

The benefits of adventure for children

A summary of research findings



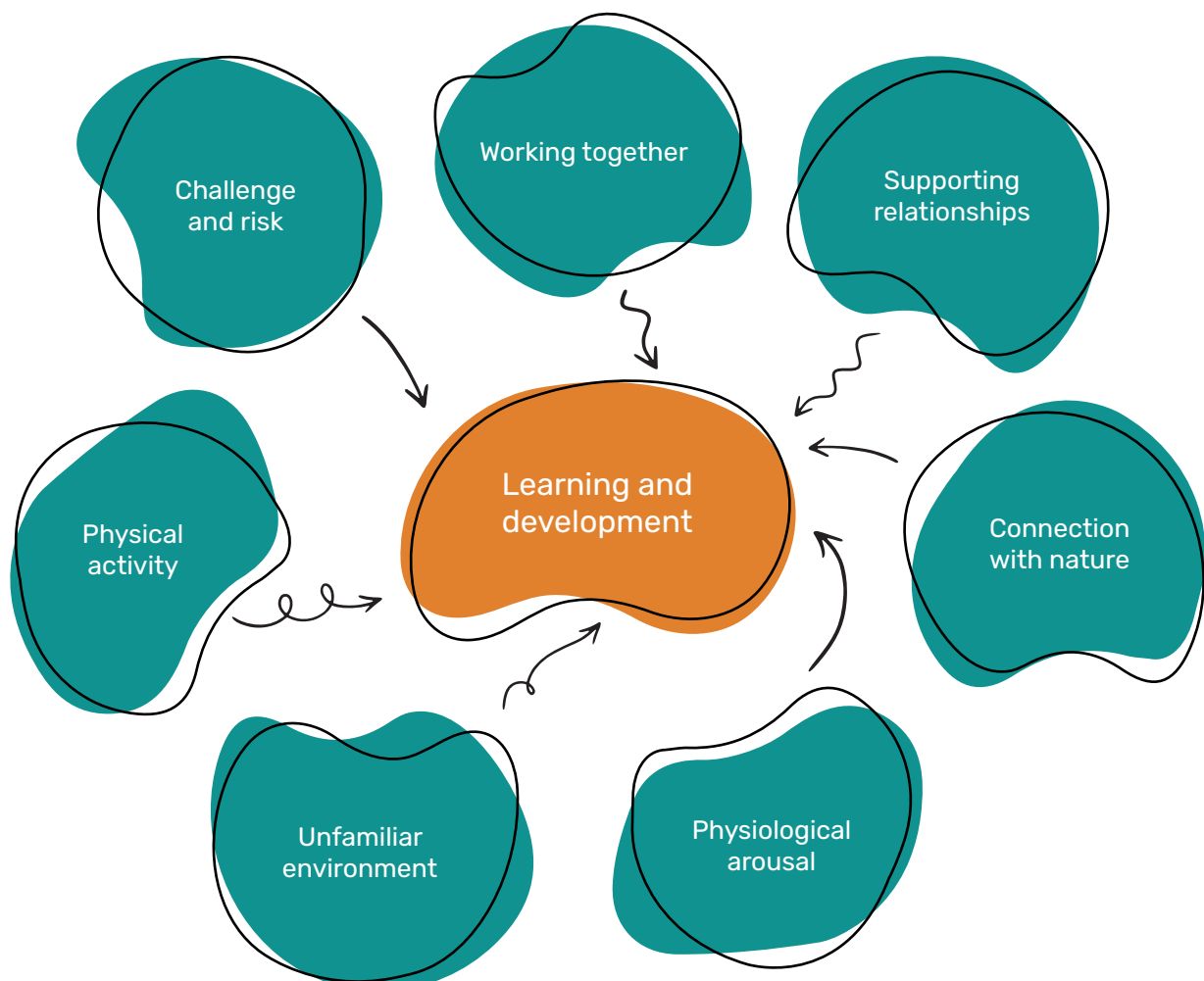
Contents

1. Introduction	2
2. Evidence summaries	3
3. Adventure integrated into Physical Education in schools	4
4. Adventure camps and multi-day adventures	6
5. The benefits of nature	8
6. Adventure for children who are at risk or experiencing a health condition	8
7. Summary	10

There is a large evidence base supporting the benefits of adventure; over 200 published studies have examined the psychological impact of adventure (**Bowen & Neill, 2013**).

Adventure experiences for children are diverse. They might include forest schools, high ropes courses, adventurous play, camping, water sports, and climbing, amongst many other activities. Adventures range from once-in-a-lifetime experiences, through to everyday adventures, accessible to all. Adventure is also used as therapy for children and young people to support a range of difficulties, such as behaviour problems or difficulties with school engagement and attendance.

Adventure experiences benefit children because they offer an **opportunity for learning and development**. These opportunities arise because of the features of adventure (see figure). For example, **Deane and Harré (2014)** highlight that adventure experiences provide: an unfamiliar environment; physical activity with challenge, and team cooperation. Similarly, **Bowen & Neil (2013)** describe the key elements of adventure as including: an emphasis on learning through experience; contact with nature; the presence of a perceived risk, which heightens arousal and creates what is known as eustress, or a positive response to stress.



Each feature of adventure has an impact on children for a different reason, and each is underpinned by its own theory and research evidence. For example, **physical activity** is very strongly associated with a wide range of health benefits, both to physical and mental health (e.g. **Warburton et al., 2006**). Similarly, **contact with nature** is related to broad health benefits (e.g. **Cox et al., 2007; Tillman et al., 2018**). **Dodd & Lester (2021)** describe that because adventure includes **challenge and risk**, it provides children with exposure to uncertainty, physiological arousal and an opportunity to learn about coping effectively.

This experience should then help children to feel more comfortable when faced with future challenges and reduce the likelihood that they will feel anxious and overwhelmed. The **social bonding and connection** that occurs when children work together in a challenging and adventurous context also has benefits for their mental health (**Cohen et al., 2023**).

Evidence summaries

Although not focused on children specifically, **Bowen & Neill (2013)** conducted an analysis of all published studies conducted up to 2012 that examined adventure for therapeutic benefit. At that stage a total of 197 studies were identified that had included over 17,000 people. The results indicated that adventure programmes offered significant benefits across a broad range of outcomes, including:

- *clinical outcomes (such as anxiety and depression)*
- *behaviour*
- *academic attainment*
- *physical health*
- *self-concept (an overarching idea we have about who we are)*
- *social development (improve the wellbeing of every individual within a society)*

The only outcome examined where the evidence was not convincing was morality and spirituality. Fewer studies include a longer-term follow-up, but where studies did the effects appear to be maintained over time.

A recent review provides an overview of the evidence regarding adventure experiences on health outcomes for children and young people. **Peng and Lau (2022)** reviewed a range of adventure experiences. They identified 18 published studies, the majority of which focused on adventure experiences in children and young people aged 9–18 years. Overall, they concluded that **the research evidence indicates that adventure experiences produce physical and social benefits in children**, including children who are healthy as well as children identified as at-risk or experiencing a health condition. Psychological benefits were more inconsistent, due to a greater variety of methods and outcomes measured, but there was some evidence for benefits to self-efficacy, self-esteem and quality of life.

Adventure integrated into Physical Education in schools

Baena-Extremera et al. (2012) studied the benefits of adventure activities within physical education (PE) sessions by providing children aged 15–16 years with challenging, adventurous activities instead of sport-based activities during their usual PE classes at school. Significant improvements were found from before the programme to after the programme on:

- *satisfaction/enjoyment of school*
- *boredom at school*
- *body image*
- *perceived physical competence*
- *perceived physical condition*
- *self-esteem*
- *responsibility*
- *relationships*



This shows that it is not just the physical activity aspect of adventure that benefits children and young people, but that adventure experiences are special and support children's holistic development.

Also adopting an adventure programme within PE lessons, **Gibbons et al. (2010)** examined the impact of an 8-month team challenge program on 10-13 year olds. Across 4 schools, 1802 children took part, with those attending two of the schools completing the programme and those attending the other two schools acting as controls. During the team challenges, children had to work through a series of 30 adventure challenges such as completing an obstacle course. The challenges were designed to require children to work together, communicate and trust one another. At the end, students who had completed the challenge programme, relative to those who had not, had higher:

- *levels of self-worth*
- *perceived scholastic competence*
- *perceived social acceptance*
- *perceived athletic competence*
- *perceived behavioural conduct*
- *perceived social regard from classmates and friends*

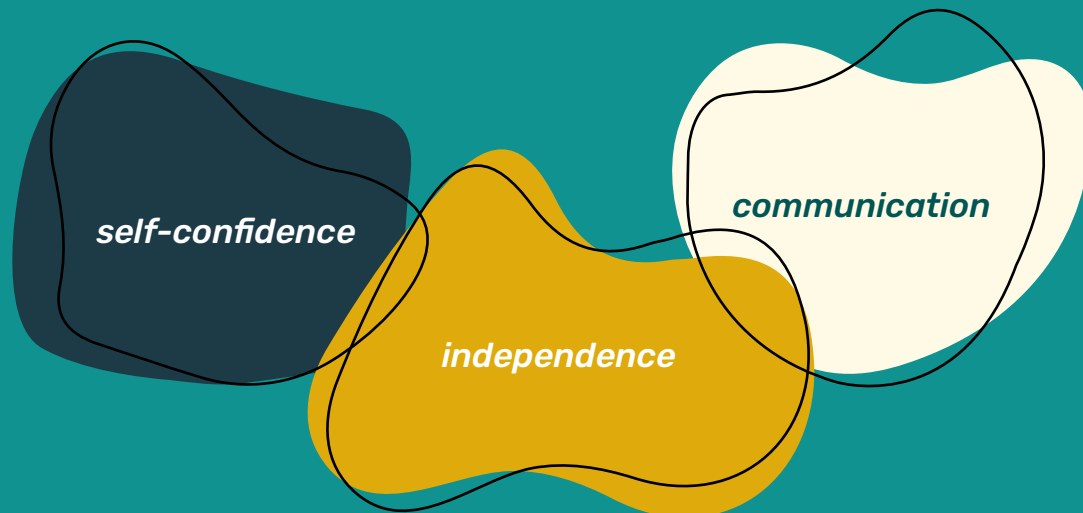
Gibbons and colleagues conducted a further study in **2018** using the same programme as well as an Adventure Curriculum for Physical Education programme. Students aged approximately 11-12 years completed one of the adventure programmes or were in a control group. Children completing either adventure programme, relative to controls who had not, had higher:

- *perceived self-worth*
- *perceived behavioural conduct*
- *perceived scholastic competence*
- *perceived appearance*
- *perceived athletic performance*

Again, these studies show that whilst physical activity is beneficial to children and young people, the benefits are stronger and broader when physical activity takes place within a challenging, adventurous, teamwork context.

Adventure camps and multi-day adventures

School outdoor residential trips have been shown to create lasting impacts (Prince, 2021), including:



Other benefits include confidence, teamwork, life skills, intrapersonal skills and the spark for new activities/hobbies. When adventure residentials are **more intense and challenging they have a stronger impact on personal growth**. The group is also identified as playing a role, with the need to **work as a team, take responsibility and live together identified as key components that lead to benefits** for young people.

Li et al. (2013) conducted a randomised control trial of an adventure-based training programme for children aged approximately 10-11 years. The programme included 5 x 75 minute sessions and a day at an adventure training camp. **Depressive symptoms and anxiety levels were significantly lower at 6-month and 12-month follow-up and self-esteem was higher at 12-month follow-up**, relative to the control group. No significant differences in quality of life were found.

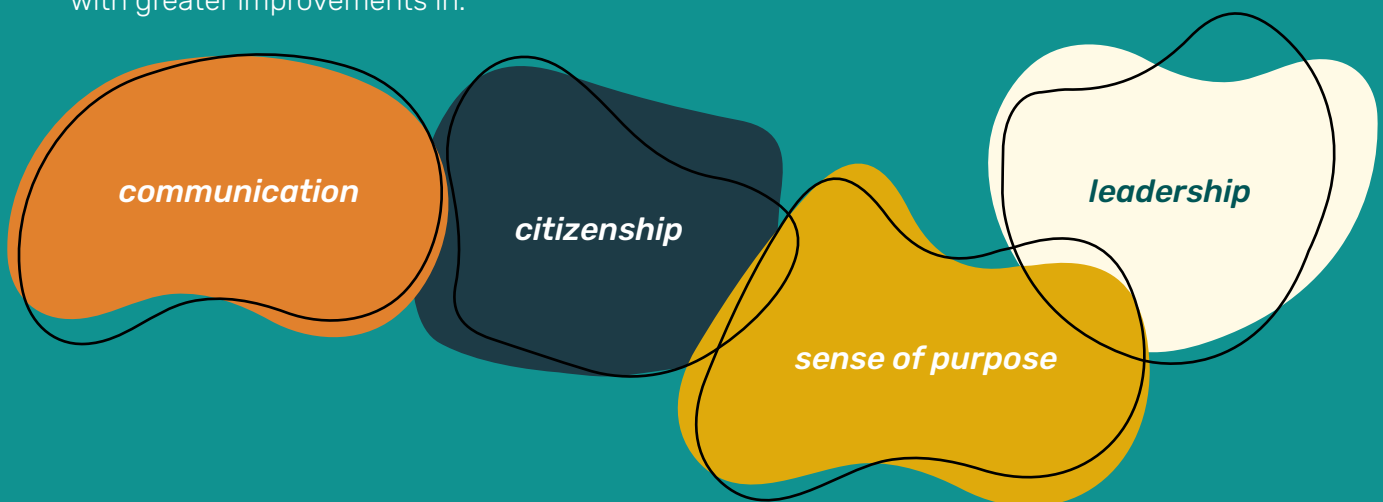
Examining multi-day adventures, Mutz & Müller (2016) focused on adolescent wellbeing and mental health. In one example, 12 x 14-year olds participated in a 9-day hike across the alps. Four days after completing the hike, **child-reported worry and their sense of demands on them had decreased**. There was also a large increase **in mindfulness as well as wellbeing** (underpinned by both happiness and life satisfaction). There was no control group for this study.

Improvements to mental health within a randomised controlled trial design were also found by **Chung et al., (2021)**. These researchers examined the effectiveness of an adventure programme for 12-16 year olds in relation to resilience, self-esteem and depression. Those who participated in the adventure programme went on a 2-day/1-night adventure camp. The control group completed leisure activities for two days. Children who completed the adventure programme showed:

- ***higher resilience***
- ***fewer depressive symptoms***
- ***higher self-esteem 6-months later***

than the control group.

High-adventure programs typically take place outdoors in remote locations and include several days of challenging activities. Participation in high-adventure programmes have been associated with greater improvements in:



than for youths who participated in summer camp programs or those who did neither high-adventure nor camp programs (**Linver et al., 2023**)



The benefits of nature

Mygind et al. (2019) examined the impact of immersive nature experiences and included 489 studies, with 129 of those including children and young people aged under 18 years. Immersive nature experiences may or may not include an adventure component, with studies of short walks and seated relaxation also included. Of the 250 studies that examined mental health broadly defined, around 70% found at least some positive benefit.

This included measures **of wellbeing (including mental health symptoms), psychophysiological stress (such as heart-rate variability and cortisol levels), psychosocial functioning (identity formation, autonomy, resilience, self-efficacy etc.) and cognitive performance (attention, inhibitory control, short-term memory etc.).**

In addition, the review considered outcomes related to physical health and social health. The physical health outcomes were less convincing than the mental health outcomes, except for active behaviours, where 60% of studies found a positive effect. For social health, relatively few studies have been conducted and those that have focus primarily on social skills and relationships. Overall, the results were comparable to mental health, with around 70% reporting at least some benefits but further research on the social benefits of adventure activities is required.

Adventure for children who are at risk or experiencing a health condition

Some research examines how adventure experiences affect children and young people who have been selected for an adventure programme because they are at risk or because they have a certain health condition. For example, examined the effect of an Australian, police-led programme on at-risk youth who had been identified for the programme. This study by **Bowen and Neil (2015)** examined short-term and long-term effects of the programme on life effectiveness skills such as emotional resilience, healthy risk-taking, self-esteem etc., mental health and behavioural conduct. **Broad, positive effects were found for life effectiveness.** In relation to mental health there was some evidence that mental health worsened in the short term but this was followed by **a large improvement in psychological well-being longer term.** There were also fewer behavioural conduct issues at long term follow-up.

There is also evidence that adventure can be beneficial for other populations. For example, an adventure programme combined with CBT resulted in greater **weight loss** than combining exercise with CBT for overweight adolescents (**Jelalian et al., 2005**). Similarly, a positive impact of a wilderness adventure programme on body weight was found in a study of adolescents with a broad range of health problems (**Widmer et al., 2023**). In autistic children aged 3-7 years, a 13-week outdoor adventure programme supported the development of **social cognition, social motivation and social communication** as well as improvements in communication and daily living skills (**Zachor et al., 2017**). For children being treated for cancer, adventure therapy improved physical activity, fatigue, psychological distress, and quality of life (**Chan et al., 2020**).



Summary

Extensive research has examined the benefits of adventure experiences, from challenges conducted within PE lessons, to multi-day treks, and the findings across studies indicate broad, positive benefits for children and young people. Specifically, benefits have been documented in relation to psychological wellbeing and mental health, self-efficacy and behaviour. Adventure experiences offer exposure to uncertainty and fear, contact with nature, opportunity for physical challenge and social connection. As such the mechanisms through which these experiences may positively affect children and young people are many.

At the heart of all adventure experiences though is an opportunity for learning and development that can be harnessed to support children and young people to live healthy, fulfilling lives.

With thanks to the Authors:

Prof. Helen Dodd, University of Exeter, UKRI Future Leaders Fellow

Belinda Kirk, Adventure Mind

and the **AdventureMind Research Panel**

Thank you for the continued support from University of Central Lancashire, University of Exeter and for the design support from Go Ape.

