. The final coding scheme included 32 possible codes.

For each response provided by the sample of 1919 parents, all relevant codes were assigned a 1 to indicate the code was present in the response. All other codes were assigned a zero to indicate the code was absent in the response. As parents often gave more than one response, multiple codes could be assigned.

1.6. Procedure and reliability checks

Two coders coded the dataset. The first author (BO) was the primary coder and coded the full dataset (1919 responses). A secondary coder coded 25% of the dataset (480 responses). The primary coder trained the secondary coder on how to apply the coding scheme using training examples. The training examples can be found here: <https://doi.org/10.17605/OSF.IO/2E8RQ>

Both coders coded all the identified facilitators and barriers within responses. On occasion, responses were intended as a facilitator or barrier but were recorded in response to the incorrect question. When this occurred, coders were instructed to code the answer as it was intended. For example, if a response stated 'the roads are too busy' under the facilitator's question, this was coded as a barrier under the code 'Roads'.

All coding and reliability checks were completed in quarterly increments, to prevent coder drift. Inter-rater reliability checks were conducted using the 'irr' package in R (Gamer, 2012). Reliability checks were conducted separately for the facilitator's coding and the barriers coding, in line with the two questions that parents responded to (see analysis script for further details).

Following reliability checks conducted on the first and second rounds of coding, some changes were made to the coding scheme, either through the addition of a code or through clarifying code definitions. See reflective notes (<https://doi.org/10.17605/OSF.IO/2E8RQ>) for a full description of the changes made following each round of reliability checks.

No additional changes were made during the penultimate and final rounds of coding. Data from these rounds were used to assess the reliability of the finalised coding scheme. Agreement between the coders across the facilitators and barriers coding ranged from 92.1% to 100%. The average kappa value was 0.86 (range = 0.33–1). Six codes had kappa values below 0.7 but, in all cases, there was a small amount of data coded as present which makes the values unreliable (Brennan and Silman, 1992).

Once the above reliability checks had been completed, the primary coder revisited the first and second coding blocks to ensure that all data were coded in line with the final coding scheme. Data from the primary coder was used in the main analyses.

1.7. Analyses

All analyses were conducted using the statistical software R (R Core Team, 2021).

Missing or Excluded Data. Every participant received a code for their response to the barriers question and the facilitators question. Where responses were blank or did not make sense, they were coded as 'Blank/Nonsensical'. In addition, 'Response not Relevant/Ambiguous Answers', 'Codable but not in Original Coding Scheme/Framework', and 'Don't Know/Not Sure' codes were used as appropriate.

In the facilitator's data, 17% of responses were coded as ambiguous, 8% were 'don't know' responses, 7% were blank responses and 1% of responses were codable but not included in the original framework. The relatively high number of ambiguous codes occurred because the data were collected within an online survey and participants sometimes did not give enough detail to be coded accurately, for example 'whether it's in a semi-controlled environment', which could relate to supervision, the physical environment or safety more generally. An example facilitator that was codable but not included in the original framework was 'the ability to access adult help or first aid'. In the barriers data, 8% of responses were coded as ambiguous, 6% were blank responses, 5% of responses were 'don't know' and 2% of responses were codable but not included in the original framework. An example barrier that was codable but not included in the original framework was 'the possible negative effect of adventurous play on the child's confidence and fears' (see <https://doi.org/10.17605/OSF.IO/2E8RQ> for the full list of additional facilitators

and barriers identified).

Before analysis, all data receiving the codes 'Blank/Nonsensical', 'Response not Relevant/Ambiguous Answers', 'Codable but not in Original Coding Scheme/Framework', and 'Don't Know/Not Sure' were excluded from the dataset given that the focus was on identified barriers and facilitators. In total 350 participants were excluded from the barrier analysis and 521 were excluded from the facilitator analysis because their responses received one of the above codes. A series of chi-squared analyses were conducted to examine whether excluded participants differed significantly ($p < 0.05$) from those whose responses contributed to the analyses. Participants excluded from barrier analyses were more likely to be male parents and were younger but did not differ on SES, ethnicity, disability status, child age, child gender, or location. Participants excluded from the facilitator analysis were lower SES and younger but did not differ on parent sex, ethnicity, disability status, child age, child gender, or location.

In addition to the excluded data, some participants chose not to answer the ethnicity question (363; 19%) and/or the child disability question (79; 4%) (see Table 1). We chose to conduct analyses using listwise deletion because we did not feel it was ethically appropriate to impute missing data related to protected characteristics. People who choose not to respond to demographic questions are more likely to come from underrepresented groups (Moscou et al., 2003), making the data missing not at random. Given that participants have chosen not to answer these questions there are ethical considerations in estimating what their responses would have been. Instead, to address this missing data we examined the barrier and facilitator responses for participants with missing ethnicity data and missing disability data separately (see relevant sections of the results).

2. Results

Results from the main analyses are shown under the heading of each research question.

Research Question 1. What are the most common facilitators of and barriers to adventurous play identified by parents in Britain?

To ascertain the most identified facilitators and barriers, descriptive summaries were created that depicted the frequencies, proportions, and ranks of each facilitator and barrier. Facilitators and barriers were ranked using the proportion of parents (/1919) who identified a particular facilitator or barrier. The ten most identified facilitators and barriers are reported. To note, parents identified a wide range of factors as both facilitators and barriers and the most identified factors were cited by less than 20% of the sample. This statistic should be considered when interpreting the findings below.

2.1. Facilitators

The ten most identified facilitators are displayed in Fig. 1, with corresponding proportions of participants citing each facilitator. The top five were: attitudes and beliefs about the benefits of adventurous play; adult supervision; general safety; child attributes and conditions of adventurous play areas and activities. Proportions of parents who cited the top five facilitators in their responses ranged from 9% to 17%.

2.2. Barriers

The ten most identified barriers are displayed in Fig. 2, with corresponding proportions of responses accounted for by each. The top five were: child attributes; concerns about the safety of society; concerns about the risk of injury from adventurous play; general safety concerns and concerns about roads. Proportions of parents who cited the top five barriers in their responses ranged from 9% to 14%.

As parents often gave more than one response to the facilitators and barriers questions, we also checked whether the results were affected if

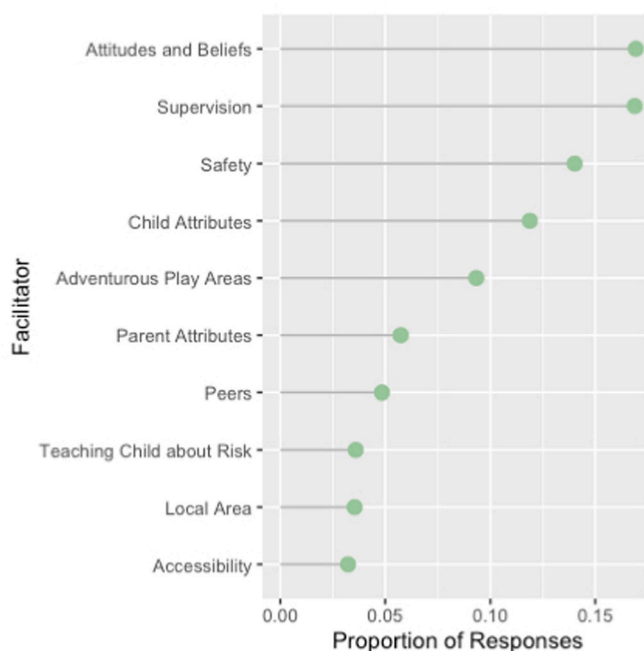


Fig. 1. The ten most identified facilitators of children's adventurous play.

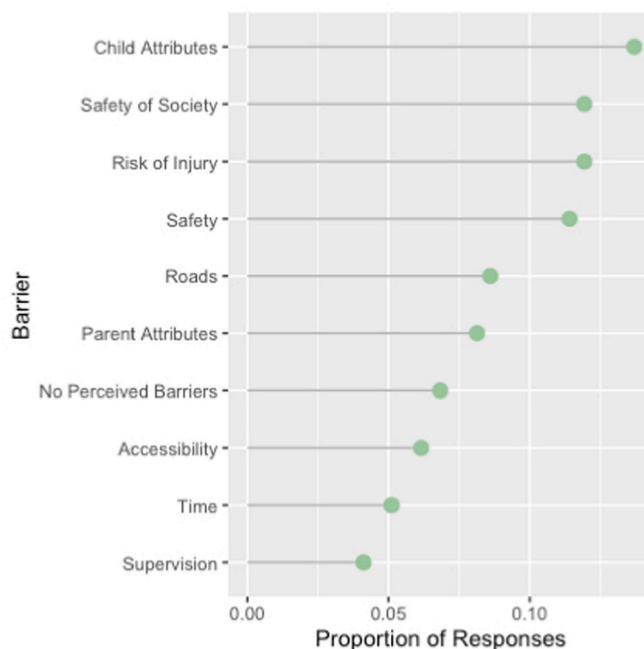


Fig. 2. The ten most identified barriers to children's adventurous play.

we focused only on the responses, they gave first, and overall, the findings were consistent.

Research Question 2. Do the parent perceived facilitators of and barriers to adventurous play differ by socio-demographic and geographic group?

The following socio-demographic and geographic factors were examined: parent sex, child sex, child age group, parent age group, parent ethnicity, SES, child disability, and whether children lived in urban, rural, or town/fringe areas.

Descriptive summaries were created for facilitators and barriers for each socio-demographic and geographic factor subcategory separately

(e.g., mothers/fathers) as well as for the subgroup of participants who did not report their ethnicity and the subgroup who did not report whether their child had a disability. The descriptive summaries were visually inspected before chi-square analyses were conducted to examine whether the proportion of participants identifying each of the top five facilitators and barriers differed by factor subcategory (e.g., are mothers more likely to identify supervision as being a facilitator than fathers?). We chose to focus on the top five because Figs. 1 and 2 show that after the top five, the proportions of responses that the remaining facilitators and barriers represented became very small. If different codes were included in the top five for different subcategories (e.g., mothers and fathers), we included as many factors as required to capture the top five for each relevant subcategory. As a result, in the main analyses, sometimes six codes were included instead of five.

The main analyses are reported separately for the facilitators and barriers data.

2.3. Facilitators

The five most identified facilitators within each of the socio-demographic and geographic subcategories independently (including the subgroups with missing ethnicity and disability data) were consistent with the top five across the whole sample, showing strong consistency across groups (see Fig. 1). Chi-square analyses supported this consistency. After correcting for multiple comparisons (adjusted *p*-values were based on the number of comparisons completed on a particular facilitator; e.g., Supervision; Child Attributes), Chi-square analyses indicated that across the socio-demographic and geographic factor subcategories, there were no significant differences in the proportion of parents citing each of the five most identified facilitators.

2.4. Barriers

The five most cited barriers across socio-demographic and geographic factor subcategories were generally consistent with the top five across the whole sample (see Fig. 2). In some subcategories, 'Parent Attributes' was in the top five barriers instead of 'Roads' whereas in other subcategories 'No Perceived Barriers' was in the top five instead of one or other of these. In such cases, chi-square analyses were completed on the top six barriers to account for this. As with the facilitator's data, chi-square analyses were conducted with adjusted *p*-values to correct for multiple comparisons. This consistency across subcategories included those with missing ethnicity data and missing disability data, except that 'Supervision' featured in the top 5 barriers for those missing disability data. Closer inspection showed that 'Supervision' featured in the missing disability data was only reported by five participants in this subgroup (6%), which is relatively comparable to the proportion of participants citing 'Supervision' as a barrier in the sample (4%).

For child sex, parent age group, parent ethnicity, SES, and whether children live in urban, rural, or town/fringe areas, no significant differences were found across subcategories in the proportion of parents citing each of the most identified barriers. In contrast, for child disability, child age, and parent sex there were differences between subcategories (see Table 2).

Analyses indicated that, when correcting for multiple comparisons,

there was a significant difference between child disability subcategories and the barrier 'Child Attributes': $\chi^2(1) = 129.26, p < 0.001$ (Bonferroni corrected *p*-value 0.0063); more parents who indicated that their child had a disability identified their child's attributes as a barrier to adventurous play relative to parents who indicated that their child did not have a disability (see Table 2).

Significant differences were also found between child age group subcategories and the barrier 'Safety of Society': $\chi^2(1) = 11.00, p < 0.001$ (Bonferroni corrected *p*-value 0.0063) and between the child age group and the barrier 'Roads': $\chi^2(1) = 7.69, p = 0.006$ (Bonferroni corrected *p*-value 0.0071). Parents with older children identified both the safety of society and roads as a barrier more frequently than did parents with younger children (see Table 2).

Finally, significant differences were found between parent sex and the barrier 'Parent Attributes': $\chi^2(1) = 12.53, p < 0.001$ (Bonferroni corrected *p*-value 0.0083) and between parent sex and the barrier 'None/No Perceived Barriers': $\chi^2(1) = 6.80, p = 0.009$. Mothers identified parent attributes as a barrier more frequently than fathers and fathers identified no barriers to adventurous play more frequently than mothers (see Table 2).

3. Discussion

It has been proposed that adventurous play offers broad benefits for children's health and development and declining opportunities in western societies for children's access to and engagement with this type of play may be detrimental to their health. Given the importance of parents in facilitating such opportunities, we aimed to explore the most common facilitators of and barriers to children's adventurous play identified by parents in Britain and to explore whether these differ across socio-demographic and geographic groups. The current study is the first to address this question in Britain and the first study internationally to analyse open-ended responses within a nationally representative sample, allowing the findings to be led entirely by the factors parents identified as important. Overall, parents perceived a wide range of facilitators and barriers and no single factor stood out as important to everyone; even the most common factors were cited by less than 20% of the sample. This statistic highlights the complexity of supporting parents to provide adventurous play opportunities for their children.

The five most identified facilitators of adventurous play included positive attitudes and beliefs about the benefits for children's development, health, and well-being, the presence of adult supervision, as well as general perceptions of the safety of play. Perceptions of the child's attributes, including the developmental capability to assess or manage risks and trait-like characteristics, such as being sensible or confident, together with perceptions of adventurous play areas or activities were also commonly identified; settings, activities, and equipment were described as facilitating adventurous play opportunities.

The five most identified barriers to adventurous play included perceptions of child attributes. This comprised concerns relating to a child's ability to keep themselves safe, concerns relating to additional needs, as well as traits such as shyness or low self-esteem. Concerns related to the safety of society, the risk of injury from playing adventurously, the safety of the play in general, and the busyness of roads were also commonly identified. Although not among the five most identified

Table 2
Percentage agreement with specific barriers across sociodemographic subcategories where significant differences were found.

Sociodemographic characteristic	Barrier					
	Subcategory	Child Attributes	Safety of Society	Roads	Parent attributes	No barriers
Child disability	Has disability	37%	-	-	-	-
	No disability	10%	-	-	-	-
Child age	Younger	-	14%	10%	-	-
	Older	-	8%	6%	-	-
Parent	Mother	-	-	-	10%	5%
	Father	-	-	-	6%	9%

barriers across the whole sample of parents, perceptions of parent attributes, related to their or their child's other parents' anxieties and fears were in the top five for some socio-demographic groups.

Overall, the findings of this study are consistent with previous qualitative research across other Westernised countries, including Australia and the United States, which recognised that parents perceive a multitude of facilitators and barriers but also that the considerations underlying their perceptions are similar (Little, 2015; Little et al., 2011; McFarland and Laird, 2018). These underlying considerations appear to be factors that increase or decrease the certainty felt about the child's safety, coupled with considerations related to the child and their attributes.

The most identified facilitators were consistent between and within different socio-demographic and geographic groups, but some differences were seen when exploring the barriers identified by different socio-demographic groups. One difference was that 37% of parents who reported that their child had a physical disability, learning disability, or mental health problem identified child attributes as a barrier, compared to only 10% of parents with typically developing children. Responses referred specifically to the child's diagnosed condition (e.g., autism spectrum disorder), as well as concerns related to the child's ability to assess and manage risks. These findings indicate that child attributes may be *more* of a concern or *more often considered* a concern when children have additional needs. It seems likely that the specific barriers will differ depending on the nature of the child's needs, for example, parents with children who have physical disabilities may perceive some barriers that are distinct from those perceived by parents who have children who have learning difficulties, and the range of responses in the current study reflected this diversity. Due to the design of the present research, it was not possible to delineate the specific challenges that parents with children with different needs may face, and although some research has been conducted into inclusive play for children with additional needs (e.g., Grady-Dominguez et al., 2021; van Engelen et al., 2021) overall, research regarding the facilitators and barriers for parents who have children with different additional needs is limited (e.g., Lynch et al., 2020). Therefore, further research focused on this question is required so that a nuanced understanding of how best to support these children and families to access the full range of play opportunities can be developed.

Other differences across socio-demographic groups were that parents who had children of junior school age (8-11-years) identified the safety of society and busy roads as barriers to adventurous play more frequently than parents who had children of infant school age (5-7-years). These differences align with research that highlights that children's leisure, including their play, becomes more centred around independence and autonomy with increasing age (Christensen et al., 2011; Matthews, 1987; O'Brien et al., 2000). Together, this research suggests that programmes focusing on play for older children should consider the new challenges that may arise as their children grow older, particularly those relating to independent mobility.

The final demographic-related difference was that mothers more frequently identified barriers related to parent attributes than fathers and that fathers identified no barriers to adventurous play more often than mothers. Common responses from mothers that related to parent attributes included reference to their own anxieties, fears, and worries. When fathers did identify parent attributes as barriers, this tended to be related to the mothers' attributes, as opposed to their own. Example responses included references to the mother's overprotectiveness or the mother's dislike for adventurous play. Coupled with differences between mothers and fathers in the likelihood of stating there were no barriers to adventurous play, these findings are consistent with research demonstrating that men are, in general, more comfortable with children's engagement with risk than women (Bogels and Phares, 2008; Brussoni et al., 2013). The anxiety and worries surrounding adventurous play may be especially difficult for parents who experience heightened anxiety, and this should be considered within any public health

interventions and play promotion work; tailored or additional support for these parents is likely to be beneficial.

3.1. Implications and recommendations for intervention

This study has important implications for the design, development, and implementation of public health initiatives to improve children's health via increasing adventurous play opportunities. Before discussing the design, development, and implementation of public health initiatives, it is important to highlight that most of the research into children's risky and adventurous play, including the present study, has been conducted in western contexts. As such, the evidence-based position that this type of play is beneficial for children's health assumes this relatively low-risk context. As Giles et al. (2019) highlight, encouraging parents to support more outdoor, risky play may not be appropriate for some groups of children, such as those growing up in high-risk environments. For those children, public health interventions that focus on healthier environments should be prioritised.

The breadth of factors identified by parents as facilitators and barriers highlights the numerous influences on parents' perceptions and decision-making around their children's play and emphasises the difficulty of interventions to address all the parents' concerns. It is also recognised that while some practical recommendations can be made for parent-focused interventions, support is also required from policy-makers, and urban and transport planners among others to drive positive changes to the safety of society, roads, and play areas. It is unlikely without such change that parents will grant their children more freedom to access adventurous play opportunities (Brown et al., 2019; Wyver et al., 2010).

What can be concluded from the current study is that child safety is central to parents' perceptions of adventurous play, together with positive attitudes and beliefs about the benefits of this type of play and considerations related to child attributes. Overall, parents' views on the key factors that help and stop them from encouraging their children to play adventurously were consistent across different socio-demographic and geographic groups, suggesting interventions targeting these factors are likely to benefit most parents in Britain. Some differences were seen across socio-demographic groups concerning the barriers identified, which may require tailored or additional support.

Based on the current findings, several recommendations for promoting play via working with parents are proposed.

Supporting parents via the facilitators that *help* them to encourage adventurous play.

1. Recognise that child safety lies at the centre of parents' perceptions and decision-making around adventurous play.
2. Provide further education about the benefits of adventurous play for children's learning, development, health, and well-being to strengthen existing positive attitudes.
3. Acknowledge that supervising play is important for parents but, encourage parents to consider *how* they supervise. In Sterman et al. (2020), school staff who were instructed to take a step back rather than directly intervene when children were playing reported that they were better able to observe the children's capabilities in self-management of risks.

Supporting parents with the barriers that *stop* them from encouraging adventurous play.

1. Support parents with tolerating the uncertainty felt concerning child safety. There is some success with interventions that have included risk-reframing strategies, for example, encouragement to experience uncertainty in children's play, the provision of opportunities to observe children's capabilities in assessing and managing risks, and discussions with other parents about the benefits of allowing children to take age-appropriate risks in their play and the possible

negative consequences of not allowing this (Brussoni et al., 2021; Bundy et al., 2011).

2. Provide information about the realistic risk of injury posed by adventurous play; this may include comparisons to the risk of injury posed by organised sports, which is higher (Nauta et al., 2015). This could support parents to reframe their perceptions of the likelihood of injury from playing adventurously.
3. Listen to the specific challenges that parents who have children with additional needs identify and provide tailored support related to these challenges.
4. Recognise that parents with older children may have additional concerns related to independence and support them with the uncertainty that may thereafter arise. This support could include practical tips about how to discuss these risks with the child and setting boundaries for independence that feel appropriate.
5. Offer additional or tailored support to parents who are particularly anxious about adventurous play. This could involve encouraging smaller, more gradual steps towards tolerating uncertainty in their children's play and encouraging a collaborative, whole-family approach.

3.2. Strengths and limitations

Key strengths of the current study are the nationally representative, diverse sample, the balance of male and female parent participation, and the use of open-ended questions, which allowed parents to provide their own thoughts on the facilitators of and barriers to adventurous play. Nonetheless, many parents' responses in this study were coded as ambiguous and due to the design of the research, we were not able to ask for clarification. The collapsing of parent ethnicity into White/Non-White categories for analysis was necessary due to the small numbers in ethnic subgroups but this was a notable limitation. This approach means that possible diversity within ethnic minority sub-groups was not explored. It is noteworthy that the sample was approximately representative of those living in Britain and that to examine differences between ethnic minority groups in Britain would require either very large samples or research specifically focused on this question. Further, a breakdown of the top five barriers and facilitators for the main ethnic groups is provided in supplementary material and few differences were found. A similar limitation relates to the social grade variable which was dichotomous. This variable was collected as a binary variable, so we were not able to explore the subgroups in any more detail. There are therefore potential nuanced differences between groups that we may have missed. Relevant to both limitations is the fact that a lack of representation of minority groups can negatively impact the health and well-being of these subgroups (Redwood and Gill, 2013; Roberts et al., 2020). As such, an important goal of future research is to examine in a more focused way the specific barriers and facilitators that may exist for ethnic minorities and families with lower incomes. A focus on ethnic minorities and families with lower incomes is especially important for research that has implications for the development of interventions.

Additionally, whilst understanding the key facilitators and barriers influencing parents' perceptions and decisions about adventurous play supports the identification of important targets for play promotion, we do not know what parents want help with and in what way they would want to receive this. It will be important for future research to address this question with the view to designing effective and tailored programmes that specifically relate to what parents express they would like support with.

4. Conclusions

Considering that adventurous play has benefits for children's physical health, mental health, and development, this study aimed to identify the most identified facilitators of and barriers to children's adventurous play for parents in Britain. The most identified facilitators and barriers

spanned several factors relating to child safety, attitudes, and beliefs about the benefits of adventurous play, as well as those related to child attributes. Some concerns were highlighted as particularly important for certain groups, for example, the concerns related to child attributes for parents who have children with additional needs. Interventions that capitalise on the factors that parents identify as helpful, such as knowledge of the benefits of adventurous play, and that support parents with the factors they identify as barriers, such as concerns about the likelihood of injury, may be important considering the findings of this research. Future research should explore the concerns that parents would like support with to ensure interventions are tailored and are effective in improving children's adventurous play opportunities for the benefit of their health and development.

Credit author statement

Brooke E. Oliver: Conceptualization, Methodology, Software, Validation, Formal analysis, Data curation, Writing – original draft, Writing – review & editing, Visualisation, Funding acquisition. Rachel J. Nesbit: Methodology, Software, Validation, Formal analysis, Investigation, Resources, Writing – review & editing, Visualisation, Supervision. Rachel McCloy: Methodology, Software, Validation, Formal analysis, Writing – review & editing, Visualisation, Supervision, Funding acquisition. Kate Harvey: Methodology, Writing – review & editing, Supervision. Helen F. Dodd: Conceptualization, Methodology, Software, Validation, Formal analysis, Investigation, Resources, Data curation, Writing – review & editing, Visualisation, Supervision, Project administration, Funding acquisition.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data used in the current study was collected as part of the British Children's Play Survey (BCPS) (Dodd et al., 2021). The complete raw dataset of the BCPS is available via the UK data service here: <https://doi.org/10.5255/UKDA-SN-8793-1>. The data, code and associated materials from the current study are available separately here: <https://doi.org/10.17605/OSF.IO/2E8RQ>

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Appendix A. Supplementary data

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