Resilience through outdoor education: A critical literature review

PS738 - Applied Research Skills - CW1

Introduction

This year, over 300 000 people began their Duke of Edinburgh Award in the UK (The Duke of Edinburgh's Award, 2023), 150 000 people worldwide participated in the Outward Bound program (Outward Bound, 2023), and over 500 000 people began the International Duke of Edinburgh Award (The Duke of Edinburgh's International Award Foundation, 2023). These three outdoor education programs alone have affected millions of people over the years and all three claim to boost resilience (Outward Bound, 2023; The Duke of Edinburgh's Award, 2023; The Duke of Edinburgh's International Award Foundation, 2023) but is this actually the case? This literature review aims to answer the question, does outdoor education increase resilience for under 25-year-olds?

Resilience: A brief history

Research into resilience has taken place since the 1970s (Wright et al., 2013) when children who defied the odds and went on to be successful in life were considered invulnerable (Anthony, 1974; Pines, 1975). It was thought that there was an innate strength of character that protected them. As more research was conducted, 'resilient' replaced 'invulnerable' in psychology terminology (Wright et al., 2013). However, the definition of resilience has evolved over the decades. Early definitions normally referred to bouncing back after facing challenges, however, a more modern definition includes: "the capacity of a dynamic system to withstand or recover from significant challenges that threaten its stability, viability, or development" (Masten, 2011, p. 494).

One issue that affected early resilience research, and still endures to this day, was how to measure whether someone has indeed 'bounced back' (Luthar et al., 2000; Masten & Reed, 2002). There are also various domains that could be affected by adversity including (but not limited to), physical, emotional, and social development. There has been disagreement about when the outcomes should be measured; in what domains; and whether to consider how the individual is feeling since they may be performing well on the outside but grappling with mental health illness on the inside. Evidently, the opinions that individual researchers hold about these issues affects how research is conducted and so can lead to inconsistencies in the theory of resilience.

Much of the initial resilience research was focused on factors that increased the risk of children facing adversity and factors that helped to mitigate this and increase resilience (Wright et al., 2013). A seminal piece of research was the Kauai study (Werner & Smith, 1992) which followed at risk individuals from birth until adulthood and investigated the factors that allowed some to succeed when others did not. Helena Kraemer contributed a lot to this field too (Kraemer et al., 1997, 2001, 2002), which has helped to focus studies on resilience over the decades. Masten (2001, 2007) turned these factors into a short list and they have been well corroborated over the years. The categories of these factors include the support available at home, from the community, and characteristics of the child themselves. There is some debate over the labelling of these factors and whether they activate when adversity is faced or if

they provide passive protection. Some factors are both. It was also recognised that factors that protected against adversity were often at one end of a spectrum with the other end being a risk factor that increased the likelihood of facing adversity. An example of this is and high socioeconomic status (Wright et al., 2013).

After resilience was better defined along with the factors that increase resilience, more research was conducted into how specific interventions can increase resilience (Wright et al., 2013). Wright et al. reports that encouraging competence was found to be a vital element in interventions that increased resilience. Items on the short list from Masten (2001, 2007) were validated as important agents of change for resilience (e.g. Luthar et al., 2000; Luthar & Cicchetti, 2000; Masten, 2001, 2007). A complication with measuring the effects of an intervention is that they could occur at a much later date or indirectly (Wright et al., 2013).

Outdoor Education

Outdoor education is a broad term that encompasses a wide variety of activities such as kayaking, hiking, camping, and rock climbing (Fang et al., 2021). It has been growing since the early 20th century partly in thanks to the scouting movement started by Robert Baden Powell from the UK. Kurt Hahn, who founded the Outward Bound scheme, likened the scheme to a sharp blade that wounds a person and then allows them to heal tougher than before (Richards, 1977). This is a clear link with the concept of resilience. A comprehensive analysis of the outcomes of adventure education programs have suggested that 'support' and 'challenge' are two key elements of the positive effects, along with 'difficult goals' and 'feedback' (Hattie et al., 1997). Although anecdotal evidence suggests that outdoor education is highly effective in achieving its many and varied aims, scientific evidence has been a lot harder to obtain (Neill & Richards, 1998). This literature review aims to tackle this problem and investigate whether outdoor education increases resilience for under 25-year-olds.

Methodology

To find relevant literature on the topic of outdoor education and resilience, internet searches of both Google Scholar and the University of New Buckinghamshire library were conducted. Keywords used included: 'resilience', 'outdoor education', and 'adventure education'. The reference sections of articles were also used to find other relevant literature. All journal articles were from peer-reviewed journals. Although the number of studies about outdoor education was large, the list that explicitly mentioned resilience was a lot smaller. Six of the studies found were on university students, three were on secondary school students and one was on primary school children. All studies were conducted between 2001 and 2019. No studies were found from earlier that specifically mentioned resilience.

Outdoor education and resilience studies

University students

The first study, Neill and Dias (2001), is often cited in subsequent articles, 500 according to Google Scholar (2023). It used the Resilience Scale (Wagnild & Young, 1993) to measure the resilience of 41 university students in Australia who had participated in a 22-day Outward Bound program (Neill & Dias, 2001). It was found that their resilience had increased significantly and with a large effect size compared to a control group of 31 university students. However, the researchers removed two students from the treatment group stating it was due to high resilience and low social support with no other reason. These students' data distorted the results, however, there is no mention of the data being

inaccurate and so it seems they were removed simply to improve the strength of the results. Neill and Dias also mention they removed two outliers from the control group who had high resilience. No explanation was offered for how these outliers were determined or if the results were natural or not. This brings to question why they were removed and if the motivation was to improve the results of the study. Neill and Dias acknowledge that they did not compare the backgrounds of the treatment and control group students, however, their resilience scores had no significant difference before the start of the program. This study had a small sample size and this seems to a problem in most studies (Beightol et al., 2009; Ewert & Yoshino, 2008, 2011; Overholt & Ewert, 2014; Ritchie et al., 2014; Samsudin et al., 2019; Skehill, 2001). Furthermore, Ungar et al. (2005) did not state their full sample size and only Shellman and Hill (2017) had over 100 participants.

Ewert and Yoshino (2008) piloted the Modified Resilience Scale (MRS) by combining the Resilience Scale (Wagnild & Young, 1993), Ego-Resiliency (Block & Kremen, 1996), and the Connor-Davidson Resilience Scale (Connor & Davidson, 2003). Ewert and Yoshino (2008) measured the resilience of 17 university students in the USA completing a similar length outdoor education expedition to the study by Neill and Dias (2001) and came to the same conclusion as them. Ewert and Yoshino's (2008) results were compared with a control group of 20 students. Although the authors claim that resilience had increased, only six out of 37 items had a significant increase which did not significantly change the overall resilience score. Their conclusion does not seem to be in line with their results. This was also the first use of the MRS so at this time, there were no other studies with which to compare its effectiveness. In the study, Ewert and Yoshino are inconsistent when they state that their results agree with a study by Skehill (2001) since Skehill found no significant changes to resilience. Ewert and Yoshino (2008) also state that Skehill's (2001) outdoor education experience lasted 5 weeks when in fact it lasted between a term and an academic year, but the measurements were taken 5 weeks in. These inconsistencies make Ewert and Yoshino's (2008) study less convincing.

3 years later, Ewert and Yoshino (2011) conducted another study using a mixed methods approach also using the MRS. For this study there was a significant increase in resilience for the experimental group compared to the control group with a small to medium effect size. The qualitative aspect of the study completed 2 or 3 years after the expedition allowed for the researchers to consider what processes specific to the expedition helped build resilience. Ewert and Yoshino recommended emphasising the challenging tasks and importance of a cohesive team. The authors highlighted the limitations of interview data including selective memory, interviewer-induced bias, and the "illusion of causality" (Ewert & Yoshino, 2011, p. 47). The authors acknowledged that the control group increased in resilience too and attributed this to normal university life. One of their recommendations for future studies was to extend the time between the two tests which only one study in this review did (Ritchie et al., 2014).

The study by Overholt and Ewert (2014) had a focus on the different experiences between males and females of outdoor education and resilience. They also used the MRS, stating it had been used in previous studies and citing Ewert and Yoshino (2008, 2011). However, this does not seem particularly robust considering the MRS was piloted in 2008 and used by the same people only 3 years later. The findings (Overholt & Ewert, 2014) reported that males had a significant decrease in resilience whereas females experienced a significant increase. The researchers suggested the reason for this result may be that the males had their competency challenged by the course as revealed during the qualitative part of the study. As already stated earlier, competence is a key element of resilience (Wright et al., 2013). An

interesting aspect of the study by Overholt and Ewert (2014) was that it is the only one in this review to have two control groups. One was of students on a completely different course and the other was picked as it had similar leadership aims as the treatment group's course but in a traditional classroom setting. Unfortunately, the discussion section did not explore this aspect of the study as much as the potential reasons behind the gender differences.

Shellman and Hill (2017) had a sample of 132 university students, the only study in this review with more than a 100 participants. They reported significant gains in resilience after their 13-day outdoor education program. This study was the only one to highlight that their students were enrolled in an outdoor orientated course, so perhaps they were predisposed to responding positively to such an intervention. This suggests the results may not be generalisable to other students. This logic applies to other studies (Ewert & Yoshino, 2011; Samsudin et al., 2019) but was not identified as an issue. Shellman and Hill (2017) acknowledged the issue that their study had no control group. Other studies also had no control group (Samsudin et al., 2019; Skehill, 2001) which could be a problem because Ewert and Yoshino (2008, 2001) and Neill and Dias (2001) all observed increases in resilience for their control groups, potentially from normal university life. Therefore, it is important to have a control group for quantitative studies to know whether the results were unique to the participants in the outdoor education experience or not.

Secondary school students and younger

Three studies were found that used secondary school students and the earliest was in Australia by Skehill (2001). Skehill sampled 59 Year 9 students in two schools at the start of, and 5 weeks into, an extended outdoor education program. Skehill found no significant impact on resilience levels of the students. It is interesting to note that this is the only study of secondary students from a high socio-economic status. Skehill admits that the results could have been distorted by the fact that the questionnaire was 61 items long, perhaps too long for students of that age. Also, some of the students knew they had leisure time as soon as they were finished so were incentivised to finish quickly rather than accurately.

Two Canadian studies (Ritchie et al., 2014; Ungar et al., 2005) found positive relationships between an outdoor education experience and resilience. Ungar et al. (2005) was the only study in this review that was fully qualitative, and they found that outdoor activities can foster various positive outcomes that are related to resilience within their sample of at-risk students. Ritchie et al. (2014) saw improvements to resilience for their Aboriginal students compared to the control group 1 month after the outdoor education experience however these returned to normal a year later. The context of this study was particularly specific and perhaps not so generalisable to other populations. Ritchie et al. were the only researchers in this review to try to mitigate the effects of post-group euphoria by measuring resilience a month after the outdoor experience instead of on the last day.

The final study that will be discussed is by Beightol et al. (2009) who studied 52 Year 6 Hispanic students from three similar school taking part in a combined anti-bullying and outdoor education program. There was both a treatment and control group and their resilience levels were measured before, directly after, and 4 months after the program. Like the previous study, this is a very specific context, however, there were significant increases discovered for goals and aspirations, and self-efficacy. Despite this, the overall resilience score did not experience a significant increase between groups or

within groups. Beightol et al. recognised the importance of following up after the outdoor education experience and not letting it become a one off.

Summary of findings and implications for further research

In conclusion, whether resilience can be increased through outdoor education experiences has mixed results from studies evaluated in this literature review. Five studies (Ewert & Yoshino, 2011; Neill & Dias, 2001; Ritchie et al., 2014; Samsudin et al., 2019; Shellman & Hill, 2017) obtained a positive relationship with significant increases to resilience scores but only some of them compared against a control group and only one of them (Shellman & Hill, 2017) had a sample size greater than 100. Two studies (Beightol et al., 2009; Ewert & Yoshino, 2008) showed a significant increase to some factors that affect resilience but not to the overall resilience score. Overhold and Ewert (2014) demonstrated that gender has a part to play since only the females in their study increased their resilience. The study by Skehill (2001) was the only one to observe no impact on levels of resilience after an outdoor education experience.

By critically evaluating the literature there are some key implications for further studies in this field. These include the following:

- sample sizes need to be increased to obtain more robust results,
- measurements should be taken a while after the outdoor education experience to mitigate against post-group euphoria,
- more diverse populations need to be included in future studies as the majority have so far been on university students,
- studies should include control groups as it has been shown that resilience can also increase without outdoor education experiences.

There also seems to be a gap in the literature of studies about students living in an international context, such as attending an international school. With programs such as the International Duke of Edinburgh award being so popular in such schools (The Duke of Edinburgh's International Award Foundation, 2023) it would be worth investigating within this population. With these recommendations taken into consideration, hopefully more definitive answers can be found as to whether outdoor education increases resilience.

Word count: 2713

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