

Case study 1: An Evidence-based practice review report.

Theme: School/Setting Based Interventions for Social, Emotional and Mental Health.

How effective is Bounce Back, a school-based intervention used to promote pupils' mental health and emotional wellbeing?

Summary

The impact of social and emotional development has been recognised as crucial to the educational outcomes of children and young people (Zins et al., 2007). Social and emotional competence leads to children and young people demonstrating resilience which serves as a protective factor to the development of mental health difficulties (Anthony & McLean, 2015). This systematic literature review explored the effectiveness of Bounce Back, a school-based intervention designed to promote the mental health and emotional wellbeing of children and young people. Following a search of three databases (ERIC (EBSCO), PsycINFO and Web of Science), five papers were selected for review using the Gersten et al. (2005) coding protocol and Gough's (2007) Weight of Evidence Framework to assess the quality of each study. Findings revealed a mixture of small to large effect sizes, as well as no effects reported for some measures used. Though overall findings would indicate a positive impact on mental health and emotional wellbeing, there were weaknesses found in the methodology of the studies and therefore conclusions about the effectiveness of Bounce Back should be considered carefully. Limitations of the studies, as well as areas for future research are discussed.

Introduction

Bounce Back

Bounce Back is designed to promote the mental health and emotional wellbeing of pupils in school. Due to differing versions of the intervention and given the limited research literature, the focus of this review seeks to explore the effectiveness of its use in schools, and provide an insight into positive changes that occur concerning children's mental health and emotional wellbeing. Topics covered in one intervention aim to increase children's understanding of resilience and wellbeing, improve their confidence, promote positive thinking and positive emotions, develop social skills and friendships, and improve behaviour (Anthony & McLean, 2015; Humphrey & Panayiotou, 2020). Further, the intervention that is targeted at children who have experienced trauma utilises principles of Cognitive Behavioural Therapy (CBT), such as the cognitive, emotional and behavioural difficulties related to mental health, and includes elements of psychoeducation, problem-solving, and creating a trauma narrative (Grassetti et al., 2020; Langley et al., 2015; Santiago et al., 2018). See Appendix D for a detailed outline of the interventions used.

Psychological Background

The interventions outlined in this review are underpinned by Positive Psychology (Seligman, 1998), as well as being rooted in CBT (Beck, 1967). Positive Psychology can be characterised as promoting happiness, engagement, positive relationships, finding purpose and meaning, and achieving goals to enable individuals to thrive (Ronen et al., 2020). Research suggests that experiencing positive emotions can be a contributing factor to the overall wellbeing of the individual (Miller et al., 2007). Positive education is the term used to describe the implementation of Positive Psychology within the school environment (Ronen et al., 2020), and through positive

education in school, children and young people are able to become more resilient, engaged in learning, and develop their social skills (Seligman et al., 2009).

Cognitive Behavioural Therapy relates to the way in which children and young people perceive and make sense of the world around them. As outlined by Stallard et al. (2015), it provides a framework that supports children and young people in their understanding of the link between their thoughts, feelings, physiological sensations, and behaviours they exhibit. Cognitive Behavioural Therapy encourages individuals to explore how they can adapt their thinking in a way that enables them to cope with challenging situations in a more helpful and positive way (Stallard, 2003).

Rationale and Relevance

The need to improve mental health and wellbeing of children and young people is considered an increasing priority worldwide (Stallard et al., 2015), with research revealing that 1 in 10 children and young people in the UK alone, aged 5-16 years are diagnosed with a mental health condition (Zarobe et al., 2017), this is also supported by the Department of Health and Social Care, and the Department for Education (2018). Issues with mental health have been associated with difficulties developing social skills, emotional regulation, and increased challenging behaviour, which can impact on a child or young person's ability to perform in the classroom and subsequently have a negative impact on their academic progress (Hoagwood et al., 2007). Research has shown that early intervention can positively impact mental health and academic performance later on (Dix et al., 2012), and it is therefore crucial that strategies and supports are put in place early to enable children and young people to reach their full potential and succeed. Social and emotional skills are protective factors

for mental health (EEF, 2019), and it has been recognised that social and emotional skills are just as imperative as academic skills are in promoting the achievement of children and young people in school (Davis et al., 2010). As depicted in Maslow's Hierarchy of Needs (1954), the most basic needs of children, such as safety and security and a sense of belonging, must be met before they are able to function at an optimal level in which learning can occur. In order to meet these needs and maximise the emotional wellbeing of children and young people, schools must work with them to help change their 'perspective of the past, their experience of the present, and their hopes for the future' (Miller et al., 2007).

The Health and Care Professions Council (2016) outlines that working in partnership with schools and families and developing knowledge of evidence-based research are key roles of educational psychologists (EPs). In developing their knowledge and skills, EPs are able to work effectively with schools to support the implementation of interventions that not only promote positive outcomes, but are also cost-effective (EEF, 2019), which will help to encourage more willingness from schools. EPs are also in a good position to help foster positive and valuable relationships between home and school, which research has shown leads to better learning outcomes and success at school, as well as promoting positive mental health outcomes (Christenson & Havsby; 2004Xin et al., 2016). This collaborative way of working is emphasised by the DfE (2016) as significant in supporting the emotional development and reducing the behavioural difficulties of children and young people. Another way in which EPs can support the promotion of mental health and wellbeing of children and young people, is to provide training and ongoing support to schools to upskill staff and ensure high-quality practice is embedded within the school environment (Kelly et al., 2017).

In light of the increasing mental health difficulties in children and young people, it is imperative to explore interventions that prove beneficial in promoting positive outcomes for children in school.

Review Question

How effective is Bounce Back, a school-based intervention used to promote pupils' mental health and emotional wellbeing?

Critical Review of the Evidence

Literature search

A systematic literature search was conducted in January 2021 using three electronic databases: ERIC (EBSCO), PsycINFO and Web of Science. ERIC was chosen for its educational focus, PsycINFO for its psychological focus, and Web of Science for its range of databases across multiple disciplines. The search terms used to identify studies are outlined in Table 1.

Table 1

Search terms used

1	2	3	4	5
Bounce Back OR BounceBack OR BounceBack!	Intervention OR Program* OR Group	Emotional Wellbeing OR Emotion* OR Mental Health	Child* OR Pupils OR Students	School* OR School Based OR School- Based OR Educat*

Note: the “OR” was used to combine search terms. The use of truncation (an asterisk) was used to search for different word endings, including plurals. These search terms were then combined using “AND” to identify studies with all of these terms.

Screening of articles

The initial search generated 86 studies in total. From these studies, 11 duplicates were removed and 75 were screened by title and abstract. Using the inclusion and exclusion criteria illustrated in Table 2, 65 studies were removed with the remaining 10 being selected for full text screening. The full text screening resulted in five studies being removed, leaving five eligible for review (Table 3). The study selection process is illustrated in Figure 1.

Table 2

Inclusion and Exclusion Criteria

Criteria	Inclusion	Exclusion	Rationale
1. Participants	Children attending primary school, aged 4-11 years	Any other participants	The intervention was developed for primary-aged children
2. Intervention	The study is based on the Bounce Back intervention or an adapted version	The study does not include the Bounce Back intervention	This review seeks to explore the impact of this particular intervention
3. Setting	Conducted in a school-based setting	Conducted outside of a school-based setting	This review will not include clinic-based settings
4. Outcome	The study has an outcome variable	Study does not include measures	This review is looking at

measuring impact on mental health or emotional wellbeing

of mental health or emotional wellbeing

measures that determine impact on SEMH outcomes

5. Study design	Experimental design	All other study designs	This review aims to assess causal effect
6. Language	Publications are produced in English	Publications are not produced in English	Author's primary language

Figure 1

Flow diagram showing study selection procedure

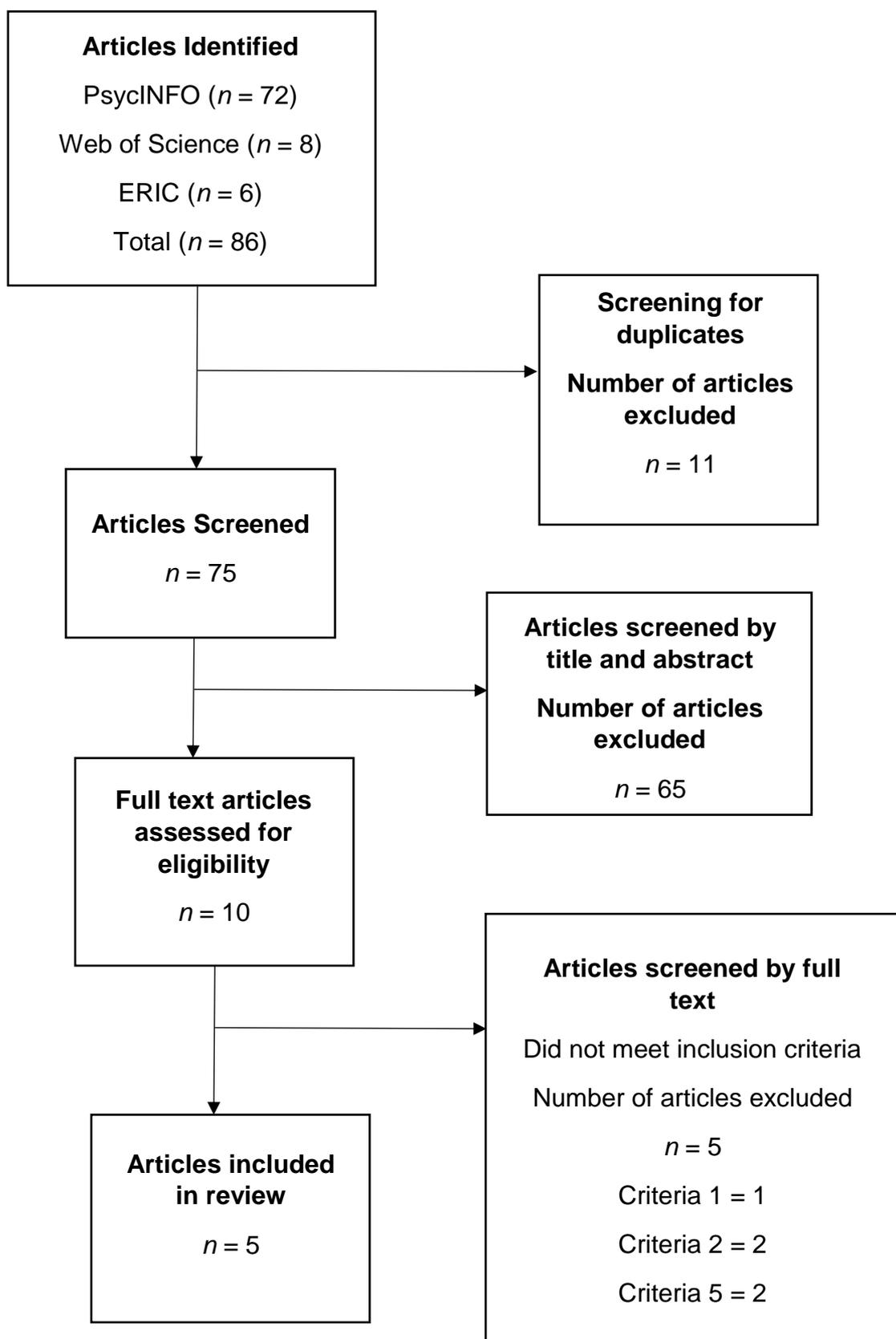


Table 3

Full references of studies included in this review

Anthony, H, & McLean, L. (2015). Promoting mental health at school: Short-term effectiveness of a popular school-based resiliency programme. *Advances in School Mental Health Promotion*, 8(4), 199-215.

Grassetti, S, Haut, B, Beveridge, R, Fowles, T, Andrews, L, & Seidenfeld, A. (2020). When Do Posttraumatic Stress and Related Problems Abate During School-Based Group Therapy for Elementary Students? *School Mental Health*, 12(4), 689-702.

Humphrey, N, & Panayiotou, M. (2020). Bounce Back: Randomised trial of a brief, school-based group intervention for children with emergent mental health difficulties. *European Child & Adolescent Psychiatry*, 2020-08-08.

Langley, A, Gonzalez, A, Sugar, C, Solis, D, & Jaycox, L. (2015). Bounce Back: Effectiveness of an Elementary School-Based Intervention for Multicultural Children Exposed to Traumatic Events. *Journal of Consulting and Clinical Psychology*, 83(5), 853-865.

Santiago, C, Raviv, T, Ros, A, Brewer, S, Distel, L, Torres, S. et al. (2018). Implementing the Bounce Back Trauma Intervention in Urban Elementary Schools: A Real-World Replication Trial. *School Psychology Quarterly*, 33(1), 1-9.

Weight of Evidence

Using Gough's (2007) Weight of Evidence (WoE) Framework, the five studies in this review were evaluated for their quality and relevance. This framework features three key areas; methodological quality (WoE A), methodological relevance (WoE B), and the relevance of the topic to the review question (WoE C).

WoE focuses on the quality of the research design and methodology. For WoE A, Gersten et al.'s (2005) coding protocol was used, with adaptations made for the

purpose of this review (see Appendix B). WoE B consists of a review-specific judgement about the appropriateness of the evidence to the review question. Criteria were based on the Petticrew and Roberts' (2003) Hierarchy of Evidence. For WoE C criteria were created to examine the relevance of the topic to the review question. These three weightings were combined and averaged to give an overall study weighting (WoE D). A summary of each study's WoE ratings is outlined in Table 4. Criteria and ratings for WoE A, WoE B and WoE C can be seen in Appendix C.

Table 4
Weight of Evidence for Studies

Studies	WoE A	WoE B	WoE C	WoE D
Anthony & McLean, (2015)	1	1	2.75	1.6
Grasseti et al. (2020)	1	0	2.5	1.17
Humphrey & Panayiotou, (2020)	2	2	2.5	2.2
Langley et al. (2015)	3	3	2.75	2.9
Santiago et al. (2018)	3	3	2.75	2.9

Low rating = < 1.4, Medium rating = 1.5-2.4, High rating = > 2.4

Participants

A total of 511 participants were recruited across the five studies within this review. The studies varied in sample size, ranging from 20 participants in the smallest study (Grassetti et al., 2020), to 326 in the largest study (Humphrey & Panayiotou, 2020). As part of the inclusion criteria, all children were aged between 5 and 11 years and were attending primary school which was imperative to this review, as it sought to assess the impact of the intervention within a school-based setting. Participants were recruited from one primary school (Grassetti et al., 2020), two primary schools (Anthony & McLean, 2015), four primary schools (Langley et al., 2015), 8 primary schools (Santiago et al., 2018), and 24 primary schools (Humphrey & Panayiotou, 2020). There was a fairly even mix of male and female participants, with only two studies recruiting more males than females (Grassetti et al., 2020; Santiago et al., 2018). Participants of four studies were deemed eligible for the intervention due to having either an emerging mental health difficulty (Humphrey & Panayiotou, 2020), or experience of trauma and mental health difficulties (Grassetti et al., 2020; Langley et al., 2015; Santiago et al., 2018), whilst one study had no such criteria (Anthony & McLean, 2015).

Study Design

Three out of the five studies were Randomised Control Trials (RCT) which are considered to be the highest quality design for exploring the effectiveness of interventions (Petticrew & Roberts, 2003) and therefore were rated higher for WoE B. Studies that employ methods of randomisation are much more rigorous in exploring causal effects (Hariton & Locascio, 2018), which is what this review set out to do, as

stated in the inclusion criteria. The remaining research designs were quasi-experimental; a non-randomised trial (Anthony & McLean, 2015), and a one-group pretest-posttest design (Grasseti et al., 2020). Three studies randomly assigned participants to a treatment or control group (Humphrey & Panayiotou et al., 2020, Langley et al., 2015, and Santiago et al., 2018), which are reflected in WoE B ratings. Quasi-experiments are described as 'experiments that have treatments, outcome measures and experimental units', though do not employ random allocation of participants (Barker et al., 2016). Due to non-random assignment (Anthony & McLean, 2015), this particular study received a lower WoE B rating. Further, the study that employed the one-group pretest-posttest design (Grasseti et al., 2020) received a 'Very Low' WoE B rating.

All studies met the criteria for pre- and post- test measures, as supported by WoE A and WoE B ratings. Two of the studies included 3-month follow-up data (Langley et al., 2015; Santiago et al., 2018), awarding them the highest rating for WoE B. A third study (Anthony & McLean, 2015) only provided follow-up data for one subscale of the measure used and therefore this contributed to a lower WoE B rating.

Intervention

Studies varied in the intervention that was delivered, with two studies based on a school resiliency programme (Anthony & McLean, 2015; Humphrey & Panayiotou, 2020), and the remaining three studies based on an alternative version targeted at pupils who have experienced trauma, and utilising principles of CBT. As the focus of this review was on promoting the emotional wellbeing and mental health of pupils' more generally and did not have a clear focus on a target group, WoE C ratings for

the two studies by Anthony & McLean, (2015), and Humphrey & Panayiotou, (2020) were given the highest weighting for Criteria A, compared to the remaining three studies who implemented an alternative version of Bounce Back, with a target population (Grasseti et al., 2020; Langley et al., 2015; Santiago et al., 2018).

The duration and frequency of the interventions remained quite similar across all studies, ranging from 9-10 group sessions delivered each week for up to 1 hour. Individual sessions that focused on creating a trauma narrative were used within the three targeted interventions (Grasseti et al., 2020; Langley et al., 2015; Santiago et al., 2018) as an addition to the 10 sessions pupils received; these lasted approximately 30-50 minutes. All interventions were conducted within the school setting, as set out in the inclusion criteria, and implemented during school hours, resulting in the highest rating being given for WoE C Criteria B. As reflected in WoE A, all studies provided information about who the intervention was implemented and facilitated by, this was a mix of school social workers (Santiago et al., 2018), school-based psychologists (Grasseti et al., 2020; Langley et al., 2015), and the classroom teacher and a researcher (Anthony & McLean, 2015).

Measures

The studies varied in the tools used to measure pupils' emotional wellbeing and mental health. All five studies had a measurement of mental health and/or emotional wellbeing, as reflected in the WoE C Criteria C scores, with one study (Langley et al., 2015) receiving the highest rating for having measures of both. As reflected in WoE A, four out of the five studies (Grasseti et al., 2020; Humphrey & Panayiotou, 2020; Langley et al., 2015; Santiago et al., 2018) used multiple measures specific to the

intervention, which include measures that can be generalised, this contributed towards the overall high WoE A rating for two of these studies, reflected in Appendix C, Table 1.

Reporting of reliability and validity of the measures used within all studies varied, with both being reported (Anthony & McLean, 2020; Langley et al., 2015; Santiago et al., 2018), only reliability being reported (Grassetti et al., 2020), which also reported good inter-rater reliability, or neither being reported (Humphrey & Panayiotou, 2020). Although Anthony and McLean, (2020) reported both reliability and validity, this did not have a significant impact on the overall WoE A score for that particular study.

Findings and Effect Sizes

A summary of the outcome measures and effect sizes for each study can be found in Table 5. These values have been interpreted using Cohen's (1992) descriptors. All five studies include pre- and post- test effect sizes, however only two provided complete follow-up data (Langley et al., 2015 & Santiago et al., 2018) to determine whether positive changes were maintained over time; this contributed to a higher overall WoE D rating for these two studies. Effect size calculations have been reported for all studies and outcome measures were obtained at appropriate times, as reflected in WoE A. Follow-up effect sizes were not sufficiently reported for one study (Anthony & McLean, 2015), and therefore this was not included in the table. The results for four of the studies represent differences between intervention and control groups, whilst Grassetti et al. (2020) did not compare against a control group, and therefore results for this study determine the effect of the intervention on one group from pre-test to post-test; this resulted in a WoE B rating of 'Very Low' for this particular study.

Calculation of the effect sizes differed for each study, with two providing Cohen's d scores (Grasseti et al., 2020; Humphrey & Panayiotou, 2020), one converted effect sizes from Cohen's f to Cohen's d (Langley et al., 2015), one provided partial eta-squared values and was therefore also converted to Cohen's d (Santiago et al., 2018), and the final study (Anthony & McLean, 2015) provided mean and standard deviation scores which were used to calculate the Cohen's d score. See Appendix E for the effect size calculators used.

Effect sizes ranged from small to large for post-test scores, with some measures reporting no effect (Humphrey & Panayiotou, 2020; Langley et al., 2015; Santiago et al., 2018). The follow up data of two studies (Langley et al., 2015; Santiago et al., 2018) indicate the difference between pre-test scores and 3 months post-test for the intervention groups to determine the effectiveness of the intervention. Post-test comparison between intervention and control groups revealed negligible effect sizes for some of the measures, which would make it difficult to reliably infer that the effects seen at 3-month follow up for the intervention group are a result of the intervention itself.

The effect sizes reported for Grasseti et al. (2020) would suggest that the intervention in this study had a significant impact on the mental health and wellbeing of those that took part, however due to the absence of a control group to make comparison against, it is unclear as to how effective the intervention was or whether there were other contributing factors; this resulted in a 'low' WoE D score for this particular study.

Table 5

Effect Sizes and Descriptors

Study	Sample Size	Outcome Measure	Post-test		Follow-up (3 months)		WoE D
			Effect Size (Cohen's d)	Descriptor	Effect Size (Cohen's d)	Descriptor	
Langley et al. (2015) ^a	74	Children's Depression Inventory (CDI)	.12	No Effect	.68	Medium	2.9 (High)
		UCLA Posttraumatic Stress Disorder Reaction Index (RI)	.3	Small	1.6	Large	
		Screen for Child Anxiety Related Emotional Disorders (SCARED-C)	.52	Medium	.8	Large	
		Emotion Regulation Checklist (ERC)					
		- <i>Emotion Regulation</i>	.1	No Effect	.28	Small	
- <i>Negativity/Lability</i>	.3	Small	.42	Small			

Table 5

Effect Sizes and Descriptors

Study	Sample Size	Outcome Measure	Post-test		Follow-up (3 months)		WoE D
			Effect Size (Cohen's d)	Descriptor	Effect Size (Cohen's d)	Descriptor	
Humphrey & Panayiotou, (2020)	326	Me and My Feelings			N/A	N/A	2.2 (Medium)
		- <i>Emotional Symptoms</i>	-.21	Small			
		- <i>Behavioural Difficulties</i>	-.03	No Effect			
		Student Resiliency Survey					
		- <i>Problem-Solving</i>	.16	No Effect			
		- <i>Self-esteem</i>	.21	Small			
Santiago et al. (2018) ^a	52	Children's Depression Inventory (CDI)	.04	No Effect	.43	Small	2.9 (High)
		UCLA Posttraumatic Stress Disorder Reaction Index (RI)	.22	Small	.75	Medium	

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Effect Sizes and Descriptors

Study	Sample Size	Outcome Measure	Post-test		Follow-up (3 months)		WoE D
			Effect Size (Cohen's d)	Descriptor	Effect Size (Cohen's d)	Descriptor	
		Screen for Child Anxiety Related Emotional Disorders (SCARED-C)	.02	No Effect	.24	Small	
		Responses to Stress Questionnaire (RSQ)	.26	Small	.56	Medium	
Anthony & McLean, (2015) ^b	39	The Resiliency Scales for Children and Adolescents: A Profile of Personal Strengths (RSCA)			N/A	N/A	1.6 (Medium)
		- MAS	1.09	Large			
		- REL	.58	Medium			
		- REA	.32	Small			
Grassetti et al. (2020)	20	UCLA Posttraumatic Stress Disorder Reaction Index (RI)	.98	Large	N/A	N/A	1.17 (Small)

Table 5

Effect Sizes and Descriptors

Study	Sample Size	Outcome Measure	Post-test		Follow-up (3 months)		WoE D
			Effect Size (Cohen's d)	Descriptor	Effect Size (Cohen's d)	Descriptor	
		Top Problems/Brief Problems Checklist (TP/BPC)					
		- <i>Internalising</i>	1.27	Large			
		- <i>Externalising</i>	1.17	Large			
		- <i>Distress</i>	.66	Medium			

Cohen's d - .2 = small, .5 = medium, .8 = large

^{a/b} – see Appendix E for the effect size calculator used

An overview of all studies can be seen in Appendix D.

Conclusions and Recommendations

Conclusions

The purpose of this review was to explore the effectiveness of Bounce Back in promoting the mental health and emotional wellbeing of pupils in school, which are considered imperative to the social development, educational attainment, and future outcomes of children and young people (Kelly et al., 2017). Of the five studies reviewed, four had WoE D scores ranging from 'medium' to 'high', with one study receiving a 'low' score (Grassetti et al., 2020). Overall the findings suggest that Bounce Back, in its use as a targeted intervention has a positive impact on mental health difficulties, such as symptoms of posttraumatic stress disorder (PTSD), depression and anxiety (Grassetti et al., 2020, Langley et al., 2015, Santiago et al., 2018). Further, factors relating to emotional wellbeing, such as; emotional regulation, self-esteem and coping skills, improved significantly across all studies. The intervention that focused on building resiliency in pupils at school (Anthony & McLean, 2015) yielded a mixture of effect sizes but averages to a 'medium' effect size, which would suggest that this intervention had a positive impact on the emotional wellbeing of pupils. Though the interventions reviewed differ in content and implementation, they all had a shared focus on promoting the mental health and wellbeing of pupils.

Limitations

Whilst a number of effect sizes can be seen across studies, due to the difference in interventions and content delivered, and the methodological quality of each study, it is difficult to determine the overall effectiveness of the interventions outlined in this review. Sample sizes for most of the studies were relatively small which could suggest

they had low power; when power is low it is more likely for large effects to be detected which may result in smaller effects, though important, not being identified (Krzywinski et al., 2013). Another limitation is the absence of a control group in one study (Grassetti et al., 2020), meaning comparisons against an intervention group to measure impact could not be made. Without a control group there is uncertainty about whether positive changes occurred due to the intervention or unobserved factors that may have occurred simultaneously (Gopalan et al., 2020), therefore generalisation of the findings are limited. Further, the target population identified in three of the studies (Grassetti et al., 2020; Langley et al., 2015; Santiago et al., 2018) could be seen as a limitation as the pupils screened for these studies had experienced trauma and the intervention provided specific content, making it impossible to generalise.

Future Research

At this moment in time, the Bounce Back resiliency intervention does not have enough research supporting its effectiveness, and therefore a recommendation for future research would be to conduct more studies to further investigate the impact. Moreover, the trauma focused intervention of Bounce Back was targeted and although beneficial for that target population, results cannot be generalised, therefore future studies may benefit from utilising the content within this intervention, but with the removal of the trauma aspect. Furthermore, the application of a larger sample size would enable findings to be better generalised and therefore increase confidence in outcomes.

Implications for EP practice

An essential part of the EP role is working in collaboration with children and young people, families and schools. Of the studies reviewed, three involved parents in the

intervention process which research has found to increase self-esteem, motivation and engagement of children and young people (Goodall & Montgomery, 2014). In future, all interventions implemented with the intention of promoting mental health and wellbeing would benefit from parental involvement, keeping the systems around the child in mind and fostering positive, trusting relationships between home and school (Ron & Edith, 2013).

Considering these limitations and areas for future research, it is recommended that EPs work to support further research in the area of mental health and emotional wellbeing to identify and ensure the implementation of appropriate and effective interventions that will prove pivotal to the outcomes of children and young people (Kelly et al., 2017).

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in children aged 9/10 years. *Public Health Research* (Southampton, England), 3(14), 1-88.

Ma, X, Shen, J, Krenn, H, Hu, S, & Yuan, J. (2016). A Meta-Analysis of the Relationship Between Learning Outcomes and Parental Involvement During Early Childhood Education and Early Elementary Education. *Educational Psychology Review*, 28(4), 771-801.

Zarobe, L, & Bungay, H. (2017). The role of arts activities in developing resilience and mental wellbeing in children and young people a rapid review of the literature. *Perspectives in Public Health*, 137(6), 337-347.

Zins, J, Bloodworth, M, Weissberg, R, & Walberg, H. (2007). The Scientific Base Linking Social and Emotional Learning to School Success. *Journal of Educational and Psychological Consultation*, 17(2-3), 191-210.

Appendices

Appendix A – Excluded Studies

Table 1

List of excluded studies at full review

Excluded Studies	Exclusion Criterion Number
Belaise, C, Tomba, E, Offidani, E, Visani, D, Ottolini, F, Bravi, A, et al. (2010). What are the differences between Well-Being Therapy and anxiety management in the school setting? <i>Rivista di Psichiatria</i> , 45(5), 290-301.	2 This article does not include the correct intervention
Pitzer, J, & Skinner, E. (2017). Predictors of changes in students' motivational resilience over the school year. <i>International Journal of Behavioral Development</i> , 41(1), 15-29.	5 Not an experimental design
Rich, B, Shiffrin, N, Cummings, C, Zarger, M, Berghorst, L, & Alvord, M. (2019). Resilience-Based Intervention with Underserved Children: Impact on Self-Regulation in a Randomized Clinical Trial in Schools. <i>International Journal of Group Psychotherapy</i> , 69(1), 30-53.	2 This article does not include the correct intervention
Ros, A, Brewer, S, Raviv, T, & Santiago, C. (2019). How Do Parent Psychopathology and Family Income Impact Treatment Gains in a School-Based Intervention for Trauma? <i>School Mental Health</i> , 11(4), 777-789.	1 Parents included in study
Segrott, J, Rothwell, H, & Thomas, M. (2013). Creating safe places: An exploratory evaluation of a school-based emotional support service. <i>Pastoral Care in Education</i> , 31(3), 211-228.	5 Qualitative design

Appendix B – Coding Protocol

The coding protocol from Gersten et al., (2005) that has been used in this review was amended. The amendments and rationale are presented in Table 1.

Table 1

Amendments to the coding protocol

Heading	Indicator	Modification	Rationale
Describing participants	Was sufficient information provided to determine/confirm whether the participants demonstrated the disability(ies) or difficulties presented?	Was sufficient information provided in the study about the participants' demographics?	The review did not intend to focus on a specific disability or difficulty. Instead the modified question was included to ensure participant demographics were stated.

Weight of Evidence A: Methodological Quality

Example of Coding Protocol

Coding protocol:

Gersten, R., Fuchs, L. S., Compton, D., Coyne, M., Greenwood, C., & Innocenti, M. (2004). Quality indicators for group experimental and quasi-experimental research in special education. *Exceptional Children*, 71, 149-164.

Note. This protocol was adapted so that the questions are relevant to the research question. Question wording will be strikethrough (e.g. ~~example~~) and appropriately re-worded if it is not relevant to the review.

Reference of the study: Langley, A, Gonzalez, A, Sugar, C, Solis, D, & Jaycox, L. (2015). Bounce Back: Effectiveness of an Elementary School-Based Intervention for Multicultural Children Exposed to Traumatic Events. *Journal of Consulting and Clinical Psychology*, 83(5), 853-865.

Essential Quality Indicators

A. Quality indicators for describing participants

~~Was sufficient information provided to determine whether the participants demonstrated the disability(ies) or difficulties presented?~~

Was sufficient information provided in the study about the participants' demographics?

Yes

No

Unknown/Unable to Code

Were appropriate procedures used to increase the likelihood that relevant characteristics of participants in the sample were comparable across conditions?

Yes

No

Unknown/Unable to Code

Was sufficient information given characterizing the interventionists or teachers provided? Did it indicate whether they were comparable across conditions?

Yes

No

Unknown/Unable to Code

B. Quality indicators for implementation of the intervention and description of comparison

conditions

Was the intervention clearly described?

Yes

No

Unknown/Unable to Code

Was the fidelity of implementation described and assessed?

Yes

No

Unknown/Unable to Code

Was the nature of services provided in comparison conditions described?

Yes

No

Unknown/Unable to Code

C. Quality indicators for outcome measures

Were multiple measures used to provide an appropriate balance between measures closely aligned with the intervention and measures of generalised performance?

Yes

No

Unknown/Unable to Code

Were outcomes for capturing the intervention's effect measured at the appropriate times?

Yes

No

Unknown/Unable to Code

D. Quality indicators for data analysis

Were the data analysis techniques appropriately linked to key research questions and hypotheses?
Were they appropriately linked to the unit of analysis in the study?

Yes

No

Unknown/Unable to Code

Did the research report include not only inferential statistics but also effect size calculations?

Yes

No

Unknown/Unable to Code

Desirable Quality Indicators

Was data available on attrition rates among intervention samples? Was severe overall attrition documented? If so, is attrition comparable across samples? Is overall attrition less than 30%?

Yes

No

Unknown/Unable to Code

Did the study provide not only internal consistency reliability but also test-retest reliability and interrater reliability (when appropriate) for outcome measures?

Yes

No

Unknown/Unable to Code

Were data collectors and/or scorers blind to study conditions and equally (un)familiar to examinees across study conditions?

Yes

No

Unknown/Unable to Code

Were outcomes for capturing the intervention's effect measured beyond an immediate post-test?

Yes

No

Unknown/Unable to Code

Was evidence of the criterion-related validity and construct validity of the measures provided?

- Yes
- No
- Unknown/Unable to Code

Did the research team assess not only surface features of fidelity implementation (e.g. number of minutes allocated to the intervention or teacher/interventionist following procedures specified), but also examine quality of implementation?

- Yes
- No
- Unknown/Unable to Code

Was any documentation of the nature of instruction or series provided in comparison conditions?

- Yes
- No
- Unknown/Unable to Code

Did the research report include actual audio or videotape excerpts or examples of paperwork that capture the nature of the intervention?

- Yes
- No
- Unknown/Unable to Code

Were results presented in a clear, coherent fashion?

- Yes
- No
- Unknown/Unable to Code

Overall Rating of Evidence: 3 2 1 0

Weight of Evidence A Criteria – based on Gersten et al. (2005) coding protocol

		Low quality = 1 <i>(study meets less than 9 essential criteria)</i>	Medium quality = 2 <i>(study meets at least 9 essential criteria AND at least 1 and less than 4 desirable criteria)</i>	High quality = 3 <i>(Study meets at least 9 essential criteria AND 4 or more desirable criteria)</i>	Overall rating (1-3)
No. of essential quality indicators met	10/10			X	3
No. of desirable quality indicators met	6/9				

Appendix C – Weight of Evidence Ratings

WoE A: Methodological Quality

Table 1 illustrates the ratings for each study based on adapted version of the Gersten et al. (2005) coding protocol.

Table 1

Summary of WoE A ratings

Studies	Number of Essential Indicators	Number of Desirable Indicators	Overall WoE A
Anthony & McLean,(2015)	7	6	1
Grassetti et al. (2020)	8	4	1
Humphrey & Panayiotou (2020)	9	3	2
Langley et al. (2015)	10	6	3
Santiago et al. (2018)	10	6	3

Note: Overall WoE A (3 = High Quality; 2 = Medium Quality; 1 = Low Quality)

WoE B: Methodological Relevance

WoE B assesses the appropriateness of the type of study in relation to the review question. Petticrew and Roberts (2003) classify Randomised Control Trials (RCT) as the ‘gold standard’ design in measuring the effectiveness of interventions, with

cohort studies and quasi-experimental studies being of lower quality. Based on their recommendations for research best suited to answering these types of questions, WoE B was calculated for each study and outlined in Table 1 below.

Table 1
Weight of Evidence B (WoE B) Criteria

WoE B Rating	Criteria
3 (High)	<ul style="list-style-type: none"> • Control group • Random assignment of participants to treatment or control group • Pre- and post-, and follow up data • Measures used are clearly outlined
2 (Medium)	<ul style="list-style-type: none"> • Control group • Random assignment of participants to treatment or control group • Pre- and post-, no follow up • Measures used are clearly outlined
1 (Low)	<ul style="list-style-type: none"> • Control group • No random assignment • Pre- and post- reported • Measures used are clearly outlined
0 (Very Low)	<ul style="list-style-type: none"> • No control group • No random assignment • Pre- and post- reported • Measures used are clearly outlined

Table 2
WoE B rating for studies

Study	Overall WoE B
Anthony & McLean, (2015)	1 (Low)

Grasseti et al. (2020)	0 (Very Low)
Humphrey & Panayiotou (2020)	2 (Medium)
Langley et al. (2015)	3 (High)
Santiago et al. (2018)	3 (High)

WoE C: Topic Relevance

WoE C is a review-specific judgement about how relevant the focus of study is to the review question. Table 1 illustrates the criteria by which each study was assessed and the WoE C rating.

Table 1

WoE C Criteria and Rationale

Criteria	WoE Rating	Descriptor	Rationale
A. Intervention	3	Bounce Back is the primary intervention	This review is looking at the effectiveness of a specific intervention.
	2	An alternative version of Bounce Back is used	
	1	Bounce Back is combined with another intervention	

B. Setting	3	The intervention was conducted within a school setting during school hours	This review was specifically looking at the effectiveness of the intervention within a school-based setting. Children may be more motivated to engage in the intervention during school hours.
	2	The intervention was conducted within a school setting outside of school hours	
	1	The intervention was conducted in a non-school setting	
C. Outcome measured	3	Outcome measures related to mental health and emotional wellbeing	This review was looking at the impact of the intervention on the mental health and emotional wellbeing of participants.
	2	Outcome measures related to mental health or emotional wellbeing	
	1	No measure of mental health or emotional wellbeing	
D. Post-test	3	Includes post-test data at two time points	To assess whether positive changes remain over time.
	2		

1	Includes post-test data at one time point
	No post-test data

Note: Overall WoE C (3 = High; 2 = Medium; 1 = Low)

Each study was rated against these criteria, these ratings were then totalled and divided by four to provide an overall WoE C rating. This is outlined in Table 2 below.

Table 2
Summary of WoE C Ratings

Study	Criteria A	Criteria B	Criteria C	Criteria D	Overall WoE C
Anthony & McLean, (2015)	3	3	2	3	2.75
Grassetti et al. (2020)	2	3	3	2	2.5
Humphrey & Panayiotou (2020)	3	3	2	2	2.5
Langley et al. (2015)	2	3	3	3	2.75
Santiago et al. (2018)	2	3	3	3	2.75

Note: Low scores = 0-1, Medium scores = 1.1-2.7, High scores = 2.8 and above

Appendix D – Mapping the Field

Author and Location	Participants	Study Design	Intervention	Outcome Variables Measures	Follow-up
Anthony & McLean, (2015) Australia	39 children from 2 primary schools 8-10 years 24 females, 15 males	Quasi-experimental Non-randomised Intervention: n = 17 Control group: n = 22	Bounce Back – focus on resilience 9 1-hour sessions delivered over 9 weeks Sessions chosen by the class teacher following identification of skills deficit in particular areas Circle time, cooperative learning approaches and educational games used to promote social-emotional skills. Sessions related to prosocial values, conflict resolution, building friendships, and developing coping strategies Delivered during the school day	The Resiliency Scales for Children and Adolescents (RSCA) used to assess strengths and areas of vulnerability	Not sufficiently reported for all subscales

Author and Location	Participants	Study Design	Intervention	Outcome Variables Measures	Follow-up
Humphrey & Panayiotou (2020) UK	326 children from 24 primary schools 9-11 years 166 females, 160 males	RCT Intervention: n = 160 Control group: n = 166	Bounce Back – focus on resilience Participants work in groups of up to 15 Over 10 weekly sessions delivered during the school day for up to 1 hour Sessions related to friendships, planning for success, conflict resolution, sleep hygiene and motivation. A weekly planner is used for pupils to set targets and monitor their progress towards meeting their target. Intervention workbooks were provided to guide their learning.	Me and My Feelings (sometimes referred to as Me and My School) used to assess emotional symptoms and behavioural difficulties The Student Resiliency Survey used to assess problem-solving and self-esteem	None

Author and Location	Participants	Study Design	Intervention	Outcome Variables Measures	Follow-up
Grassetti et al. (2020) USA	20 children from 1 primary school 5-11 years 64% males, 36% females	Quasi-experimental Non-randomised One-group pretest-posttest Intervention group: n = 20	Bounce Back – CBT with focus on trauma 10 sessions group sessions – 50-min session once a week Groups of 3-7 students Sessions focused on psychoeducation, identifying emotions and physiological responses, relaxation training, problem-solving, strategies around coping, and cognitive work Up to three individual sessions – developing a trauma narrative 1–3 parent education sessions	UCLA Posttraumatic Stress Disorder Reaction Index (UCLA-RI) used to assess symptoms of PTSD Top Problems/Brief Problems Checklist (TP/BPC) used to identify difficulties of children and assess internalising and externalising problems, as well as distress	None

Author and Location	Participants	Study Design	Intervention	Outcome Variables Measures	Follow-up
			Delivered during school day		
Langley et al. (2015) USA	74 children from 4 primary schools 7-11 years 37 females, 37 males	RCT Intervention: n = 36 Control group: n = 38	Bounce Back – CBT with focus on trauma 10 group sessions Groups included four to six students 2-3 individual sessions lasting 30-50 minutes – developing a trauma narrative Sessions took place weekly; 50-60-minute group sessions Sessions focused on psychoeducation, identifying emotions and physiological responses,	Children’s Depression Inventory (CDI) used to assess symptoms of depression UCLA Posttraumatic Stress Disorder Reaction Index (UCLA-RI) used to assess symptoms of PTSD Screen for Child Anxiety Related Emotional Disorders (SCARED-C) used to assess anxiety Emotion Regulation Checklist (ERC)	3 months post intervention

Author and Location	Participants	Study Design	Intervention	Outcome Variables Measures	Follow-up
			relaxation training, problem-solving, strategies around coping, and cognitive work Run during the school day Parents received weekly handouts outlining the skills their children were learning		

Author and Location	Participants	Study Design	Intervention	Outcome Variables Measures	Follow-up
Santiago et al. (2018) USA	52 children from 8 primary schools 7-10 years 34 males, 18 females	RCT Intervention: n = 25 Control group: n = 27	Bounce Back – CBT with focus on trauma 10 group sessions around psychoeducation, symptoms of trauma and identification of emotions, relaxation techniques, cognitive coping, problem-solving, and social support Groups ranged from three to six students 2 individual sessions – developing a trauma narrative Up to 3 parent education sessions to outline skills their children were learning Delivered during the school day	Children’s Depression Inventory (CDI) used to assess symptoms of depression UCLA Posttraumatic Stress Disorder Reaction Index (UCLA-RI) used to assess symptoms of PTSD Screen for Child Anxiety Related Emotional Disorders (SCARED-C) used to assess anxiety Responses to Stress Questionnaire (RSQ) used to assess coping strategies	3 months post intervention

Appendix E – Effect Size Calculators

Psychometrica^a

A web-based effect size calculator was used to convert effect score sizes for the analysis using the data provided in two of the studies. The calculator can be accessed from: https://www.psychometrica.de/effect_size.html

Campbell Collaboration Calculator^b

A web-based effect-size calculator, provided by the Campbell Collaboration, was used to compute and calculate effect sizes for the analysis using the data provided in one of the studies. The calculator can be accessed from: <https://campbellcollaboration.org/research-resources/effect-size-calculator.html>