University of Southampton

Faculty of Environmental and Life Sciences

School of Psychology

Spotlighting Strengths: An Exploration of Character Strengths Interventions and the Impact for Young People with ADHD

by

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Abstract

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As part of this thesis, a review was conducted to investigate the impact of character strengths interventions (CSIs) on students' well-being and academic outcomes. Whilst a large body of research exists with adults, few studies have focused on school-based CSIs. Through a systematic search, 13 articles were identified. Overall, positive findings emerged for classroom engagement and several measures of well-being, with the exception of negative affect. School-based CSIs appear to be most effective when conducted by teachers over time. Whilst research with specific populations is lacking, there is some evidence that the intervention can improve the well-being of at-risk students. There is mixed evidence as to whether the method of strengths identification is influential. A need for further research is considered important, particularly regarding the use of CSIs with primary-aged pupils and its use in a one-to-one format. Furthermore, it is not yet known whether the specific strengths focused upon impacts the effectiveness of this intervention.

Empirical research was also conducted for this thesis in which the concept of strengths-based practice is applied to ADHD. Research suggests that school staff are more likely to make within-child attributions of behaviour and have lower expectations for children with this diagnosis. The current research aimed to replicate this finding and investigate how perceptions alter when the characteristics of ADHD are presented as strengths, not deficits. In an online survey, 271 members of school staff read a vignette describing a child, with or without an ADHD label present, and whose behaviours were either positively or negatively framed. Staff's attributions for the child's behaviour and their predictions of the child's future life satisfaction were collected. It was found that, when the characteristics of ADHD were negatively framed, staff expressed greater certainty in making both internal and external attributions and believed that the student would have lower life satisfaction as an adult. The label itself had no significant effect.

These findings suggest that the framing of ADHD characteristics, rather than the label, impacts school staff's beliefs.

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Research Thesis: Declaration of Authorship

Print name: Louise Marie Boeckmans

Title of thesis: Spotlighting Strengths: An Exploration of Character Strengths Interventions and the Impact for Young People with ADHD

I declare that this thesis and the work presented in it are my own and has been generated by me as the result of my own original research.

I confirm that:

1. This work was done wholly or mainly while in candidature for a research degree at this University;
2. Where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
3. Where I have consulted the published work of others, this is always clearly attributed;
4. Where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
5. I have acknowledged all main sources of help;
6. Where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
7. None of this work has been published before submission

Signature: .....Date: ……..

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This thesis would not have been possible without you all. Thank you.

Definitions and Abbreviations

AEA	Assess, Explore, Apply
ADHD	Attention-Deficit/Hyperactivity Disorder
ANOVA	Analysis of Variance
BMSLSS	Brief Multidimensional Students' Life Satisfaction Scale
CASP	Critical Appraisal Skills Programme
CHABA	Challenging Behaviour Attributions Scale
CS	Character Strength
CSI	Character Strengths Intervention
DSM 5	Diagnostic and Statistical Manual of Mental Disorders, 5th edition
DV	Dependent Variable
EP	Educational Psychologist
ERIC	Educational Resources Information Center
FLSS	Future Life Satisfaction Scale
GV	Gratitude Visit
IQ	Intelligence Quotient
IV	Independent Variable
MANOVA	Multivariate Analysis of Variance
PPI	Positive Psychology Intervention
PRISMA	Preferred Reporting Items for Systematic Review and Meta-Analyses
SES	Socio-Economic Status
SDT	Self-Determination Theory
SEN	Special Educational Needs
SENCo	Special Educational Needs Coordinator
SLT	Senior Leadership Team
SPSS	Statistical Package for the Social Sciences
SS	Signature Strength

SS^{id}	Identifying Signature Strengths
SS^{new}	Using Signature Strengths in a New Way
TGT	Three Good Things
UK	United Kingdom
US	United States
VIA	Values in Action
VIA-IS	Values in Action - Inventory of Strengths
VIA-YS	Values in Action - Youth Survey
YB	You at Your Best

Chapter 1 Introduction

1.1 Background

Currently, in education, it is standard practice to identify what a student cannot do and take action to address this (Renkly & Bertolini, 2018). This is known as the deficit approach. By focusing upon a child's weaknesses rather than their strengths, students' well-being, self-esteem, motivation and achievement can be negatively affected (Lombardi, 2016; Mather, 2012; Renkly & Bertolini, 2018; Rose, 2006).

An alternative approach taken by some is to apply the principles of positive psychology. Positive psychology is the scientific study of the factors and processes that lead to optimal human functioning and flourishing (Seligman & Csikszentmihalyi, 2000). Seligman and Csikszentmihalyi structure positive psychology around three core areas: building positive experiences, positive traits and positive institutions. When applied in schools, the term 'positive education' is used. Positive education involves "bringing out the best in every student irrespective of hindrances… This means paying purposeful attention to already well-functioning diverse skills, in addition to merely ameliorating problems" (Vuorinen et al., 2019, p. 46). Thus, a key aspect of positive education is supporting young people to identify their individual strengths (Park & Peterson, 2008; Pritchard, 2009; Seligman & Csikszentmihalyi, 2000).

Considering the adverse consequences associated with focusing upon a child's weaknesses, it is necessary that research examines whether moving towards a strengths-based approach can improve outcomes for young people, particularly those who are most subjected to negative perceptions from others. To address this problem, this thesis presents two papers which are both underpinned by positive psychology and focus upon the potential benefits of moving to a strengths-based approach in education.

1.2 Systematic Literature Review

1.2.1 Rationale

The first paper, presented in Chapter 2, is a systematic literature review on the efficacy of character strengths interventions (CSIs) on young people's well-being and academic outcomes. CSIs focus upon identifying and building upon young people's strengths and assets and, therefore, relate closely to one of the objectives of positive psychology, building positive traits. This review was conducted as few interventions exist which support children to develop their strengths and,

to the author's knowledge, no review of studies evaluating the efficacy of CSIs has been conducted.

1.2.2 Method

A protocol was developed prior to conducting the systematic search. The details of this are presented within Chapter 2 and the appendices to ensure that the search is transparent and replicable.

The inclusion/exclusion criteria within the protocol stated that the papers included in this review could be qualitative or quantitative, as well as published or non-published. This decision was made for several reasons. Firstly, as few studies have been conducted on CSIs, the inclusion of all these types of papers was necessary in order to provide a more thorough examination of the intervention's evidence base. Secondly, utilising non-published research reduced the impact of publication bias and, finally, such an approach aligns with the post-positivist epistemological stance taken in this paper (see section 1.4).

1.2.3 Contributions

The focus for this literature review was agreed upon by the supervisory team. I developed the review protocol, which was appraised by my supervisors. The systematic search and data extraction was performed by me. Supervisors were consulted when uncertainties arose regarding whether a paper met the required criteria. I wrote the paper, with feedback and advice for improvements provided by the supervisory team on a draft version.

1.2.4 Implications for Educational Psychologists (EPs)

In his book, Niemiec (2018) argues that the character strengths (CS) approach can be easily integrated into any practitioner's work. It is claimed that the approach is "applicable to any setting and any population because all human beings have these strengths, and therefore there is always potential for working in a character strengths-based approach" (p. 64). Furthermore, Niemiec adds that CSs can be incorporated into any practitioner's psychological orientation. Psychodynamic, humanistic, cognitive-behavioural and solution-focused approaches are just a few of the examples given.

Within the realm of educational psychology, practitioners can help others to identify and develop their CSs. This may be achieved through consultations or supervision. Regarding CSIs more specifically, not only are EPs able to deliver these interventions, using their knowledge to

tailor the programme to the young person, but practitioners are also able to support schools to implement CSI approaches at both individual and systemic levels.

The Assess, Explore and Apply (AEA) model (Niemiec, 2018), which is the process used within a CSI, can also be applied to casework. The AEA model begins with increasing self-awareness of one's strengths. This is the Assess stage. Following this, at Exploration, individuals develop a deeper understanding of these strengths and reflect upon how these strengths have guided both past and present actions. Lastly, is Application. This involves planning how an individual's CSs can be employed to achieve future goals and putting this into action. Through their individual work with young people, as well as the indirect work they carry out with the key adults in their lives, EPs are positioned to identify and explore a young person's CSs and develop recommendations on how these could be used further. Niemiec (2018) states that the assessment and intervention of CSs are important, in addition to highlighting areas of need, in order to develop a balanced perspective. Thus, it appears clear that CSIs, and the concept of CSs more widely, could be easily integrated into the work of EPs.

1.3 Empirical Research

1.3.1 Understanding and Conceptualising ADHD

In Chapter 3, I focus on applying the strengths-based approach to attention-deficit/hyperactivity disorder (ADHD). ADHD is defined by the Diagnostic and Statistical Manual of Mental Disorders 5th edition (DSM 5; American Psychiatric Association, 2013) as a disorder which is characterised by persistent inattention and/or hyperactivity-impulsivity that interferes with an individual's functioning and is present from childhood. Whilst this definition exists, there is much debate on how ADHD should be conceptualised. The predominate conceptualisation could be said to align with what is broadly referred to as the medical model. This viewpoint asserts that "abnormal behaviours are the results of somatic, biological, genetic or physical problems and can be treated in a medical way" (Aktan & Yarar, 2014, p. 71). Regarding ADHD, supporters of the medical model highlight that there appears to be genetic heritability of the disorder (Faraone & Larsson, 2019) and studies have found differences in the brain structure of individuals with this diagnosis (Bayard et al., 2020). It is proposed by some that these differences lead to an impairment in executive functioning skills such as impulse control and focused attention. This is known as the executive dysfunction theory of ADHD (Artigas-Pallarés, 2009; Johnson et al., 2009).

Critics of this medical approach claim it is reductionist and does not consider factors such as the environment (Aktan & Yarar, 2014). Additionally, it is argued that the approach perpetuates a view of ADHD as an 'illness' or 'disorder' and that, if differences in brain structure do exist, these

should be framed as resulting from natural variation or 'neurodiversity' (Armstrong, 2010). The neurodiversity approach, then, suggests that any differences in behaviour or brain structure lie on a spectrum, and hence they should not be considered pathological (Casanova & Widman, 2021). This aligns with the social model of disability which states that individuals with ADHD do not have an impairment but are disabled by systemic barriers and societal attitudes held by others (Ankori & Gutman, 2020; Casanova & Widman, 2021).

The current research aligns with the social model of ADHD and the neurodiversity approach. Whilst there may be a group of individuals who show the criteria described in DSM 5, such characteristics are not necessarily pathological and might be part of the normal distribution of behaviour: they may only be deemed to be deficits because they do not fit in with the expected norms in education.

1.3.2 Rationale

Focusing upon young people with ADHD was deemed to be important because such individuals are especially at risk of experiencing adverse outcomes whilst in education and further into their later life when compared to their peers. Fleming et al. (2017) found that, when compared to their peers, children with ADHD have higher rates of unauthorised absence, are more likely to be excluded from school, achieve lower academic attainment scores, are more likely to leave school before the age of 16 and have higher rates of unemployment in adulthood. Thus, it is clear that more needs to be done to support these individuals from an early age.

Currently, provision for individuals with ADHD "focuses mainly on the short-term relief of core symptoms, mainly during the school day" (Harpin, 2005, p. 5). I assert that a new approach is needed which supports a child across all aspects of life, builds their self-worth and is not a short-term 'fix' for a child's difficulties. This research investigates one possible avenue for change: reframing the characteristics of ADHD. Whilst a range of research has examined possible negative impacts of the ADHD label and ways of 'treating' ADHD, few studies have investigated the impact of taking a strengths-based perspective.

1.3.3 Method

An experimental approach was employed to see if, when presented with the characteristics of ADHD through the lens of strengths, measurable change in school staff's perceptions towards a young person might occur. Change was measured on two outcomes: school staff's expectations of a young person's future and the attributions staff make to a child's behaviour. As detailed in the paper, staff's expectations were measured because adults' beliefs can be highly influential and,

when negative, may lead to a detrimental self-fulfilling prophecy (Batzle et al., 2010; Murphy & LeVert, 1995). With respect to behavioural attributions, staff perceptions on why young people behave the way they do are likely to influence how they respond to them (Lauchlan & Boyle, 2007; Mehan, 2014).

Within this research, a decision was made to investigate the views of school staff in a variety of roles. Members of schools' senior leadership teams (SLT) were recruited since they are in a position of power to make change at a systemic level. It has been stated that, for change to occur, education leaders must aim to make an inclusive environment, taking into account diversity rather than expecting integration (Wharton et al., 2020). Classroom teachers also play an important role as they are able to differentiate their teaching to adjust for the characteristics, both needs and strengths, of students in their class (Wharton et al., 2020). Finally, classroom support staff, such as teaching assistants, are often those who work closest with young people with ADHD, providing 1:1 support and targeted interventions. Despite this, the views of these individuals are rarely collected within prior studies (Greenway & Rees Edwards, 2020). In this research, it is acknowledged that all these members of staff influence the educational experience of children with ADHD.

In an effort to ensure a sufficient sample size was met, members of school staff were told that, as part of the research, they had the opportunity to enter a prize draw to win one of five £20 vouchers. In addition to sharing the research on social media, initial requests for participation were sent to headteachers asking whether they would forward the research details to their school staff. There was no requirement for headteachers to respond to this email themselves, therefore it is not known how many members of staff received this invitation nor, accordingly, what the overall response rate was of participants.

1.3.4 Ethics

The design of the study did not raise any ethical concerns and no harm to participants was expected. It is possible, however, that participants may have felt some slight discomfort when completing the study. Whilst the research was not designed with the intention to cause discomfort, staff may have experienced a period where they questioned some of the beliefs or biases they possess. This would not, however, have been at a level expected to cause distress, and it could be argued that such reflection on one's own actions is important to improve practice (Baricaua Gutierez, 2015). Even though no distress was expected, steps were taken to support participants after completing the study. This included: debriefing participants on the aims of the

study, providing the researchers' email addresses and sharing the contact details of the University of Southampton research integrity and governance manager.

A second ethical issue of note is that the research team had prior relationships with some of the schools invited to take part in the study. This may have led staff to feel pressure to respond in a certain way in fear of being negatively judged by other professionals or feedback of their views being shared with school management, impacting on their working life. This issue was, however, mitigated by informing the participants that their responses would be anonymous. This was communicated to participants via the participant information sheet, before completing the study. Details of the participant information sheet, consent form and debrief form are in Appendices A, B and C.

1.3.5 Terminology

The anti-deficit viewpoint employed within this research has influenced the terminology used within the write-up of this paper. I have actively chosen not to describe children with ADHD as having a 'disorder', 'condition', 'deficiency' or 'problem' but rather as showing a 'positive difference' or possessing a label of ADHD.

1.3.6 Contributions

The aims, design and materials for the study were developed collaboratively with the research team. Recruitment and data analysis were both primarily performed by me, however, guidance was provided by supervisors. The paper was written by me with supervisors providing guidance and feedback for improvement.

1.4 Epistemology and Ontology

To understand the rationale behind the decisions and actions taken in these papers, it is important to consider the epistemological and ontological stance employed. Epistemology refers to the nature of knowledge whilst ontology is concerned with the nature of reality. There are a range of epistemological approaches which underpin research, one of which is positivism. Positivism aligns with a naïve realist ontology as it asserts that there is one true reality that can be identified and measured through research. It is believed, therefore, that knowledge is gained through empirical and objective measurement. A quantitative approach tends to be taken by those employing this stance. Social constructivism assumes a relativist ontology that there is not one true reality, as reality is constructed by each individual based upon their own experiences and perceptions. Here, knowledge is embedded in culture and values; it is developed and

reconstructed through our experiences and interactions with the external world. Thus, it is claimed that objectivity is not possible. Social constructivism often takes a qualitative methodology as researchers seek to uncover individuals' perceived realities and values, as well as how these are created.

Bridging these positions is post-positivism. Post-positivism takes a critical realist ontological approach. Whilst it is accepted that a reality exists, it is believed that it cannot be objectively measured as research is fallible and subject to human influence. From this perspective, knowledge of the true reality is not possible as objectivity cannot be achieved. Efforts are made to minimise bias and researchers aim to falsify rather than verify hypotheses (Lincoln et al., 2005; Ponterotto, 2005).

In this thesis, a post-positivist, critical realist approach was employed. Under this epistemological approach, it is recognised that true objectivity is impossible, thus triangulation is important to account for the various sources of error and move towards a closer understanding of reality. Accordingly, within the systematic literature review, an analysis of both qualitative and quantitative research was conducted. Additionally, it is recognised that the process of conducting the literature review may be subject to bias. Issues relating to researcher bias are detailed within section 1.5.

Within the empirical paper, the same epistemological and ontological approaches apply. A quantitative approach was taken in order to reduce bias and increase objectivity. Social desirability bias may still be present as participants may have been conscious not to seem prejudiced in their views. However, it is reported that compared to interviews and focus groups, the use of the experimental vignette method is less likely to be influenced by social bias (Alexander & Becker, 1978). A further source of bias relates to participant recruitment. Staff participating in the study may have not been an accurate representation of the general school staff population. As participants were told that the study aims to investigate how staff interpret behaviour and how such behaviour alters their expectations, participants who were more confident in their behaviour management knowledge and skills could have been more likely to participate, thus affecting the accuracy of the results as they relate to the whole-school staff population. Lastly, this philosophical approach is also evident by the way ADHD is viewed within the research. I do not deny the existence of a group of individuals who show the characteristics of ADHD, hence this reality exists, but the view that such people have a 'disorder', I believe to be socially constructed.

1.5 Reflexivity

Reflecting on how my own beliefs may have influenced the literature review, I acknowledge that, although a protocol with stringent criteria was used for the systematic search, it is evident that there is some degree of personal judgement when applying these criteria. Attempts were made to reduce this source of bias through discussion with the supervisory team.

Another important point for reflection regards how the papers were analysed. In this review, findings were discussed with a focus on four areas: the population, format, facilitator and method of strengths identification. It must be considered that another researcher may have conducted a review with an emphasis on different key areas. Hence, my own values may have influenced the way in which the literature was analysed and reported.

Within the empirical paper, it is recognised that my own views, and that of the research team, may have influenced the development of the vignettes. Attempts were made to reduce this bias by developing the negatively framed vignette based upon the criteria used to diagnose ADHD, having the vignettes validated by an applied psychologist and creating the positively framed vignette through transforming the deficit language. Despite this, it is possible that our experiences of working with children with ADHD and our beliefs regarding viewing ADHD from a strengths-based perspective may have unconsciously affected the wording or content of the vignettes.

1.6 Key Messages

These two papers focus on the need for education to move away from a highly deficit-focused perspective to one that also focuses on strength. It is my hope that the work presented throughout this thesis will highlight the value of diversity and prompt professionals to consider to what extent a strengths-based approach is present in their perceptions and actions. In addition to prompting reflection, it is my aim that the papers lead to positive change by demonstrating how strengths may be promoted at an individual, group, class and whole-school level.

Chapter 2 How do character strengths interventions impact the well-being and academic outcomes of children and young people?

2.1 Introduction

2.1.1 Character Strengths (CSs)

Character strengths (CSs) are "the positive parts of your personality that impact how you think, feel and behave" (VIA Institute on Character, 2020, para. 1). In 2004, Peterson and Seligman conducted a review of literature from philosophy, virtue ethics, moral education, theology and psychology to identify CSs found universally (Niemiec, 2018). This led to the 'VIA classification of character strengths and virtues', a set of 24 CSs (Peterson & Seligman, 2004). Each strength correlates with various positive outcomes. For example, the strength of perseverance is often linked to goal completion, whilst honesty is linked to positive mood. It is claimed that all these strengths are present in an individual to varying degrees and are fluid (Niemiec, 2018; Peterson & Seligman, 2004).

In addition to this classification, two measurement tools were developed to help individuals gain an understanding of their CSs: the VIA Inventory of Strengths (VIA-IS), designed for adults, and the VIA Youth Survey (VIA-YS), designed for young people between 10 and 17 years old. On completion of these surveys, individuals are presented with an ordered list of the 24 CSs starting with their signature strengths (SSs; their top five strengths) and progressing to their lesser strengths.

Seligman (2011) asserts that knowledge of one's strengths is highly beneficial, stating "deploying your highest strengths leads to more positive emotion, to more meaning, to more accomplishment and to better relationships" (p. 24). Accordingly, character strengths interventions (CSIs) have been developed to support individuals to identify and develop their strengths.

2.1.2 Character Strengths Interventions (CSIs)

Whilst there is no manual or definition of what constitutes a CSI, Niemiec (2018) suggests that such interventions use the 'Aware, Explore and Apply' (AEA) model. Following this model, individuals must first gain an awareness of their strengths. This often involves the use of

assessments such as the VIA-IS/VIA-YS. In the Exploration stage, individuals are guided to reflect upon their past and possible future use of their strengths. In the Application stage, individuals set goals and take actions towards these, often by utilising a SS in a new way.

2.1.3 Evidence for CSIs

2.1.3.1 Well-being

Research on the efficacy of CSIs with young people is limited, however a range of studies have been conducted with adults. One such study was conducted by Seligman et al. in 2005. In this study, 557 adults were randomly assigned to one of five positive psychology interventions (PPIs) or a placebo group. The tasks each experimental group undertook were as follows:

1. Gratitude visit (GV; writing and delivering a letter of gratitude)
2. Three good things (TGT; writing three things that went well and why, every evening)
3. You at your best (YB; writing about a time they were at their best, reflecting upon their strengths displayed in this situation and revisiting this every day)
4. Using signature strengths in a new way (SS^{new}; a CSI where individuals took the VIA-IS, reviewed their SSs and used a SS in a different way, each day)
5. Identifying strengths (SS^{id}; completing the VIA-IS, reflecting upon SSs and using them more)

Individuals completed measures of happiness and depression pre and post the one-week intervention. Follow-up measures were also collected. Whilst all groups, including the placebo group, showed increased happiness and reduced depression scores after one week, the long-term effects of the interventions differed. From one month and beyond, the participants in placebo, YB and SS^{id} groups scored no different from baseline. This was also seen from the three-month onward period for the GV intervention. Only individuals conducting the TGT and SS^{new} interventions remained happier and less depressed at three and six months. This indicates, not only can CSIs have immediate and lasting benefits on happiness and depression, but underscores that actively reflecting on, and planning how to use SSs is key.

Another interesting finding to emerge from Seligman et al.'s (2005) study was that those who showed the greatest positive outcomes at follow-up were those who decided independently to continue the intervention. This suggests that CSIs can be intrinsically rewarding and that the positive effects on well-being are greater the longer the CSI is conducted. Similar findings were reported in a three-and-a-half-year longitudinal study by Proyer et al. (2015), in which four factors were found to alter the impact of PPIs on happiness and/or depression scores: continued practice,

effort, preference (liking and perceived benefit of the intervention) and early reactivity (immediate response to the intervention).

Evidence of the positive effects of CSIs on well-being has been replicated across multiple contexts, including business and healthcare (Allan & Duffy, 2014; Niemiec, 2018), and across a range of countries (Duan et al., 2014; Gander et al., 2013; Linley et al., 2010; Mongrain & Anselmo-Matthews, 2012; Proyer et al., 2015).

2.1.3.2 Academic Outcomes

Compared to studies on well-being, relatively little research has investigated the impact of CSIs on academic outcomes. One study which did look at this was conducted by Pritchard (2009) with undergraduates in the UK. Participants completed the StrengthsFinder tool (a tool similar to the VIA-IS), which identified their SSs. Following this, students took part in training sessions including 'playing to our strengths' and 'taking strengths into the future'. Although no quantitative data was collected, comments from students indicated that the intervention improved their academic self-efficacy. Additionally, and similar to the results of Proyer et al. (2015), important factors appeared to be initial investment in the programme, long-term engagement and the speed and intensity with which students identified with their strengths.

Williamson's 2002 study, which collected quantitative data, also reported positive outcomes of CSIs on education. In this study, US college students completed the StrengthsFinder assessment tool, received feedback and discussed their results. Each participant also took part in a coaching session focused on how to apply their strengths. A control group completed the StrengthsFinder tool but did not receive results or coaching. Compared to controls, the intervention group had significantly improved grade point average scores and spent a greater amount of time in class following the programme. Thus, in addition to academic self-efficacy, grades and attendance appear to be positively impacted by CSIs.

2.1.4 Theory

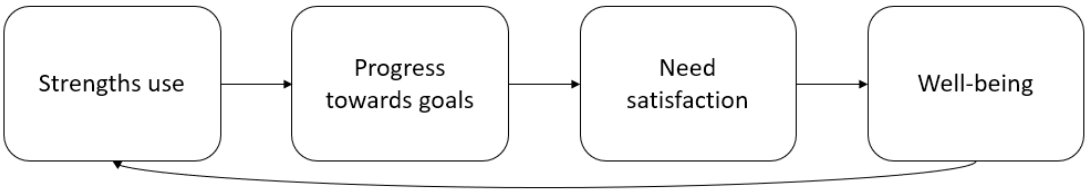
The positive effects of CSIs found in these studies may be understood through self-determination theory (SDT). SDT, developed by Ryan and Deci (2000), proposes that there are three innate and universal psychological needs: autonomy, competency and relatedness. Autonomy refers to the need to feel in control of one's behaviours and goals, competency relates to feeling able to conquer challenges and experience mastery, whilst relatedness concerns the need to feel connected to others (Deci & Ryan, 2008; Gaggioli et al., 2017; Ryan & Deci, 2000). According to SDT, humans are driven to meet these needs and, when they are satisfied, well-

being is enhanced. When considering the connection with well-being that both models have, it is possible to see links between SDT and CSIs. By empowering individuals to achieve their goals through using their strengths, they experience feelings of control over their actions (autonomy), have confidence in their abilities (competency) and feel acceptance from others (relatedness).

This hypothesis is supported by Linley et al. (2010). In this study, undergraduates completed the VIA-IS, received feedback and wrote down three goals for the next semester. The researchers found that, when students used their SSs, they were more likely to progress with their goals, which in turn led to higher scores on measures of autonomy, competence and relatedness. Consequently, well-being was enhanced. It was also found that the increase in well-being acted as a cognitive and affective reinforcer, resulting in more effort being invested in goal achievement. This process is demonstrated in Figure 1.

Figure 1

Illustration Demonstrating the Pathway Between Strengths Use and Well-Being



2.1.5 Current Review

From examining evidence and theory, it appears that CSIs can have a range of positive outcomes for adult populations. However, research into such interventions in schools is limited and no reviews have yet been conducted. This paper will address this gap in the literature by addressing the following research question: How effective are school-based character strength interventions in improving the well-being and academic outcomes for children and young people under the age of 18? Furthermore, by exploring the components of these programmes, the review will also examine: How can CSIs be best implemented in schools to support positive outcomes?

2.2 Method

2.2.1 Search Strategy and Study Selection

This systematic review utilised four online databases. PsychInfo, the Educational Resources Information Center (ERIC) and Web of Science were selected to retrieve published research, and

Proquest Dissertations and Theses was selected to obtain unpublished studies. Further references were collated from the book *'Character Strengths Interventions: A Field Guide for Practitioners'* (Niemiec, 2018), which was identified as currently the only guide for practitioners on how to implement CSIs.

The search terms and inclusion criteria were kept broad as initial scoping searches revealed that research in this area is limited. The literature search was conducted in July 2020 and returned 557 records. This was reduced to 520 when duplicates were removed. All titles and abstracts were then screened according to the inclusion/exclusion criteria. The remaining 28 articles were read in full, and the criteria applied again, resulting in a further 15 articles being excluded. This led to a final collection of 13 papers.

Further details of the search strategy (including search terms and inclusion/exclusion criteria) and details of excluded studies can be found in Appendices D and E.

2.2.2 Data Extraction

A summary of the 13 studies included in this review is reported in Appendix F. In this table, a number has been allocated to each paper which will be used when referring to the studies.

2.2.3 Quality Assurance

Quality assurance of the final papers was conducted to provide an objective assessment of the studies' rigour. Two quality assessment frameworks were selected for this process.

The Critical Appraisal Skills Programme qualitative checklist (CASP; Critical Appraisal Skills Programme, 2018), presented in Appendix G, was used to evaluate qualitative research as it is one of the most commonly selected appraisal frameworks used for qualitative research (Dalton et al., 2017).

Downs and Black's (1998) checklist was used for quantitative research. According to the developers, it has high internal consistency, test-retest reliability and inter-rater reliability. Since the framework is designed for health research, adaptations were made to ensure that it was appropriate for this review. The details of these adaptions and the final version of the checklist are presented in Appendix H.

Descriptors were developed for both checklists. These descriptors and the studies' quality assurance scores can be seen in Appendices I, J and K. Across the studies, external validity was an area of weakness. Ten out of eleven studies scored poor or fair within this category. Additionally,

only one study reported sufficient power. However, across both internal validity subscales, ten out of eleven scored good or excellent. The quality of the qualitative studies ranged from fair to excellent.

2.3 Results

2.3.1 Study Characteristics

2.3.1.1 Sample

Seven studies in the review (1, 2, 3, 4, 8, 11, 12) were conducted in the US. The remaining were conducted in India (5), Japan (6), Australia (7), the UK (9), New Zealand (10) and Finland (13). All were published between 2005 and 2020.

In the experimental studies, participants' ages ranged from 8 to 18 years old. Most studies recruited from secondary schools (or the country's equivalent), except for study 10, which recruited from both primary and secondary schools (8-12 years) and study 13, which recruited from a Finnish elementary school (9-13 years). Study 7 was a whole-school case study where pupils' ages spanned from 5 to 18.

Collectively, the experimental studies had a sample size of 2,027. Of these, 1,110 students participated in a strengths-based intervention. The combined experimental sample demonstrated a roughly equal distribution in terms of gender (53% male, 47% female). These statistics do not include study 11 since such details were not reported. The school presented within the case study had approximately 1,500 students.

Participants in the studies came from a range of socio-economic backgrounds and ethnic groups. Further details on these factors are presented in the data extraction table (Appendix F).

2.3.1.2 Study Design

The majority of studies utilised randomised-control designs (1, 2, 3, 5, 6, 11, 13). The remaining used quasi-experimental methods (8, 9, 10), a single-subject design (4, 12) or case study (7). Eight studies gathered solely quantitative data (1, 2, 5, 6, 8, 9, 10, 11), one qualitative (7) and four collected both (3, 4, 12, 13).

2.3.1.3 Outcomes

All studies measured a form of academic outcome and/or well-being. Details of the specific measures used are outlined in the data extraction table (Appendix F).

2.3.2 Analysis of Findings

2.3.2.1 Overall Findings

Table 1 shows the subcategories of well-being and academic outcomes explored across the studies and highlights where significant changes were found.

Table 1

Summary of Findings

Area of outcome	Results		
	Positive change	No change	Negative change
Well-being			
Subjective well-being	2 (1, 5, 7)	2 (5, 8*)	
Affect/happiness	4 (1, 5, 9, 10)	7 (1, 5, 8, 9, 10, 11, 13)	
Life satisfaction	2 (1, 9)	3 (2, 5, 10)	
Knowledge of own strengths	4 (3, 4, 6, 12)		
Academic outcome			
Engagement	4 (10, 11, 12, 13)	3 (1, 8, 13)	
Perseverance/effort	1 (3)	1 (13)	
Grades	1 (11)	2 (1, 4)	1 (1, 4)
Attendance	1 (3)	1 (4)	

Note. Study numbers are shown in brackets and some studies appear across multiple columns due to multiple measures of the same construct. * indicates that, although a positive change was found in this study, this change was not sustained over time.

The following sections will examine the effectiveness of the interventions when considering the population, format, facilitator and method of strengths identification.

2.3.2.2 CSIs with At-Risk Students

Four studies specifically focused upon the impact of CSIs for at-risk students. Two of these studies (3, 12) focused on children who were under-performing academically. The further two

studies (1, 4) included this criterion but also specified that the students had free/reduced-cost lunch. The students within study 4 had also experienced major life stressors.

The impact of CSIs on well-being was measured quantitatively by study 1. In this study, students attended a programme where they completed the VIA-YS, discussed their strengths, and planned how to use their strengths to achieve their goals. Other aspects of this programme included gratitude journaling and careers planning. When compared to a waitlist control, the intervention led to a large positive effect in life satisfaction (d = 0.97) and a small improvement in negative affect (d = 0.39). Whilst the intervention led to no significant changes in positive affect, there was a large positive change in subjective well-being (d = 1.27).

It could be argued that the positive outcomes reported by this study might be due to the other aspects of the intervention (e.g. gratitude journaling) however the role of CSs in improving at-risk students' well-being is further supported by the qualitative research. Study 3 found that, before the CSI, at-risk students associated strengths with performance in activities (e.g. skills in football) but, one month after the intervention, students talked about their inner strengths (e.g. leadership). The author stated that they had "begun to take ownership of the strengths" (p. 81). Additionally, studies 4 and 12 both reported that the use of CSIs with this population led students to feel known and understood. Thus, qualitative research suggests that the well-being of at-risk students is increased through positively impacting their perceptions of how others view them and how they view themselves.

In contrast to the positive effects seen on well-being, the impact of CSIs with at-risk students on academic outcomes is mixed. In study 12, class teachers believed the intervention led the students to be more engaged in class. Conversely, study 1 found the intervention led to no changes in engagement and did not significantly change grades in science or social studies. In fact, there was a small negative effect on maths (d = -0.15) and English grades (d = -0.03). This concurs with the results of study 4, in which five out of seven participants showed no improvement or a decrease in grades following the CSI, and also no meaningful change in attendance. Thus, the research suggests that CSIs may not improve short-term academic outcomes for at-risk pupils.

2.3.2.3 CSI Format

There were four types of CSI used within research focusing on the general school population. Whilst they all utilised the AEA model, they did so in different ways. In studies 2, 5 and 6, students took part in one/two CS sessions and the Application stage was conducted across one week. Four studies (9, 10, 11, 13) conducted extended CS programmes. In these programmes, input on CSs occurred across multiple sessions whereby, in addition to assessing and applying

their SSs, students learned about and built up other strengths. In one study (8), a CS programme containing multiple lessons was implemented, not over an extended period of time, but within a week. The final format used was employed by study 7. In this research, the CSI approach was implemented systemically throughout a whole school.

The three studies in which students did not receive teaching about additional strengths (2, 5, 6) had very similar methodologies. Students completed the VIA-YS, were given feedback and had time for discussion. Afterwards, students were instructed to use one of their SSs in a new way, every day, for the week. No measures of academic outcome were collected within these studies. In terms of measures of well-being, study 5 compared a range of PPIs over a week (replicating Seligman et al., 2005) and the results indicated that the CSI improved happiness scores significantly more than the YB intervention and led to greater increases in psychological well-being and mental health scores as compared to TGT. However, there were no significant differences between the CSI and the remaining PPIs or placebo group for subjective well-being, positive affect and life satisfaction. These results concur with the findings of study 2, where the intervention group did not differ from the waitlist control group on life satisfaction. The lack of positive progress seen in these studies can be partly explained by the final study (6). Whilst it was found that the intervention did make students more aware of their strengths at the end of the week, three months later 47% of students reported that they found it a little or quite difficult to implement the intervention and, hence, only 12% of students reported that they continued to use CSs in their daily lives. Thus, it appears that assessment and use of strengths over one week might not be enough to positively impact well-being. This may be because students were not provided with ongoing support and prompting to use their SSs.

With regards to extended CS programmes, all provided input upon additional, lesser strengths, in addition to encouraging the application of SSs. Studies 9, 10 and 11 all found that their extended CS programme did not alter negative affect. In terms of positive affect, however, studies 9 and 10 found positive, medium effects (r_{effect} = 0.45 and d = 0.48, respectively), although this was at the 10% level of significance (p = .08) within study 9. Contrastingly, study 13 did not find any significant differences in this outcome area. One further difference found between the studies is in relation to life satisfaction. Whilst study 9 found that the programme led to a large positive effect on life satisfaction (r_{effect} = 0.51), no significant differences were found within study 10. This might be because post-intervention data from study 10 was collected three months after the intervention ceased suggesting that the impact of extended CS programmes on life satisfaction may not be sustained over time.

In terms of academic outcomes, three studies measured classroom engagement (10, 11, 13) and all found that the extended CS programme led to improvements when compared to controls. However, within study 13, this effect was only present for students with special educational needs (SEN). Overall, these results suggest that extended CS programmes do not alter negative affect but might lead to some improvements on positive affect and classroom engagement.

Reflecting upon these two formats, the research indicates that the use of an extended CS programme is more effective than one/two CS sessions and application over one week. This might be due to the extra lessons or it could be because the intervention is conducted over time. One study which can help resolve this query is study 8. Study 8 implemented a five-day programme, with one CS lesson each day. Whilst well-being scores increased from pre-intervention to post-intervention, there were no significant differences from baseline when measured three months after the intervention. Furthermore, across all time points, the intervention did not impact students' engagement or happiness. Therefore, this would suggest that the positive impact of extended CS programmes may be due to continued teaching on CSs over a prolonged period.

The final format, presented in study 7, relates to the use of the CSI approach at a whole-school level. Regarding the Assessment stage, in addition to completing the VIA-YS, students were encouraged to reflect upon their strengths and ask others for their perspectives. Exploration of strengths was implemented throughout the curriculum and it was reported that "substantial time is devoted to helping students to cultivate a deeper understanding of all the character strengths" (p. 83). In the Application stage, students were guided on how to intentionally use CSs and apply them to new situations. Reflecting upon this approach, staff commented positively on its impact on well-being. For example, it was stated that "encouraging students, staff, and members of the school community to identify, explore, use, and develop their character strengths is a powerful strategy for supporting them to thrive and flourish" (p. 96). Furthermore, it was said that such beneficial impacts were especially significant for students who experienced difficulties with their behaviour, learning or emotions. Staff claimed that these students often hear about their challenges and hence a focus on what is going well can be greatly beneficial for their self-worth. Less is reported on the impact of the approach on academic outcomes however it is stated that students within the school brainstormed ways in which CSs can be used to overcome challenges such as procrastination. Thus, whilst it is not known whether measures of well-being and academic outcomes improve quantitatively, there is some suggestion that the implementation of a CSI approach at a systemic level may be beneficial.

2.3.2.4 Facilitator of Extended CS Programme

When considering the impact of extended CS programmes, and why there are contradictory findings, it is important to consider the impact of the facilitator. In the majority of these studies, the researcher conducted the intervention (3, 10) or was highly involved in its implementation (13). In only one study (9) was the CSI delivered by teachers without the continued support of the researcher. Study 11 did not state who facilitated the intervention.

When the intervention was implemented by the researcher, some positive outcomes were found. In study 10, post-measures were completed three months after the programme ended and, although there was no change in negative affect or life satisfaction, the intervention did positively impact engagement and positive affect. Similarly, positive results on effort, attendance, homework completion and knowledge of strengths were found in study 3. Despite this, in both these studies, the effects were small. This was acknowledged by the researcher in study 3 who hypothesised that the intervention might have been more successful if implemented by teachers because the facilitator did not have a relationship with the students, behaviour was sometimes disruptive and, as the teachers were doing their own work when the intervention was conducted, students might have believed that staff did not care about the strengths instruction. Thus, whilst some positive effects are present, qualitative observations indicate that CSIs may be more successful when the teacher has a prominent role in delivering the intervention.

The importance of teachers' contributions to CSIs was acknowledged within study 13. Although teachers implemented the intervention, they had an interest in positive education and received training, ongoing coaching and weekly consultations with the researcher. Whilst most teachers spoke highly of the intervention, the quantitative findings did not support this claim as there was no overall significant impact on students' level of effort, happiness or engagement. Due to the substantial support by the researcher, which does not reflect usual practice, these results cannot provide accurate information regarding the impact of teacher facilitators and should not be generalised.

The only study which did not score poor or fair for external validity is study 9. In this study, teachers received no training but were provided with student work booklets and a teacher handout. These materials were designed to be flexible so that teachers could adapt the programme to suit the needs of their class. When controlling for demographics, there was no significant impact of the intervention on negative affect. However, there was a large positive effect on life satisfaction ($r_{effect} = 0.51$) and a medium to large impact on positive affect which approached significance ($r_{effect} = 0.45$, $p = .08$). The researchers believe significance for all outcome measures would have been met if the degrees of freedom were based upon the number of

participants rather than the number of classrooms. No measure of academic outcomes was included however this study does support the idea that, when implemented in the classroom under more typical circumstances, CSIs may have more positive effects on well-being than programmes implemented by researchers.

Whilst this study highlights the potential benefits of teachers as facilitators, it does not explore the reasons behind this. It may be because teachers take ownership of the intervention, they are known to the students or, despite the possible issues regarding fidelity, the fact that the programme could be adapted. Further possible explanations are highlighted in study 7, in which CSs were implemented at a whole-school level. By using this approach systemically, it was claimed that a common language of strengths was developed throughout the school and, through the use of strength spotting, nurturing relationships were built between students and their teachers. Therefore, although CSIs may not be implemented as strictly, having class teachers as facilitators appears to have a range of other benefits.

2.3.2.5 Method of Identifying CSs

A variety of methods were used for students to recognise their strengths. The most popular method to do this was to administer the VIA-YS, with 10 studies using this tool. One study (3) used the StrengthsFinder assessment tool and, in the remaining two (9, 10), students picked out their strengths from a list. These two studies were extended CS programmes and, therefore, to compare which method of strengths identification is most effective, the results of these studies will be compared to VIA-YS studies also conducting a similar programme (11, 13).

When comparing these two types of strengths identification, the self-identification studies appear to show slightly greater benefits on students' levels of positive affect which are significant or approaching significance. Within the studies using the VIA-YS, study 13 found no impact of their CSI on happiness and study 11 found that the programme did not improve self-reported depression and anxiety. Whilst this may indicate that self-identification may improve outcomes more than a CS assessment, there is not enough evidence to draw this conclusion.

Regarding academic outcomes, few differences are apparent between the two types of strengths assessment. For the VIA-YS research, study 11 reported increased engagement and study 13 found that the intervention only improved engagement for students with SEN. In the self-identification studies, study 9 did not take measures of any academic outcome and study 10 found increases in engagement, although the effect was small (d = 0.36). Therefore, based upon this limited number of studies, there does not appear to be substantial differences between either method on academic outcomes.

Whilst evidence is lacking, researchers have made some hypotheses about why the self-identification of CSs may be a more preferable option. Researchers in study 9, for example, justified their use of self-identification by claiming that this allows children to align their strengths with their self-identity. This is further supported by study 3 in which it was speculated that, with an assessment tool, students could be reluctant to accept the strengths given to them and they may not answer the questions with careful consideration. This was demonstrated by one student in this study who claimed the survey was too long. Therefore, although quantitative data is inconclusive, comments and observations indicate that the self-identification method could be more effective and pragmatic.

2.4 Discussion

2.4.1 Summary of Evidence

This review aimed to examine the effectiveness of school-based CSIs on the well-being and academic outcomes of young people. In particular, four areas were focused upon to investigate the factors altering the effectiveness of such interventions.

Overall, no definitive conclusions can be drawn but there are some indications that CSIs may positively impact some aspects of well-being however this does not appear to be the case for negative affect. This might be because students had little negative affect to start with and so little improvement on this measure could be made. This was not explicitly referred to within any of the current studies. The lack of impact of CSIs on negative affect was not a finding that emerged from adult research and so more investigation is needed to explore this observation.

A second consistent finding in the research is the lack of improvement in academic outcomes, with the exception of classroom engagement. This might be because studies were conducted over a short period of time. However, it could also be because academic outcomes may only rise as a result of increased well-being. As previously mentioned, Linley et al. (2010) found that improvements in well-being reinforced the use of strengths and, the more the strengths were used, the more an individual progressed towards their goals. Supporting this finding, Littman-Ovadia et al. (2017) found that positive affect mediates the relationship between SS use and job performance. Therefore, to see improved academic outcomes, well-being scores may have needed to rise first.

When looking specifically at the impact of CSIs with regards to at-risk students, there were also some consistent trends. Initial findings indicate that CSIs can positively impact well-being, although there is not enough evidence to make this conclusion firmly. Only one quantitative study

is presented and is supported by qualitative comments. The current literature in regards to the impact of CSIs on specific groups of individuals within adult research is also limited however, some inferences can be drawn from Allan and Duffy (2014). In their study of a CSI in higher education, the association between strengths use and life satisfaction was higher in students who found lower meaning and purpose in their work. The same findings emerged regarding academic satisfaction. Therefore, Allan and Duffy proposed that those who have a higher sense of calling to their job or studies are likely to have higher levels of satisfaction and so the impact of the intervention may be reduced due to a ceiling effect. As at-risk students are more likely to experience apathy in school (OECD, 2016), the impact of CSIs with these students may be greater as they could have lower pre-test scores (and a ceiling effect is, therefore, less likely to occur). This is a finding that appears unsurprising when looking to self-determination theory, since at-risk students may not have satisfied their need for competence as much as their higher performing peers. In study 1, the CSI improved students' feelings of being able to succeed and they felt more positively perceived by others which also may increase feelings of relatedness. Further research which compares the impact of the intervention for students with different characteristics could help support this hypothesis.

The type of CSI format used throughout the research varied. The findings of three studies indicate that a one-week intervention is not sufficient to improve well-being. This is not entirely surprising given that one key factor impacting CSI effectiveness is continued practice and engagement (Pritchard, 2009; Proyer et al., 2015). This suggests that extended CS programmes could lead to more positive outcomes, yet, due to the heterogeneity in programme type, the findings are inconsistent. In line with the whole-school study which highly praises the CS approach, it may be that programmes have differing results due to the extent they are embedded within the school. When reviewing positive education, Allison et al. (2020) suggest that in addition to specific programmes, an ecological approach to improving student outcomes is needed by infusing such approaches into school culture. This could be said to target students' need for relatedness by increasing school belonging. Therefore, it may be concluded from this review that the impact of extended CS programmes may be more beneficial than a one-week CSI, although further research is needed.

Whilst it is important that research is free from bias, the studies within this review lack external validity as they are often implemented by researchers which does not reflect everyday classroom practice. In only one study was the intervention conducted by teachers who did not have a specialist interest in positive education and did not receive coaching. Within this study, the findings remained positive and qualitative data indicated that teacher facilitation may be more beneficial. This may be for several reasons. Firstly, linking back to SDT, this method may increase

relatedness between teacher and student and, it may increase the likelihood that the programme is incorporated throughout the school culture. It is of importance however to note that these conclusions are drawn from limited research and, since this factor is not applicable in adult research, considerably more evidence is needed.

Another key factor examined in this review is the method of strengths identification. By examining quantitative data, few differences emerged. However, qualitative findings suggested there may be additional benefits from using self-identification. This method may give students a sense of autonomy and ownership over their strengths as well as ensuring that they can identify with them. This point is key because the speed and intensity to which students identify with their strengths is a factor said to impact the effectiveness of a CSI (Pritchard, 2009). In addition to these psychological factors, practical factors should be considered as surveys require access to a computer, adequate reading skills and sufficient concentration.

On the other hand, many others adopt an opposing perspective. First of all, although it is stated that deploying your highest strengths is important (Seligman, 2011), encouraging young people to identify only five strengths contrasts the view that all strengths are fluid and present in varying degrees (Peterson & Seligman, 2004). Using a standardised CS survey may also be particularly beneficial with at-risk students. In the research conducted with these pupils, students found it hard to pick out strengths related to character and, despite using a strengths assessment, they were still said to take ownership of the results.

Despite this debate, some may suggest that the method of strengths assessment is irrelevant. Niemiec (2018) states that it is the use of strengths, rather than knowledge of one's strengths, that is most important. This was also suggested by Seligman et al.'s (2005) research as groups of adults who identified but did not use their strengths in new ways scored no different from baseline measures of well-being after three months, whilst those who used SSs in new ways continued to benefit from the intervention six months later. Therefore, it could be argued that the method of strengths assessment may not be a significant factor.

2.4.2 Strengths and Limitations

A limitation of the studies presented in this review is that they do not consider how each student's SSs may alter how effective the CSI is. As previously mentioned, certain strengths have particular associations with certain outcomes. Thus, an individual who works on a strength linked to well-being (e.g. gratitude) may be more likely to benefit from the CSI than one who works on a strength with a lower association with well-being (e.g. team work). Therefore, studies need to investigate whether the SS focused upon mediates the effectiveness of CSIs. Furthermore, few

studies in this review conducted follow-up measures. Even if beneficial effects are found, it cannot be determined whether these will remain over time. It is also a consistent weakness across the studies that they lack external validity and have not often reported power. This means that the results may not be generalisable and there may be true effects that have not been detected.

Looking at the review as a whole, comparing CSIs is difficult as there is not one specific format. Whilst the AEA model provides a method of defining a CSI, interventions using this same model can vary greatly. Another limitation of the review is that the screening of papers was conducted by one author which may have impeded the reliability of the process. Despite this, any queries were discussed with the supervision team and the inclusion/exclusion criteria were strictly adhered to. Lastly, this review focused solely on measures of well-being and academic outcomes, yet these studies have also measured outcomes including resilience and gratitude. Further investigation into other measures may provide greater evidence as to whether CSIs have beneficial outcomes on young people's lives.

Despite these limitations, the review also has its strengths. First of all, the studies in this review have been conducted across many cultures and therefore can be considered generalisable to different populations. Secondly, the inclusion of unpublished papers reduced the impact of publication bias and, overall, all but two studies scored good or excellent on the quality assurance assessment. Lastly, the inclusion of both qualitative research, alongside quantitative data, has given insight into teachers' and young people's views. This not only helps to understand perceptions of the intervention but also provides further insight into the interventions' effectiveness.

2.4.3 Suggestions for Future Research

In addition to the gaps identified in the current review, further research should look at the use of CSIs with primary-aged children and its facilitation in a one-to-one format. By conducting more research in this area, it may then be possible to develop a standardised, evidence-based CSI for schools.

Future research should also examine the underlying processes by which CSIs lead to positive outcomes, particularly whether this intervention improves psychological need satisfaction. By doing this, the link between self-determination theory and CSIs may be further supported.

2.4.4 Implications

Reflecting upon this review, there are a number of implications for the realm of Educational Psychology. First of all, Educational Psychologists (EPs) can promote the CS approach within their schools and support staff to most effectively implement CSIs, whether that be at a systemic level or as a more focused intervention. Secondly, EPs can apply the CSI approach to their own practice. These professionals are in a position to be able to highlight a young person's strengths and work collaboratively to action plan how a student could use their strengths to achieve their goals. Furthermore, EPs are able to use the AEA model within casework, working with young people to identify, assess and discuss their strengths, as well as then providing recommendations that build upon a young person's assets.

2.4.5 Conclusion

This review has built upon existing literature on CSIs by bringing together research on the use of the intervention in education, a setting that is under-researched. It has identified some key factors which may influence the impact of such interventions and revealed the gaps in our current understanding. Overall, the impact of CSIs in education appears to mirror those conducted with adults. There is an indication that these programmes can benefit well-being which can be understood through the lens of SDT. Whilst less of an impact is seen on students' academic outcomes, if long-term studies are conducted with a greater period of follow-up, such outcomes may improve over time.

Chapter 3 Rethinking the label: How does the framing of ADHD characteristics impact the attributions and predictions made by school staff?

3.1 Introduction

According to the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM 5; American Psychiatric Association, 2013), attention-deficit/hyperactivity disorder (ADHD) is characterised by persistent inattention and/or hyperactivity-impulsivity that interferes with an individual's functioning and is present from childhood. Although estimates vary, it is suggested that there is a global prevalence of approximately 5% and rising (NICE, 2018; Sayal et al., 2018). With this prevalence, it is unsurprising that the effect of having a label of ADHD has been extensively researched.

3.1.1 The Impact of Diagnostic Labels

The impact of diagnostic labels in education is a widely debated issue. Regarding its benefits, advocates claim that the term ADHD has 'reactive power', by prompting school staff to pay more attention to a child's struggles and enabling access to resources beyond those generally available (Damico & Augustine, 1995). Diagnostic labels have also been shown to increase adults' understanding of a child's difficulties and help them to identify suitable interventions (Lauchlan & Boyle, 2007; Ohan et al., 2011; Small, 2019). A further key element of the 'pro-label' side of the debate is the assertion that receiving a diagnosis of ADHD can improve well-being. This can occur by providing individuals with a sense of belonging to a group who experience the same struggles and, by providing an explanation for their difficulties, provides comfort to a child and those around them (Lauchlan & Boyle, 2007). Regarding ADHD specifically, White & Eptson (1990) suggested that the diagnosis allows parents to externalise any challenging behaviours from their child and thereby reduces any judgements of their child as 'naughty'. It may further be argued that such externalisation helps to 'explain away' the problem, reducing teacher and parental feelings of blame (Lauchlan & Boyle, 2007).

On the contrasting side of the argument, as there is no clear aetiology of ADHD, some claim that the characteristics of ADHD might have been medicalised only because they are deemed by our current society as dysfunctional (Mather, 2012). Additionally, labels may lead to thinking that defines the person by their diagnosis, resulting in generalised interventions, rather than an individualised approach (Lauchlan & Boyle, 2007). This relates to another point of concern

which is that the use of diagnostic labels might lead to prejudice. Research has indicated that educators can have stereotyped notions of how children with this label may behave (Climie & Mastoras, 2015; Jensen et al., 2001; Kos et al., 2006). The beliefs and expectations that others have towards an individual based primarily upon their label is known as labelling bias (Fox & Stinnett, 1998).

In schools, labelling bias towards children with ADHD can occur in several ways. First, the label may impact how staff judge such students' behaviours. According to attribution theory (Weiner, 1986), humans are driven to search for an understanding of why an event or behaviour is occurring. The explanations individuals construct can be classified within three causal dimensions: stability (stable or unstable), controllability (controllable or uncontrollable) and causality (internal or external). Although the aetiology is unclear, ADHD is often linked to genetics or brain function (NHS, 2018); accordingly, it might be expected that individuals are more likely to attribute these children's behaviour as uncontrollable, stable and due to internal causes. There is some research in support of this. When presented with a description of a child with inattentive-overactive behaviours, parents of children with ADHD believed these behaviours to be more stable, less controllable and more internally caused, than parents without children with ADHD (Johnston & Freeman, 1997). This was a finding that was replicated by Johnston et al. (2006). Whilst research into school staff is lacking (Mikami et al., 2019), Small (2019) found that teachers were more likely to believe that a student with ADHD lacked personal controllability of their behaviour. By making these types of attributions, individuals put ownership of a child's difficulties within the child and perpetuate a belief that these children's struggles will be persistent. This is in line with the principles of the 'fundamental attribution error' (Ross, 1977) which proposes that individuals tend to overestimate the degree to which a person's behaviour is determined by their characteristics or attitudes and underestimate the role of situational explanations. Such thinking may lead environmental interventions to be ignored (Lauchlan & Boyle, 2007; Mehan, 2014).

Not all research supports the suggestion that the ADHD label may lead to more within-child attributions of behaviour, however. Small (2019) also reported that the label of ADHD did not affect teachers' beliefs about the causality, stability and external controllability of a child's behaviour. Additionally, Arcia et al. (2000) found that teachers were more likely to attribute the challenging behaviour of a child with ADHD to external causes, such as the family environment, than they were to within-child causes. Thus, the current evidence-base regarding the impact of the ADHD label on school staff's attributions of behaviour is mixed.

Another way in which labelling bias may be present is through the differing expectations staff may have for children with an ADHD diagnosis. In research conducted by Batzle et al. (2010),

teachers rated a child with ADHD as being lower in IQ and having more negative personality traits than those without the label. Similarly, teachers in a study conducted by Metzger (2016) were more likely to report children with ADHD as underperforming academically. These studies suggest that the ADHD label can negatively impact teachers' expectations of a child.

Reflecting upon earlier studies in this area, Cornett-Ruiz and Hendricks (1993) noticed that research had primarily explored the impact of the ADHD label but had not considered the influence of stereotypical ADHD behaviours on teacher beliefs. In an aim to rectify this gap in the literature, the researchers conducted a study whereby teachers were presented with videos of a boy who either displayed 'normal' behaviours (e.g. systematic, on-task play) or ADHD associated behaviours (e.g. scattered, off-task play). Participants were told either that the child was a typical student or that he had a diagnosis of ADHD. After watching the videos, teachers evaluated a piece of the child's work, made judgements about the child's day-to-day behaviours and completed predictions about the child's future. Whilst the label itself did not affect any of these measures, when presented with ADHD associated behaviours, teachers had more negative perceptions about the child's current behaviours and future success. Thus, this would suggest that it may be behaviours associated with ADHD, rather than the label itself, that may influence teachers' beliefs.

Children with ADHD might pick up on others' lowered or negative expectations of them and internalise them, leading to long-term self-beliefs that they are unable to achieve (Murphy & LeVert, 1995). Consequently, a self-fulfilling prophecy can occur (Batzle et al., 2010). This idea is supported by Sherman et al. (2008) who found that, when teachers have positive attitudes towards children with ADHD, they are more likely to succeed. Thus, teacher beliefs are a key issue impacting students' achievement and this is, therefore, an important area of research. The prior research indicates that not only should studies continue to investigate the impact of diagnostic labelling but, building upon the work of Cornett-Ruiz and Hendricks (1993), should also explore the role of how the characteristic behaviours of ADHD are perceived.

3.1.2 Reframing the Characteristics of ADHD

ADHD is often looked at through a deficit lens. Currently, society focuses on 'fixing' the behaviours demonstrated by these individuals and there is little attention paid to how such characteristics can be beneficial (Climie & Mastoras, 2015). This is not to say that schools should deny the challenges experienced by these students but that explicit attention should also be paid to their strengths. Strengths associated with ADHD include creativity, out-of-the-box thinking, imagination, risk-taking, leadership, big-picture thinking and multi-tasking (Weiss, 2005). There is

scope also for the reframing of difficulties that children with ADHD experience, such as inattentiveness, away from their construction as 'abnormal': it has been argued that such behaviours may have served an evolutionary purpose and could be considered to lie within the normal distribution of behaviour (Mather, 2012; Williams & Taylor, 2006). Reflecting upon these ideas, it may be more fitting to move away from thinking about ADHD as a disorder in favour of reframing it as a positive difference (Hartmann, 2003; Mather, 2012). By thinking about the strengths of children with ADHD, teachers might be less likely to hold lower expectations or within-child attributions towards such students.

3.1.3 Aims and Hypotheses of Current Research

To date, no studies have investigated how moving to a strengths-based model can positively alter school staff's perceptions of children with ADHD. The current study aims to build upon prior research by investigating how reframing the characteristics of ADHD, from deficits to strengths, will impact staff's attributions of behaviour and expectations for children with ADHD. Furthermore, this research will also add to the current evidence base regarding the impact of the label on these measures. The following research questions were developed:

1. Does the presence of an ADHD label affect school staff's attributions of a child's behaviour and their predictions for that pupil's future?
2. Does the way ADHD characteristics are framed alter school staff's attributions of a child's behaviour and their predictions for that pupil?
3. Can positive reframing of the characteristics of ADHD alter the impact of the label on the school staff's attributions of challenging behaviour and their predictions for that pupil?

In line with the results of several studies (Batzle et al., 2010; Metzger, 2016; Ohan et al., 2011; Small, 2019), it was hypothesised that the presence of an ADHD label would cause staff to have more within-child attributions of challenging behaviour and lower expectations for a pupil's future. Although no research has yet focused directly upon the role of framing, it was expected that, by positively reframing the characteristics of ADHD, staff would make more positive predictions about a child's future and be more likely to make external attributions of the child's challenging behaviour. Finally, it was hypothesised that the framing of ADHD characteristics would moderate the impact of the label. Specifically, the impact of the ADHD label on teachers' attributions and predictions will be less when the characteristics of ADHD are positively framed compared to when they are negatively framed.

3.2 Method

3.2.1 Participants

Participants were 271 school staff working in primary or secondary classrooms. They were recruited in two ways. First, schools across the South of England and the Midlands were contacted directly. Headteachers were emailed with details of the study and were asked if they would distribute an email, containing a link to an online survey, to their classroom staff. Participants were also recruited by advertising the study on social media. See Appendix L for recruitment posts and emails.

The survey was completed by 299 individuals. Of these responses, 28 were removed as the participants were not classroom staff within a state mainstream school. Hence, they met the exclusion criteria for the study (Appendix M). This left a final participant number of 271, whose details are presented in Table 2.

Table 2

Participant Characteristics

Participant characteristics	Frequency	%
Setting		
Primary	191	70.5
Secondary	80	29.5
Job title		
Headteacher/deputy headteacher	16	5.9
SENCo/inclusion lead	34	12.5
Other member of senior leadership	14	5.2
Class teacher	136	50.2
Teaching assistant	66	24.4
Other	5	1.8
Years worked in classroom-based roles		
Less than 1 year	7	2.6
1-5 years	79	29.2
6-10 years	73	26.9

11-20 years	71	26.2
21-30 years	35	12.9
More than 30 years	6	2.2

3.2.2 Design

This study uses a quantitative 2 x 2 between-subjects design. The first independent variable (IV) is the presence or absence of an ADHD label within a vignette describing a child. The second IV is whether the characteristics of ADHD were positively or negatively framed within the vignette. The dependent variables (DV) are participants' attributions of the child's behaviour and their predictions for the child's future life satisfaction.

3.2.3 Power

To ensure that the study had sufficient power, the required sample size was pre-determined by using Cohen's (1992) guidelines. To detect a medium effect size at a significance value of .05, 45 participants per group was necessary. In this study, the smallest group size consisted of 60 participants and, therefore, the research has sufficient power.

3.2.4 Vignettes

The experimental vignette method was chosen for this research as, according to Aguinis and Bradley (2014), such a method "enhances experimental realism and also allows researchers to manipulate and control independent variables, thereby simultaneously enhancing both internal and external validity" (p. 354). It is also stated that, in comparison to techniques such as interviews, participants are less likely to be influenced by social bias (Alexander & Becker, 1978).

Four vignettes were developed (Appendix N) which differed on two factors: the presence of the ADHD label and how a child's behaviour was framed (positively or negatively). The external validity of the experimental vignette method is enhanced by increasing the similarity between the experimental and natural setting (Aguinis & Bradley, 2014), and therefore the realism of these vignettes was enhanced by presenting the vignette in the form of a teacher questionnaire. This structured format also helped to keep the vignettes as similar as possible.

Following Gibbs et al. (2020), a decision was made to make the child in the vignette male because the prevalence of ADHD is higher in boys and specifying the child's gender minimised a further extraneous variable.

When constructing the vignettes, descriptions were based upon the DSM 5 (American Psychiatric Association, 2013) criteria for the combined presentation of ADHD. The negatively framed vignette was written first and then the information was reworded to reflect a strengths-based perspective. For example, the sentence within the negatively framed vignette, "James finds it difficult to maintain his attention on one task and is easily distracted" was reframed to "James is able to shift his attention between many tasks at once". To alter the presence of the ADHD label, a sentence regarding the child's diagnosis was added to the end of the vignette.

The vignettes were validated by individuals who were independent to the study. An applied psychologist confirmed that the child in the vignettes displayed the behaviours required for an ADHD diagnosis according to the DSM 5. One primary and one secondary school special educational needs coordinator (SENCo) confirmed that the vignettes were accessible to read, realistic and applicable for their settings.

3.2.5 Measures

3.2.5.1 Future Life Satisfaction Scale (FLSS)

The Future Life Satisfaction Scale (FLSS), presented in Appendix O, was used to measure participants' expectations for the child's future. This scale was based upon the Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS; Seligson et al., 2003). The BMSLSS is a six-item questionnaire designed for students aged 8 to 18 which measures their global life satisfaction as well as their satisfaction with their life in five domains: family, friends, school, living environment and self. Students are asked to rate their satisfaction by answering statements such as, "I would describe my satisfaction with my family life as…", on a seven-point scale from "terrible" to "delighted."

In this study, the BMSLSS was adapted. Upon reading the vignette, staff were asked to make a judgement as to how satisfied they thought the child would be with their life at the age of 18. The six domains from the original questionnaire were kept the same but the wording of the items was altered. For example, the previously reported item was rephrased to, "At age 18, how would James describe his satisfaction with his family life?" The Cronbach's alpha for this adapted scale was .91, indicating that the internal reliability was excellent.

3.2.5.2 Adapted Challenging Behaviour Attributions Scale (CHABA)

The Challenging Behaviour Attributions Scale (CHABA; Hastings, 1997) was adapted for use in this study to gather information regarding staff's attributions of the child's behaviour.

To complete this scale, participants were first presented with a description of an incident involving the child. The situation was deliberately ambiguous and lacked detail to reduce the possibility of it influencing participants' attributions. Realism was increased by presenting this information as a behaviour report written by a teacher. Following this, participants were presented with the scale and were asked to rate the extent to which each statement may be the cause of the child's behaviour. Statements included items such as, "he was tired" and "he was bored". In the original scale, items are categorised into five possible explanations for the behaviour: biomedical, emotional, physical environment, stimulation and learned. In this study, an additional subscale of 'relationships' was added which included items relating to the child's behaviour being due to a lack of connection or a disruption in his relationships. This was deemed to be a key interactionist factor that was not included within the original scale.

A mean score is calculated for each subscale. On a 1 to 5 scale, scores above three indicate that the participant considers the explanation to be applicable to the behaviour, and scores below three indicate the participant considers that category to be an unlikely explanation.

The original scale, which is reported to have good face and content validity (Hastings, 1997; Rooney, 2010), was designed to measure the attributions of staff who work with individuals with intellectual disabilities; accordingly, adaptations were made to the wording of items to make them applicable to this study. The final scale, and details of the adaptions, are presented in Appendices P and Q, respectively.

Overall, the internal reliability for the adapted CHABA scale was excellent ($\alpha = .90$). The internal reliability for the new 'relationships' subscale was good ($\alpha = .84$) and, if removed, the overall Cronbach's alpha would have reduced ($\alpha = .88$).

3.2.5.3 Demographic Questionnaire

Following completion of the questionnaires, participants were presented with three multiple-choice questions relating to their job title, number of years worked within classroom-based roles and the type of setting they work in (see Appendix R).

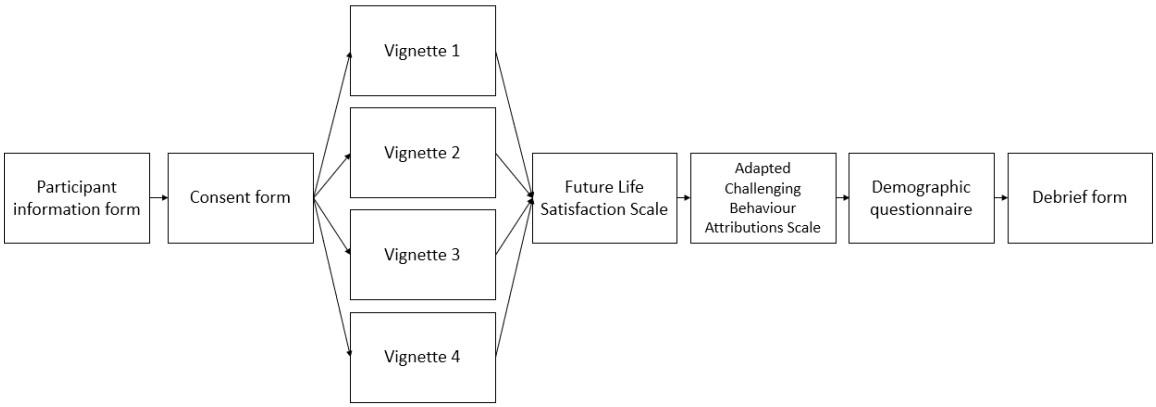
3.2.6 Procedure

An online format was used for the survey to reach the greatest number of participants over a broad geographical area. The process of this survey is presented in Figure 2. After giving informed consent, participants read one randomly allocated vignette and then completed the two measures. The adapted CHABA scale was presented second so that the incident described at the beginning of this scale did not influence participants' answers on the FLSS. After completing the

demographic questionnaire, the debrief form informed participants of the aims of the study. A final link to a separate online form gave participants the opportunity to submit their emails to enter a prize draw.

Figure 2

Process of Online Survey



3.2.7 Ethical Considerations

Before recruitment, ethical approval was gained from the University of Southampton ethics committee. Responses to the survey were anonymous and participants' emails were stored separately from the data. All information was kept in a secure, password-protected document on an encrypted laptop. Following the prize draw, participants' emails were permanently deleted. The data from the study will be kept for 10 years and then destroyed, per the University of Southampton procedure (University of Southampton, 2019).

Participants were informed they could withdraw at any time by closing their webpage and were provided with the researchers' contact details.

3.2.8 Data Analysis Approach

The responses to the survey were downloaded directly into SPSS (Version 27). The data was screened to look for missing data and participants who did not meet the inclusion criteria. Subscale scores for the CHABA scale were then calculated and the statistical analysis conducted.

3.3 Results

A 2 (presence of ADHD label) x 2 (framing) multivariate analysis of variance (MANOVA) was conducted for both DVs. Regarding both tests, most assumptions were met. Whilst there was a small number of outliers and Box's test was significant, this was not a concern since the group

sizes in the study are roughly equal and Pillai's trace test is robust to assumption violations (Field, 2017).

The following partial eta-squared (η_p^2) values were used to determine effect size: small = .01, medium = .06 and large = .14. These figures were proposed by Cohen (1988) and are supported by Fritz et al. (2012) and Olejnik and Algina (2000).

3.3.1 Predictions for Future Life Satisfaction

The overall means and standard deviations for each group and subgroup within the FLSS are presented below.

Table 3

Descriptive Statistics for Group on the FLSS

Subscale	Label presence				Framing				Overall (*N* = 271)	
	Label (*n* = 142)		No label (*n* = 129)		Negative frame (*n* = 143)		Positive frame (*n* = 128)			
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Family	3.23	1.47	3.01	1.44	3.65	1.50	2.54	1.16	3.13	1.46
Friends	3.13	1.49	2.84	1.47	3.41	1.59	2.52	1.19	2.99	1.48
Education	4.56	1.80	4.36	1.89	5.43	1.46	3.39	1.62	4.46	1.84
Himself	3.67	1.53	3.41	1.70	4.13	1.59	2.89	1.38	3.55	1.61
Living	3.67	1.38	3.50	1.46	3.97	1.42	3.16	1.30	3.59	1.42
Overall	3.62	1.52	3.35	1.51	4.13	1.49	2.77	1.19	3.49	1.52

Table 4

Descriptive Statistics for Each Subgroup on the FLSS

Subscale	Negative framing with label (*n* =74)		Negative framing without label (*n* = 69)		Positive framing with label (*n* = 68)		Positive framing without label (*n* = 60)	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Family	3.73	1.45	3.57	1.56	2.69	1.30	2.37	0.97
Friends	3.46	1.65	3.36	1.53	2.76	1.20	2.23	1.13

Education	5.42	1.49	5.43	1.43	3.63	1.64	3.12	1.57
Himself	4.09	1.53	4.17	1.66	3.21	1.40	2.53	1.27
Living	4.00	1.41	3.94	1.43	3.31	1.26	2.98	1.33
Overall	4.16	1.49	4.10	1.51	3.03	1.32	2.48	0.97

Using a Pillai's trace test, the results demonstrated a significant effect of framing on participants' expectations for the pupil's future life satisfaction, $V = 0.34$, $F(6, 262) = 22.16$, $p < .001$, $\eta_p^2 = .34$. There was a non-significant effect of label, $V = 0.02$, $F(6, 262) = 0.73$, $p = .629$, $\eta_p^2 = .02$, and a non-significant interaction between label and framing, $V = 0.02$, $F(6, 262) = 0.84$, $p = .544$, $\eta_p^2 = .02$.

The findings from the follow-up analyses are shown in Table 5. These tests revealed a significant effect of framing on each subscale of the FLSS. School staff who had read the positively framed vignette indicated the child would be more satisfied with his life at age 18, across all domains, than those who read the negatively framed vignette. In the subscales of friendships and living, the effect size was medium and on the remaining subscales, a large effect size was found.

The presence of an ADHD label within the vignette had no significant impact on staff's expectations of the child's future life satisfaction across all subscales. Furthermore, there was no interaction between how the behaviour was framed and the presence of an ADHD label, except for staff's predictions of how satisfied the child would be with himself in the future. When the behaviour was framed negatively, the presence of an ADHD label did not change staff's predictions of how satisfied the child would be with himself as a person but, when the behaviour was framed positively, the presence of an ADHD label led staff to believe the child would be more dissatisfied with himself as a person at aged 18. The effect size of this interaction was small. Graphs representing the results of the FLSS are shown in Appendix S.

Table 5

Follow-up ANOVAs on the FLSS

Group	Subscale	$F(1, 267)$	p	η_p^2
Framing	Family	46.30	<.001***	.15
	Friends	28.26	<.001***	.10
	Education	120.84	<.001***	.31
	Himself	49.23	<.001***	.16
	Living	24.61	<.001***	.08
	Overall	69.83	<.001***	.21

Label	Family	2.21	.138	.01
	Friends	3.36	.068	.01
	Education	1.79	.182	.01
	Himself	2.71	.101	.01
	Living	1.33	.250	.01
	Overall	3.40	.066	.01
Framing * label	Family	0.24	.627	.00
	Friends	1.60	.207	.01
	Education	2.03	.156	.01
	Himself	4.35	.038*	.02
	Living	0.65	.422	.00
	Overall	2.17	.142	.01

Note. *<.05, **<.01, ***<.001

3.3.2 Attributions of Behaviour

A further 2 x 2 MANOVA was conducted for staff's attributions of the child's behaviour. The overall means and standard deviations for each group and subgroup can be seen in Tables 6 and 7.

Table 6

Descriptive Statistics for Group on the Adapted CHABA scale

Subscale	Label				Framing				Overall	
	Label present (*n* = 142)		No label (*n* = 129)		Negative frame (*n* = 143)		Positive frame (*n* = 128)		(*N* = 271)	
	M	SD	M	SD	M	SD	M	SD	M	SD
Learned	3.45	0.50	3.33	0.50	3.51	0.47	3.27	0.50	3.40	0.50
Biomedical	3.00	0.59	2.94	0.48	3.06	0.52	2.87	0.54	2.97	0.54
Physical environment	3.27	0.60	3.09	0.67	3.35	0.60	2.99	0.63	3.18	0.64
Emotional	3.86	0.52	3.75	0.55	3.83	0.54	3.78	0.52	3.81	0.53

Stimulation	3.01	0.55	2.96	0.52	3.11	0.51	2.85	0.54	2.99	0.53
Relationships	3.43	0.52	3.39	0.50	3.51	0.53	3.30	0.46	3.41	0.51

Table 7

Descriptive Statistics for each Subgroup on the Adapted CHABA scale

Subscale	Negative framing with label (*n* = 74)		Negative framing without label (*n* = 69)		Positive framing with label (*n* = 68)		Positive framing without label (*n* = 60)	
	M	SD	M	SD	M	SD	M	SD
Learned	3.55	0.45	3.47	0.49	3.34	0.53	3.18	0.46
Biomedical	3.07	0.53	3.05	0.51	2.91	0.64	2.82	0.41
Physical environment	3.41	0.54	3.30	0.67	3.12	0.63	2.85	0.59
Emotional	3.85	0.50	3.81	0.59	3.87	0.53	3.68	0.50
Stimulation	3.12	0.52	3.10	0.49	2.90	0.56	2.79	0.51
Relationships	3.55	0.51	3.48	0.56	3.30	0.50	3.29	0.41

A Pillai's trace test indicated that there was a significant effect of framing on participants' attributions for the pupil's behaviour, $V = 0.12$, $F(6, 262) = 6.19$, $p < .001$, $\eta_p^2 = .12$, however there were non-significant effects of label, $V = 0.04$, $F(6, 262) = 1.81$, $p = .097$, $\eta_p^2 = .04$, and a non-significant interaction between label and framing on staff's attributions, $V = 0.02$, $F(6, 262) = 0.72$, $p = .638$, $\eta_p^2 = .02$.

The results of follow-up tests are shown in Table 8. This revealed a highly significant effect of framing on all subscales, except for emotions which was non-significant. In the subscales in which significance was found, staff who had read the negatively framed vignette had greater certainty that these domains explained the child's behaviour than those who read the positively framed vignette. The effect size was medium for the subscales of learned, physical environment and stimulation, and small for the biomedical and relationship subscales.

Regarding the impact of the ADHD label, two subscales showed significant results within the follow-up analyses. When the label of ADHD was present, school staff had greater certainty that the incident was due to learned behaviour or the physical environment, but these effects were small. Whether the label was present or not, staff were just as likely to believe the

behaviour was due to biomedical causes, emotions, stimulation or relationships. There were no significant interactions between framing and label on school staff's attributions of behaviour. Graphs representing the results of the adapted CHABA are shown in Appendix T.

Table 8

Follow-up ANOVAs for adapted CHABA scale

Group	Subscale	*F*(1, 267)	*p*	η_p^2
Framing	Learned	18.23	.000***	.06
	Biomedical	9.30	.003**	.03
	Physical Environment	24.47	.000***	.08
	Emotional	0.67	.414	.00
	Stimulation	16.87	.000***	.06
	Relationships	12.44	.000***	.05
Label	Learned	4.42	.036*	.02
	Biomedical	0.74	.390	.00
	Physical Environment	6.63	.011*	.02
	Emotional	3.05	.082	.01
	Stimulation	1.05	.307	.00
	Relationships	0.43	.511	.00
Framing * Label	Learned	0.53	.469	.00
	Biomedical	0.32	.570	.00
	Physical Environment	1.19	.277	.00
	Emotional	1.14	.287	.00
	Stimulation	0.43	.512	.00
	Relationships	0.24	.621	.00

Note. *<.05, **<.01, ***<.001

3.4 Discussion

3.4.1 Summary of Findings Within the Wider Context

The current study aimed to build upon prior research by investigating the impact of the ADHD label on school staff's predictions for a pupil's future and their attributions of the child's behaviour. It was hypothesised that the presence of an ADHD label would lower staff's

expectations and result in more within-child attributions. The results of this study do not appear to support this hypothesis.

Regarding staff's predictions for the child's future life satisfaction, the ADHD label did not have a significant effect. This is contradictory to much of the prior research which found that the label led to lower expectations of a child's current attainment and social-emotional functioning (Batzle et al., 2010; Metzger, 2016). Instead, it is in alignment with the results of Cornett-Ruiz and Hendricks (1993), who found that the label did not alter teachers' impressions of students' likelihood to attain future success. Taking all of these results into account, the possibility is suggested that, when staff are asked to make judgements about the current success of a child with ADHD, their expectations of students with this diagnosis are lower; but when staff are asked to make predictions about the future, as they were in the current study and Cornett-Ruiz's and Hendricks's study, the label does not seem to alter their expectations. Since having a diagnostic label is considered to provide more access to resources (Damico & Augustine, 1995), staff might have considered that a child with ADHD may be just as likely to succeed, despite their current difficulties, because they will have greater access to support throughout their education.

Regarding the second outcome variable, overall, staff's attributions of behaviour also did not differ as a result of the label and this was not in line with the hypothesis which predicted that the label would lead to more within-child attributions. Whilst it was found that the presence of an ADHD diagnosis increased staff's likelihood of attributing the child's behaviour to two of the external causes (environment or learned behaviour), this finding should be interpreted with caution: not only was this effect small, but there was no overall effect of the label on staff's attributions. Hence, these significant results may be due to a type 1 error as a result of the further follow-up tests completed.

Overall, therefore, this research found no evidence for labelling bias across both outcome variables, contrary to expectations. This might be explained, in part, by cultural differences. The previously reported studies, in which labelling bias was present, were conducted within Canada (Johnston et al., 2006; Johnston & Freeman, 1997) and the USA (Batzle et al., 2010; Metzger, 2016). Such countries have notably different approaches to ADHD than the UK. In a review of studies conducted by Raman et al. (2018), 4.48% of children in North America were receiving ADHD medication compared to 0.70% in Europe (France, UK and Spain). The authors claim that, as there was no evidence for variation in the prevalence of ADHD, this difference may be due to how ADHD is conceptualised. Perhaps, in the studies where labelling bias is found, there is an increased perception that children with ADHD need medical treatment. Such attitudes may be less prevalent within the UK.

Another possible explanation for the non-significant effect of label within this study is that attitudes towards ADHD may have changed over time. As mentioned, the rate of diagnosis for ADHD is increasing (NICE, 2018; Sayal et al., 2018) and therefore, working with students who hold this diagnosis has become more common. The previous studies reported in this paper which did find labelling bias were not conducted within the last five years. This supports the possibility that conceptualisations of ADHD may be shifting and may explain why the current results differed from expectations.

The second focus of this study was to investigate whether reframing the characteristics of ADHD alters school staff's attributions of behaviour and predictions of a child's future life satisfaction. It was expected that, when the characteristics of ADHD are positively framed, school staff would be more likely to make external attributions regarding challenging behaviour and would express the belief that the child will be more satisfied with their life in the future, than if characteristics are negatively framed. The current study found some evidence to support this. Regarding staff's predictions for the child's future, this finding was highly significant and effect sizes were medium to large. Whilst no prior research has been conducted in this area, the results are consistent with the beliefs of Climie and Mastoras (2015), Hartmann (2003) and Mather (2012), who advocate for the need to alter thinking around ADHD to a strengths-based perspective.

Reframing was also found to impact school staff's attributions on present behaviour. When presented with a range of explanations following a description of a child's behaviour, staff who had previously read the child's behaviour described negatively expressed greater certainty when making attributions. This was the case regardless of whether the explanation related to internal or external factors. Although contrary to expectations, these results align with the thoughts of Climie and Mastoras (2015) who proposed that, when behaviour is looked at from a deficit model, adults attempt to "fix" behaviours. Thus, in the current study, when school staff were presented with a child's behaviour from the negative frame, they may have been more motivated to look for explanations for the child's behaviour in the hope to find a solution to manage it.

Whilst those receiving a negatively framed description of a child's behaviour expressed greater certainty regarding both internal and external attributions, the differences between the groups were greater on the external attribution statements than they were for the internal attribution statements. This is indicated by a medium effect size for many of the external subscales (learned behaviour, physical environment and stimulation) and a non-significant or small effect size for two of the internal attribution subscales (emotions and biomedical). Yet

again, this may be explained by staff's desire to fix undesirable behaviours. When looking for solutions to manage challenging behaviour, staff reading the negatively framed vignette may have been more inclined to make external attributions as environmental factors may be deemed easier to change. These results indicate that how a child's behaviour is framed by adults affects the attributions that are made.

The third, and final, research question focused upon whether reframing the characteristics of ADHD alters the impact of the label on school staff's attributions of challenging behaviour and their predictions for that pupil. It was hypothesised that an interaction effect would be found. No evidence was found to support this. Whilst there was no overall interaction apparent, follow-up statistical analysis found that, despite highlighting the child's behaviours positively, the presence of the ADHD label led staff to believe the child would be less satisfied with himself as a person at the age of 18. When the behaviour was described negatively, the diagnosis did not change staff's expectations of the child's future satisfaction with himself. This finding should be interpreted with caution. Firstly, this effect was small and the statistical difference may be a type 1 error as a result of the extra follow-up analyses. In the absence of an overall main effect in the negative framing group, it is difficult to draw a firm conclusion from this finding.

3.4.2 Strengths

In addition to providing clarity to the pre-existing literature and addressing the under-researched area of positive reframing, the methodology used in this study may be considered an area of strength. The reliability for both scales was deemed excellent and the use of vignette methodology allowed control of extraneous variables such as the child's age and gender. When compared to other methods such as interviews, vignettes are also less likely to be impacted by social bias and, by presenting the information as a questionnaire, realism was increased thereby further enhancing external validity.

Participant recruitment in this study was a further strength. A large sample size allowed sufficient power to detect medium effects and the participants' demographics were diverse. This promotes confidence that the results are broadly reflective of the larger whole-school staff population.

3.4.3 Limitations

Within this study, participants were asked to make judgements about a child in an ambiguous situation whilst being given very limited information. This may have led participants to

be cautious in making decisions. This idea is supported by Cornett-Ruiz and Hendricks (1993) who reported that "educators have often been warned not to be unduly swayed by first impressions and to carefully consider all information" (p. 354). This may have led to the lack of significant results regarding the impact of the label.

Secondly, the vignettes developed in this study focused on a male child with the combined presentation of ADHD and, therefore, differing results might have been found had the gender and presentation been altered. In research conducted by Ohan et al. (2011), teachers were less confident in managing the challenging behaviour of boys with ADHD than they were of girls with ADHD. Therefore, the findings of this study cannot be generalised to infer staff's perceptions of those with different ADHD presentations or genders.

3.4.4 Implications for Future Research

As well as addressing these limitations, research should build upon the current study through qualitative research with school staff. Using methods such as focus groups or interviews, researchers should gather staff's views about their biases, their perspectives on the strengths of children with ADHD and their reflections on how their pedagogy accommodates for both the strengths and needs of these pupils. Further research should also consider the role of cultural differences and investigate whether the results of this study would be replicated in areas such as North America.

It is also important that research highlights the voices of young people with ADHD including their views of labelling and whether they believe their positive attributes are recognised by others.

As the current research is one of the first studies to focus on how school staff's judgements can be altered through taking a strength-based approach, more investigation is needed, not just within the realm of ADHD but more widely in education, into the potential benefits of moving away from a deficit model.

3.4.5 Implications for Educational Psychologists (EPs)

3.4.6 Mather (2012) notes that the view of ADHD from a deficit model is deeply engrained and there is a need to re-examine the views and responsibilities of health practitioners, educational professionals, researchers and parents. It is clear that EPs, who are in close contact with all these parties, can help promote new ways of thinking. One way in which this could be done is through consultation discussions and training. Report writing is another pathway for change. Educational psychologists should carefully consider the terminology used within their reports, consistently highlight the strengths of young people and draw attention to how such strengths can be promoted within the classroom. Conclusion

The current research highlights that the label of ADHD may have less of an impact as previously thought. Building upon the pre-existing literature, this study examined the effect of positively reframing the characteristics of ADHD and found that, instead of the label, a more important factor on staff's judgements may be how these individuals construe the characteristics of ADHD. It has been found that, when behaviour is seen through a negative lens, staff may focus on fixing a child's behaviour and may have lower expectations for a child's future. The impact of viewing the behaviours and characteristics of children with ADHD through a strengths-based lens had not been previously examined, yet it is an important area to research. If a strengths-based approach is taken, staff may focus more upon building a child's assets, in turn helping them to achieve their ambitions. This is not just an approach that may be important for children with ADHD but may be beneficial for all students.

Appendix A Participant information sheet

An investigation into school staff's attributions of behaviour and future expectations for pupils.

You are being invited to take part in the above research study. To help you decide whether you would like to take part or not, it is important that you understand why the research is being done and what it will involve. Please read the information below carefully. You can ask questions (via the email details given below) if anything is not clear or you would like more information before you decide to take part in this research. You may like to discuss whether to take part with others, but it is up to you to decide. If you are happy to participate you will be asked to provide your consent by checking a box on an electronic form.

What is the research about?
This research is conducted as part of an Educational Psychology doctorate course at the University of Southampton. This research is aiming to investigate how school staff interpret behaviour and how a child's behaviour alters school staff's expectations. This will provide us with a better understanding of what factors affect how staff think about pupil behaviour.

Why have I been asked to participate?
You have been invited to participate as you work with pupils in the classroom within a mainstream state school. We are aiming to recruit 180 participants for this research.

What will happen to me if I take part?
In this study, you will be asked to read a short description of a pupil. Then you will be presented with two short questionnaires and asked a few demographic questions. This process will take around 5-10 minutes. Following this, you will be given a debrief statement and you will be given the opportunity to enter your email to be entered into a prize draw.

Are there any benefits for me taking part?
If you take part, you have the opportunity to be entered into a prize draw to win one of five £20 amazon vouchers. This research will also help to improve our current understanding of school staffs' perception of behaviour which may impact on future training they receive and influence individual's own practice.

Are there any risks involved?
This research is of low risk. If you have any concerns, you can contact the researchers via email.

What data will be collected?
Your responses to the questionnaires will be saved electronically. A demographic questionnaire will ask you about your job role and the type of setting you work in. If you wish to enter the prize draw, you will be required to enter your email address, however email addresses will be held separately from your responses in the main study. You will not be required at any point in the main survey to provide your name or any other personally identifiable information. All resulting data will be kept within a password protected system. After the prize draw has ended, email addresses will be permanently deleted.

Will my participation be confidential?
Your participation and the information we collect about you during the course of the research will be anonymous. You will not be asked for any personal information such as your name or the name of your school.

Only members of the research team and responsible members of the University of Southampton may be given access to data collected for monitoring purposes and/or to carry out an audit of the study to ensure that the research is complying with applicable regulations. Individuals from regulatory authorities (people who check that we are carrying out the study correctly) may require access to this data. All of these people have a duty to keep your information, as a research participant, strictly confidential.

Do I have to take part?
No, it is entirely up to you to decide whether or not to take part. If you decide you do want to take part, you will need to tick to a box to give your consent to show you have agreed to take part.

What happens if I change my mind?
You have the right to change your mind and withdraw at any time without giving a reason and your participant rights being affected. You may stop the study at any time by closing this window. Any non-completed questionnaire data will be deleted. After you complete the study, you will not be able to retract your responses as the data is anonymous (so we will not know which information to delete).

What will happen to the results of the research?
The research will be written up as part of a thesis project and will be presented at the University of Southampton postgraduate conference. In the future, it may be published in an academic journal. Research findings made available in any reports or publications will not include information that can directly identify you.

Where can I get more information?
If you have any further questions regarding this research, you can contact the lead researcher, Louise Boeckmans (Educational Psychology doctorate pupil) at l.boeckmans@soton.ac.uk, or the research supervisors Colin Woodcock (Academic and Professional tutor) at C.Woodcock@soton.ac.uk and Dr Ed Sayer (Educational psychologist) at Ed.Sayer@southampton.gov.uk.

What happens if there is a problem?
If you have a concern about any aspect of this study, you should speak to the researchers (details above) who will do their best to answer your questions.

If you remain unhappy or have a complaint about any aspect of this study, please contact the University of Southampton Research Integrity and Governance Manager (023 8059 5058, rgoinfo@soton.ac.uk).

Please read the next page for the Data Protection Privacy Notice.

Data Protection Privacy Notice

The University of Southampton conducts research to the highest standards of research integrity. As a publicly-funded organisation, the University has to ensure that it is in the public interest when we use personally-identifiable information about people who have agreed to take part in research. This means that when you agree to take part in a research study, we will use information about you in the ways needed, and for the purposes specified, to conduct and complete the research project. Under data protection law, 'Personal data' means any information that relates to and is capable of identifying a living individual. The University's data protection

policy governing the use of personal data by the University can be found on its website (https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-foi.page).

This Participant Information Sheet tells you what data will be collected for this project and whether this includes any personal data. Please ask the research team if you have any questions or are unclear what data is being collected about you.

Our privacy notice for research participants provides more information on how the University of Southampton collects and uses your personal data when you take part in one of our research projects and can be found at http://www.southampton.ac.uk/assets/sharepoint/intranet/ls/Public/Research%20and%20Integrity%20Privacy%20Notice/Privacy%20Notice%20for%20Research%20Participants.pdf

Any personal data we collect in this study will be used only for the purposes of carrying out our research and will be handled according to the University's policies in line with data protection law. If any personal data is used from which you can be identified directly, it will not be disclosed to anyone else without your consent unless the University of Southampton is required by law to disclose it.

Data protection law requires us to have a valid legal reason ('lawful basis') to process and use your Personal data. The lawful basis for processing personal information in this research study is for the performance of a task carried out in the public interest. Personal data collected for research will not be used for any other purpose.

For the purposes of data protection law, the University of Southampton is the 'Data Controller' for this study, which means that we are responsible for looking after your information and using it properly. The University of Southampton will keep identifiable information about you for 10 year after the study has finished after which time any link between you and your information will be removed.

To safeguard your rights, we will use the minimum personal data necessary to achieve our research study objectives. Your data protection rights – such as to access, change, or transfer such information - may be limited, however, in order for the research output to be reliable and accurate. The University will not do anything with your personal data that you would not reasonably expect.

If you have any questions about how your personal data is used, or wish to exercise any of your rights, please consult the University's data protection webpage (https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-foi.page) where you can make a request using our online form. If you need further assistance, please contact the University's Data Protection Officer (data.protection@soton.ac.uk).

Thank you for taking the time to read the information sheet and considering taking part in the research.

Appendix B Informed consent form

Study title: An investigation into school staff's attributions of behaviour and future expectations for pupils.

Researcher Name	Louise Boeckmans - (l.boeckmans@soton.ac.uk)
Supervisors	Colin Woodcock (academic and professional tutor – c.woodcock@soton.ac.uk) Dr Ed Sayer (educational psychologist – ed.sayer@southampton.gov.uk)
ERGO number	54428.A1
Version number	1

Please read the following consent statements. If you agree, please tick the box to indicate that you consent to taking part in this survey.

- I have read and understood the participant information (*on previous page*) and have been given contact information should I wish to ask questions about the study.
- I agree to take part in this research project and agree for my data to be used for the purpose of this study.
- I understand my participation is voluntary and I may withdraw at any time during the study, by closing this window, for any reason without my participation rights being affected.
- I understand that I cannot withdraw my responses after I have completed the study as my data is anonymous.
- I understand that I will not be directly identified in any reports of the research.

☐ Please tick (check) this box to indicate that you consent to taking part in this survey.

Appendix C Debrief form

Project title: An investigation into school staff's attributions of behaviour and future expectations for pupils.

ERGO ID: 56202.A1

The aim of this research was to investigate whether the label of attention deficit hyperactivity disorder (ADHD) alters how school staff interpret challenging behaviour and whether this changes their expectations for that child's future. Half of participants were told that the young person described in this study had ADHD, and half were not given this information. **We did not tell you all of these details at the start of the project to help avoid your answers being influenced.**

It is expected that when the label of ADHD is provided, individuals will have lower expectations for the young person's future and may interpret their behaviour as due to something internal rather than due to external factors.

Secondly, the study also aims to see whether school staff's expectations for the child and interpretations of their behaviour alter depending upon how the characteristics of ADHD are framed. Half of participants received descriptions of the child where the characteristics were positively written (e.g. James is an active child and he is always on the go. Often, he will move around the classroom, talking to others about his imaginative ideas) and half received a description where the characteristics of ADHD presented negatively (e.g. James is fidgety and always squirming in his seat. Often, he will move around the classroom, talking to others and distracting them).

When the characteristics of ADHD are positively described it is expected that participants may interpret the behaviour differently and will have higher expectations for the young person's future compared to when the characteristics are negatively framed.

Your data will help our understanding of how the label of ADHD, and how we describe ADHD-related behaviours, effects young people.

Once again results of this study will not include your name or any other identifying characteristics.

It was not stated at the start of this study that the research is focused on ADHD-related behaviours as this would have altered the responses for the participants who were not told that the child had been diagnosed with ADHD. Therefore, please do not discuss this research or your responses with other participants that you might know.

You may have a copy of this debrief if you wish or a summary of the research findings once project is completed by contacting the researcher (details below).

If you have any further questions please contact me *(Louise Boeckmans)* at l.boeckmans@soton.ac.uk. Alternatively, you may contact my supervisors, Colin Woodcock (academic and professional tutor) at c.woodcock@soton.ac.uk or Dr Ed Sayer (Educational psychologist) at ed.sayer@southampton.gov.uk

If you have questions about your rights as a participant in this research, or if you feel that you have been placed at risk, you may contact the University of Southampton Research Integrity and Governance Manager (023 8059 5058, rgoinfo@soton.ac.uk).

Thank you for your participation in this research.

Appendix D Search strategy

The following search terms, with no limiters, were used across the four online databases used in the systematic search:

> ((“character strength*” OR “signature strength*” OR “strengths classification” OR “strengths identification” OR “strengths assessment” OR “VIA survey”) NEAR/5 (Intervention OR program*)) AND (Student OR child* OR adolescen* OR teenager* OR “young people” OR pupil* OR school OR college OR education)

Initial search terms were acquired from the title of this systematic review and then relevant synonyms were added. Synonyms were separated using the search command ‘OR’ and kept within brackets, whilst different groups of search terms were connected with the command ‘AND’. Asterisks were used to account for alternative endings (e.g. adolescen* for adolescent and adolescence) and quotation marks were used to search for phrases. Lastly, the search command NEAR/5 was used to ensure that synonyms of ‘character strength*’ and synonyms of ‘intervention’ were written within five words of each other. Within PsychInfo, the NEAR/5 command was changed to N5 due to this database’s different requirements.

The following pre-determined inclusion and exclusion criteria were applied to the search results (Table 9).

Table 9

Inclusion and Exclusion Criteria used in Systematic Search

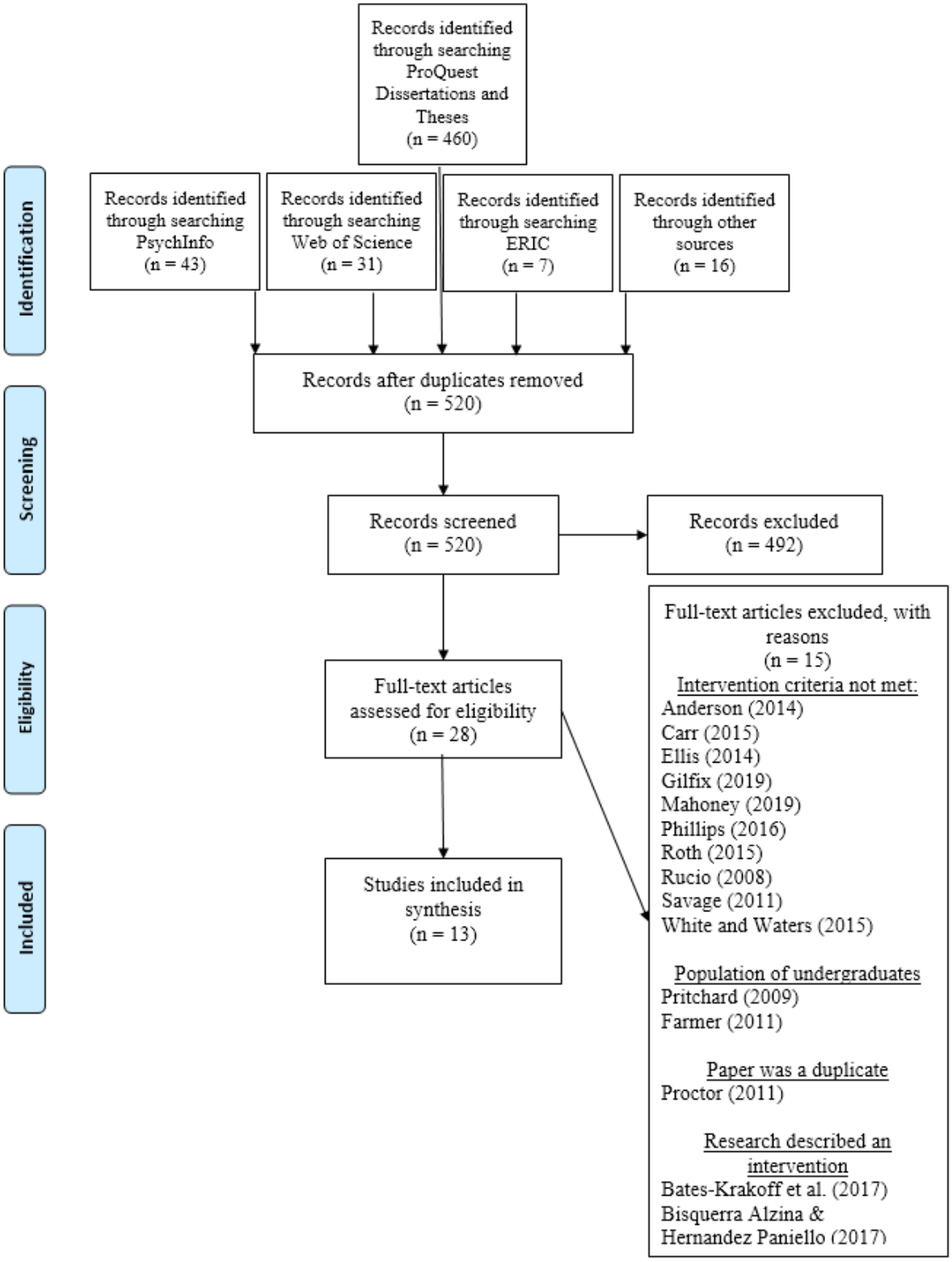
Study Characteristic	Inclusion Criteria	Exclusion Criteria
1. Population	The intervention is conducted with young people aged 18 or under.	The intervention is conducted with anyone over the age of 18.
2. Intervention	A programme that includes the assessment, exploration and application of signature/character strengths at the individual, group or whole-class level.	A programme that does not involve the assessment, exploration and application of signature/character strengths.
3. Comparator	Any	N/A
4. Outcomes	The research includes measures of well-being or academic outcomes.	The research does not measure well-being or academic outcomes.
5. Setting	Schools and colleges	Clinical settings

6. Publication	Full-text access to the article. Any published or grey literature	Full-text is not available.
7. Type of research	Papers examining the impact of the intervention using primary data.	Review articles or articles using secondary data.

The number of records retrieved at each stage and a visual representation of the systematic search can be seen within the PRISMA flow diagram (Moher et al., 2009), presented in Figure 3.

Figure 3

PRISMA Chart



Appendix E The rationale for excluded studies after full-text screening

Table 10

Rationale for Excluded Papers

Paper	Study characteristic criteria relating to exclusion	Explanation for exclusion
Anderson (2014)	Intervention	The intervention studied in this research was described as a 'character education programme'. The school headteacher identified six core values ('the six pillars of character') and these values were communicated, taught and demonstrated to pupils. This was done in the school through identifying monthly character themes, using a 'student of the month' scheme, teaching lessons based upon powerful quotes and focusing on these values within assemblies. Therefore, this study is excluded because it does not focus on a signature/character strengths intervention where the student identifies their own strengths.
Bates-Krakoff et al. (2017)	Type of research	This paper describes and gives details about an intervention based upon character strengths. It does not test or evaluate the efficacy of the intervention.
Bisquerra Alzina & Hernandez Paniello (2017)	Type of research	This paper describes and gives details about an intervention based upon character strengths. It does not test or evaluate the efficacy of the intervention.
Carr (2015)	Intervention	This study focuses upon the 'Afterschool Centers for Education (ACE)' programme. This is a federally funded afterschool programme that focuses upon improving academic performance, attendance, behaviour and graduation rates to ensure pupils are prepared for college or work. This programme does not focus on identifying and using character strengths. Thus, it is not a character strengths intervention.
Ellis (2014)	Intervention	The study used the 'Advancement via Individual Determination' (AVID) programme and investigated the impact of this programme on specific character strengths. Therefore, character strengths are used as an outcome measure. It does not investigate the efficacy of a character strengths intervention.
Farmer (2011)	Participants	Participants in this study were undergraduate students.

Paper	Study characteristic criteria relating to exclusion	Explanation for exclusion
Gilfix (2019)	Intervention	This research investigated the most frequent self-identified strengths of pupils enrolled in accelerated curricula. A second research question explored whether these strengths differed between different subgroups (ethnic groups, programme enrolled on, level of academic risk and level of emotional risk). It does not include a character strengths intervention.
Mahoney (2019)	Intervention	This study evaluates the online 'Thrively' intervention. As part of this intervention, students write reflections, upload pictures, plan towards goals and the programme provides information regarding careers the pupil indicated that they are interested in. Whilst a strengths assessment is conducted by pupils as part of this intervention, there are multiple dimensions to this programme and, as it does not focus upon exploring and applying an individual's strengths (the AEA model), it was excluded from this review.
Phillips (2016)	Intervention	The interventions studied in this research involved the 'Three Good Things' exercise and an 'Honouring your Word' exercise. Exploring and acting upon signature strengths, part of the AEA model, was not carried out and so this paper was excluded.
Pritchard (2009)	Participants	Participants in this study were undergraduate students.
Proctor (2011)	Other	This is the same study as reported in Proctor et al. (2011), which is included in this review. It is the thesis relating to the published paper.
Roth (2015)	Intervention	This study investigates a 10 session intervention that includes activities relating to the 'You at Your Best' exercise, use of gratitude journals, gratitude visits and planning for the future through optimism and hope. Sessions 6 and 7 involve identifying signature strengths and using them in a new way however, as it is a multi-intervention approach, it is not possible to isolate the effects of the signature strengths exercise from other aspects of the intervention.
Ruscio (2018)	Intervention	This study developed a positive education programme. It involved a range of activities including gratitude visits, mindfulness, story reading and strength spotting. The programme is not a character strengths intervention using the AEA model and contains multiple other activities.
Savage (2011)	Intervention	The research used a multi-intervention approach as it consisted of activities including gratitude journals, acts of kindness and optimistic thinking. Thus, it is not possible to evaluate the impact of the one character strengths activity alone.
White and Waters (2015)	Intervention	This paper is a case study of a school that used the VIA character strengths inventory within various areas of curriculum e.g. identifying strengths of fictional characters in literacy and strengths-based coaching in sports. The identification of students' strengths, exploring these and applying their strengths was not described.

Appendix F Data Extraction table

Table 11

Data Extraction Table for Included Studies

Study number, author, date and research question/aim	Participant characteristics	Method/Design	Outcome measures	Results
Study 1 Bird (2014) Research questions: Does the LYP [Leadership and Young Professionals] treatment group have a significant effect on students' self-report outcomes? Does the LYP treatment group have a significant effect on students' objective outcomes?	Number: 86 Age: 11-14 Gender: 47% male in intervention, 60% male in control. Ethnicity: 84% black in the intervention group and 86% in control SES: High poverty school Location: South Carolina, USA Other key characteristic(s): Students were "at-risk". They all had free/reduced-cost lunches. Some also had low course grades and high school disciplinary referrals.	Setting: Two public middle schools Intervention duration: One term (10 weeks) Intervention format: It was an after-school intervention made up of several 75-minute sessions. Students completed the VIA-YS then discussed their strengths and how they could use them in the future. Over the term, students were required to record how they would use these strengths in new and different ways to achieve their short-term and long-term goals. The students also kept gratitude journals, wrote gratitude letters and created job-related applications. They learned about school courses and extracurricular activities related to	Life satisfaction (The Brief Multidimensional Students' Life Satisfaction scale) Gratitude (Gratitude Questionnaire) Self-efficacy (Children's Perceived Self-Efficacy scales) Frequency of positive and negative affect (Positive and Negative Affect Schedule for Children) School engagement (Student Engagement Instrument) School grades (Grade reports)	Analysis: General linear modelling was used with the pre-test scores as co-variates. Findings: At an 80% confidence interval, significant effects were found for self-efficacy. Negative effects were found for maths and English grades and there was no effect on science and social studies grades. There were no changes in cognitive engagement. The intervention did not significantly impact positive affect but there was a large positive effect on overall subjective well-being, a small decrease in negative affect and a large positive effect on life satisfaction.

Study number, author, date and research question/aim	Participant characteristics	Method/Design	Outcome measures	Results
		their interests and character strengths. Out of the 10 sessions, 2 were directly focused on character strengths. However, the use of character strengths was embedded into other activities (e.g. goal setting activities which were 2 sessions, and career activities, which ran across all sessions). Design: Students were randomly assigned to the Leadership and Young Professionals (LYP) programme (n = 70) or a waitlist control group (n = 16). Self-report and objective measures were taken at baseline and after the intervention. Intervention fidelity was measured via an implementation checklist.	After school performance (After-school performance survey)	
Study 2 Cuomo (2020) Research questions: To what degree does using a character strength in a new way on a daily basis over the course of one week increase life	Number: 119 Age: 15-16 years Gender: 60.5% male Ethnicity: Whole-school demographics were: 82% white, 9% Hispanic, 6% Asian, 2% Black/African	Setting: High School Intervention duration: Seven days Intervention format: The intervention was conducted at a whole class level by the class teacher. The first session involved explaining and describing character strengths. In session 2, students completed the VIA-YS,	Life satisfaction (The Multidimensional Students' Life Satisfaction scale) General and academic self-esteem (Coopersmith Self-Esteem Inventory – School Form).	Analysis: An ANCOVA used to compare the groups' post-test scores whilst controlling for pre-test scores. Findings: There were no differences between the groups on life satisfaction or general self-esteem.

Study number, author, date and research question/aim	Participant characteristics	Method/Design	Outcome measures	Results
satisfaction and self-esteem in 10th-grade students?	American and 1% Multiracial. SES: 3% were classed as economically disadvantaged. The town has a median household income of $155,273 Location: North-eastern USA Other key characteristic(s): N/A	identified their signature strengths and were told to use one of their signature strengths in a new way every day for five school days. They were also instructed to write their actions down as a record. On day 7, students shared their strengths and how they had used them. Design: A randomised control design was used. Three classes were assigned to the intervention group (n = 67) and three classes (n = 52) formed a wait-list control. Participants completed measures before and after the intervention.		
Study 3 Gillum (2005) Primary research question: What effect, if any, does strengths-based instruction have on the quality of effort and intentional use of strengths by under-performing high school students in mathematics?	<u>Quantitative study</u> Number: 103 Age: 14-16 years Gender: 44% male Ethnicity: 82% Hispanic, 6% white, 5% other, 1% African American and 6% provided no response. This was reported to be representative of the wider school community.	Setting: High school Intervention duration: One month Intervention format: The intervention consisted of six, 55-minute lessons. Before the intervention, students completed the StrengthsFinder tool. The first two lessons of the intervention focused on explaining and discussing the strengths. Students were also encouraged to discuss their strengths with those who know them	Quality of effort (student and teacher ratings of effort, attendance and homework completion) Use of strengths (pupil questionnaire) Pupil interviews focused upon students' knowledge of strengths, use of their	Analysis: The mean scores were used to compare groups. The qualitative findings were explored through phenomenological data analysis. Findings: They stated that the strengths instruction led to better-retained knowledge of strengths, increased effort, better attendance, more completed homework and more

Study number, author, date and research question/aim	Participant characteristics	Method/Design	Outcome measures	Results
	Location: California, USA Other key characteristic(s): Participants were described as under-performing students. <u>Qualitative study</u> Number: Five students from one experimental group. Demographics: To ensure diversity, three boys and two girls were selected, four of whom were Hispanic and one of which was white.	well. Following sessions focused on discussing how strengths contributed to their prior successes, how they were currently using their strengths at school and planning how they can use their strengths in future tasks. The final session involved reporting back on how using their strengths to overcome the challenge went. Homework was also given in each session (e.g. identify a task and intentionally using one of their strengths). Quantitative design: Four mathematics classes for under-performing students were randomly assigned to either conducting the strengths assessment only (n =25), receiving instruction on how to utilise their strengths (n = 21), assessment and instruction (n = 31) or a control group (n = 26). Students and teachers completed questionnaires before and after the intervention. Qualitative design: Semi-structured interviews were conducted with five students, who received both	strengths, their effort in school, how the school has helped them to build their strengths and the impact of strengths instruction on their academic performance.	intentional use of strengths. Through qualitative analysis, the students expressed that they were taking ownership of their strengths and believed that this helped them to work harder.

Study number, author, date and research question/aim	Participant characteristics	Method/Design	Outcome measures	Results
		strengths assessment and instruction, before the intervention, immediately after the intervention and two months after.		
Study 4 Hersh (2008) Research aim: To test the effects of a model for SBA [strength-based assessment] with youth to see if participating in this type of assessment would enhance their recognition of their strengths.	Number: 7 Age: 12-14 Gender: 57% male SES: Low socio-economic families Location: Texas, USA Other key characteristic(s): Participants were described as having academic vulnerability. Inclusion criteria included having free/reduced lunch, major life stressors and a grade-point average of C or less.	Setting: Public, suburban middle school Intervention duration: 15 weeks Intervention format: The intervention was a strengths-based assessment (SBA) programme and was delivered over 5 sessions. The first session involved rapport building between the assessor and child, and interviews highlighted possible strengths. In sessions two and three, students' cognitive and academic skills (via the Woodcock-Johnson test) were assessed. Session four involved students completing the VIA-YS and the Big Five Inventory to identify character strengths. In the final session, the assessor provided oral and written feedback on each pupils' strengths to the parent and child. After discussion, the child and caregivers were presented with recommendations and resources on	Hope (Children's Hope scale) Self-awareness (Ego Strength Content Scale of the Behaviour Assessment System for Children) Recognition of strengths (Behavioural and Emotional Rating scale as well as interviews) Resilience (teacher report on the Resiliency Content scale of the Behaviour Assessment System for Children). Grades, attendance and conduct in school (data from school)	Analysis: A randomisation test was conducted which is a nonparametric, statistical procedure based upon probability. Findings: Students' ego strength, teacher-reported resilience and attendance did not differ from baseline to treatment. There was no improvement in grades. Although participants did not report qualitatively more strengths, their strengths index scores did increase. Treatment integrity was high. Six themes arose from social validity interviews including participants' perceived changes in teachers' behaviour or interactions with teachers, participants' perceived changes in parents' perceptions of them, gender difference in reports of self-confidence related to peers, adversity reframed as strengths, the positive effects of feeling known and

Study number, author, date and research question/aim	Participant characteristics	Method/Design	Outcome measures	Results
		how to further support their strengths. This was also discussed with one of each pupil's teacher. These teachers were given recommendations on how they could further nurture their pupils' strengths. Design: A single-subject design methodology was utilised. It used a multiple baseline, across-participants design. Students were randomly assigned to the week they would begin the intervention (due to staggered starts). Data relating to the outcome measures were taken each week for 15 weeks and again at follow-up three months later. This was collected by an independent researcher. Similarly, the teachers were blind to the stage of the SBA the pupil was at. Interviews focused on social validity and treatment integrity. Journals were also kept by the facilitator.		understood through the assessment process and an appreciation for how individuals can respond differently to treatment.
Study 5 Khanna and Singh (2019) Research aim:	Number: 372 Age: 11-13 years old Gender: 56% male	Setting: High school Intervention duration: 1 week	Emotional, social and psychological well-being (Mental health Continuum questionnaire).	Analysis: An ANCOVA was conducted for each outcome measure whilst controlling for pre-test scores.

Study number, author, date and research question/aim	Participant characteristics	Method/Design	Outcome measures	Results
To evaluate whether the widely used PPIs proposed by Seligman et al. (2005) enhance well-being and alleviate depression among Indian adolescents.	Ethnicity: Not reported Location: India Other key characteristic(s) N/A	Intervention format: Students in the SS^{new} intervention completed the VIA-YS and were given individual feedback about their signature strengths. They were asked to use their signature strengths in a new, different way each day. Research design: A randomised control study was conducted. Twelve classrooms across two schools were randomly allocated into one of six groups, five were positive psychology interventions (three good things in life, gratitude visit, you at your best, using signature strengths and using signature strengths in a new way) and one was a control group (recalling early memories). Assessment of outcome measures was conducted pre- and post-intervention.	Affect (Scale of Positive and Negative Experience and the Brief Multidimensional Students' Life Satisfaction scale). Happiness (Steen Happiness Index). Depressive symptoms (The Centre for Epidemiological Studies – Depression scale)	Findings: Using signature strengths in a new way (not using them as usual) led to improvements in psychological well-being and mental health scores compared to the 'three good things' intervention and it improved happiness scores significantly more than the 'you at your best' intervention. However, there were no significant differences between the CSI and the remaining PPIs for overall well-being, positive affect and life satisfaction.
Study 6 Moriuoto et al. (2015) Research aim: To increase the self-formation consciousness of female high school	Number: 132 Age: Average 16.6 years Gender: 100% female Location: Japan	Setting: High school Intervention duration: 1 week Intervention format: In week one, students completed the VIA-YS. In the following session, they received individualised feedback on their top	Self-formation (The Self-Formation Consciousness scale)	Analysis: A 2 × 2 mixed ANOVA was conducted. Findings: Feelings of strengths importance, utilization and awareness increased from the point of feedback to the end of the intervention.

Study number, author, date and research question/aim	Participant characteristics	Method/Design	Outcome measures	Results
students, using an intervention based on individuals' character strengths		five strengths and the intervention group was asked to use one of their strengths in a new and different way each day for one week. They were given a manual with suggestions on how each strength could be used and a record sheet. Research design: A randomised control study was conducted. A control group (n =33) were told to remember warm childhood memories every night for a week. All students completed the scale before and after the intervention. Students in the intervention group (n = 99) also completed a questionnaire about their subjective feelings towards their signature strengths after receiving feedback. They were also given a questionnaire measuring their opinions of the intervention three months after the end of the programme.	Subjective feelings of strengths (researcher-made questionnaire	Three months after the intervention ceased, 54% stated that they have tried to utilise their strengths and 12% stated they have carried on using their strengths. It was also found that 47% found it little or quite difficult to do the intervention. Reasons given for this was that it was something that they had not done before and some stated that it is not sustainable.
Study 7 Norrish (2015) Research aim:	Number: The school has approximately 1,500 students	Setting: A grammar school Character strengths implementation: Key professors in this field (Peterson	N/A	Staff members believed that working on character strengths were particularly beneficial for students with behaviour, learning or emotional

Study number, author, date and research question/aim	Participant characteristics	Method/Design	Outcome measures	Results
This case study examines how character strengths were integrated into all aspects of life at the school.	Age: 5-18 Gender: Mixed Location: Australia	and Park) stayed at the school for a month and visited again 2 years later. They helped to develop and embed the approach into the school. The 24 VIA character strengths were integrated into the school vocabulary and all these strengths are taught throughout the first five year levels. Character strengths are displayed in the school, discussed when reading books and focused on in assemblies. Students are encouraged to spot others' strengths. The school also ensures that each child is aware of their signature strengths. Students ask others for their perspectives on their signature strengths and they complete the VIA-YS. Staff also complete the survey. They then work to develop their strengths, discuss when certain strengths are helpful and reflect on how strengths can be used to overcome difficulties.		difficulties. The authors further noted that knowledge of signature strengths helped support friendships. Strengths spotting exercises improved relationships between staff and students. The VIA framework provided a shared language throughout the school. It was deemed invaluable to support students' social and emotional learning skills. It led to an appreciation of difference as well as points of connection.
Study 8 Oppenheimer et al. (2014) Research aim:	Number: 70 Age: 13-14 Gender: 46% male	Setting: Urban middle school Intervention duration: One week Intervention format: Five sessions were conducted. Students were	Well-being (EPOCH Measure of Adolescent Well-Being scale)	Analysis: Repeated measures ANOVA Findings: The intervention led to an increase in overall well-being and optimism however these gains were

Study number, author, date and research question/aim	Participant characteristics	Method/Design	Outcome measures	Results
To assess the effect of a positive psychology approach through a 5-day character strengths intervention in an urban middle school setting.	Ethnicity: Primarily Black /African American. Location: Philadelphia, USA SES: 80% receive free or reduced-cost lunch.	taught about positive psychology/ character strengths and completed the VIA-YS. Current and prior use of signature strengths were discussed and pupils' chose one signature strength to use in a new way. They also took part in lessons focusing on perseverance and hope. Pupils presented how they planned on using their strengths in the future (after the intervention). During some of the sessions, a shortened version of the "Three Good Things" exercise was conducted. Teachers were encouraged to incorporate the language and values of character strengths into their teaching. Design: A remedial class and an above-average academic performance class formed an intervention group (n = 46) and an average performing academic class became a comparison group (n = 24). Questionnaires were completed before and after the intervention, and again three months later.		not sustained over time. The intervention did not improve students' engagement, connectedness or happiness. Across all these areas, the control group's scores did not differ over time.

Study number, author, date and research question/aim	Participant characteristics	Method/Design	Outcome measures	Results
Study 9 Proctor et al. (2011) Research aim: To test the outcomes of one such program [positive psychological character strength-based intervention], aptly called 'Strengths Gym', on the life satisfaction and well-being of adolescent students.	Number: 319 Age: 12-14 Gender: 48% male Ethnicity: Primarily Caucasian SES: Lower to middle-income families. Location: The Channel Islands and Cheshire, UK Other key characteristic(s): N/A	Setting: Secondary school Intervention duration: 6 months Intervention format: The Strengths Gym programme was conducted. At the beginning of the intervention, pupils were asked to pick five strengths that describe them best from the list of 24 strengths taken from the VIA inventory. Pupils took part in strength-building exercises (to build upon their signature strengths) and strengths challenges (to learn to use the other strengths more). This was supported by the use of a workbook. Design: In the two schools that participated, classes were allocated to either an intervention group (n = 218) or a control group (n = 101) who continued with business as usual. All students completed questionnaires before and after the intervention.	Global life satisfaction (The Students' Life Satisfaction scale) Affect (amended version of the Positive and Negative Affect Schedule) Self-esteem (Rosenberg Self-Esteem scale)	Analysis: ANCOVA which controlled for baseline scores, the school attended, year group, age and gender. Findings: When controlling for co-variates, the intervention group had significantly increased life satisfaction scores over time than the comparison group. For positive affect, there was significance at the 10% level. There was no impact of group on negative affect or self-esteem.
Study 10 Quinlan et al. (2015) Research question:	Number: 196 Age: 8-12 Gender: 55% male	Setting: One intermediate school and five primary schools Intervention duration: 6 weeks	Positive and negative affect (International Positive and Negative Affect Schedule-Short form).	Analysis: A mixed linear model was conducted and baseline measures, gender, age, school year and SES were controlled for.

Study number, author, date and research question/aim	Participant characteristics	Method/Design	Outcome measures	Results
The study aimed to examine the effect of a classroom-based strengths intervention on class cohesion and friction, relatedness, engagement, well-being and strengths use	Ethnicity: 68.9% New Zealand European SES: Low to middle SES Location: South Island of New Zealand Other key characteristic(s): N/A	Intervention format: The Awesome Us programme consists of six sessions delivered once a week and a review session was conducted a month later. The sessions involved spotting their strengths, learning more about their strengths and how they will use their strengths. Design: Students completed online questionnaires pre-intervention and post-intervention (three months later). One class from each school became an intervention group (n = 140) and the remaining three classes became a control (n = 56).	Life satisfaction (Students' Life Satisfaction scale) Classroom engagement (The student report of the Engagement Versus Disaffection with Learning measure). Classroom cohesion and friction (My Class Inventory) Intrinsic need satisfaction (The Children's Intrinsic Needs Satisfaction Scale) Strengths use (The Strengths Use scale)	Findings: The intervention led to significantly lower scores on class friction and higher scores for positive affect, relatedness, autonomy, strength use, classroom engagement and classroom cohesion compared to the control group. No differences were found for negative affect, competence or life satisfaction.
Study 11 Seligman et al. (2009) Research question: Can well-being be taught to school children?	Number: 347 Age: 13-14 Location: USA No other demographic information stated	Setting: High school Intervention duration: One academic year Intervention format: The aims of the intervention (known as the Strath Haven positive psychology curriculum) is to help students to identify their signature strengths and	Details are not reported however they measured students' strengths, grades, behaviour, social skills, enjoyment in school, depression and anxiety as well as attendance at extra-curricular activities.	Analysis: Unreported Findings: The programme increased self-reported enjoyment and engagement in school. Teachers' measures indicated that the intervention improved strengths related to learning (e.g. love of learning, curiosity and creativity). This

Study number, author, date and research question/aim	Participant characteristics	Method/Design	Outcome measures	Results
		increase their use of these strengths. It consists of approximately 20-25 lessons, each of which is 80 minutes long. These are spread across the academic year. Each lesson involves a discussion of character strengths, an in-class activity, a homework task and a journal reflection. Lessons include students identifying their signature strengths (via the VIA-YS), identifying strengths in themselves and others, discussions on using strengths to combat challenges and applying their strengths in new ways. Design: Students were randomly assigned to an intervention class or a control group class. Students, parents and teachers completed pre- and post-intervention questionnaires. Teachers were blind to which group the students were in as they did not facilitate the programme.		appeared to be maintained over time. The effects were particularly strong in non-honor classes. Teacher and parent questionnaires reveal improved social skills as a result of the intervention. However, the intervention did not improve student reported depression and anxiety, character strengths and attendance at extra-curricular activities. Increased achievement was seen within non-honor classes.
Study 12 Velazquez (2015) Research questions:	Number: 23 Age: 16-18 Location: Florida, USA Other key characteristic(s)	Setting: Maritime academy and high school Intervention duration: One month	Social skills (The Post Character Strengths Survey of Instructor's Perceptions for Students: Likert Scale measurement)	Analysis: Quantitative scores were examined through summary statistics and percentages. The researcher highlighted key messages from their discussion with the facilitator.

Study number, author, date and research question/aim	Participant characteristics	Method/Design	Outcome measures	Results
What are the components of a secondary character education program that makes it unique for secondary students? What impact will the secondary character education program used in this study have on the social skills and character strengths of secondary students?	Students were selected as they are deemed "at-risk" as they had failed one or more tests required for graduation. School-level demographics Gender: 71% male Ethnicity: 74% White, 12% Hispanic, 10% Black and 4% Other SES: 42% receive free or reduced-cost lunches.	Intervention format: Students completed the VIA-YS and were then given a handout that explained all the strengths. Following this, there were opportunities for discussion. Students were encouraged to use their strengths at home and school. They were also told that throughout lessons, they would be routinely asked to identify one or more of their strengths that relates to the content of the lesson. School staff (including the principal and the programme facilitator), as well as the students' parents, received professional development or training by the researcher to support the students to use their character strengths inside and outside of school. Design: In the quantitative aspect of the study, the intervention facilitator completed a Likert questionnaire which measured perceived improvement in social skills after the intervention. The intervention facilitator also met with each student to gather their views of the	Qualitative data on perceptions of components of the education programme and participants' identification and use of their character strengths.	Findings: The facilitator described the program as beneficial and easy to integrate into the classroom. They also reported that students were more engaged. Pupils believed the intervention led to an increased understanding of themselves and the academic goals they wanted, better self-confidence, visualisations of themselves as successful, better decision making and increased motivation to improve social skills. Quantitative data supports this as 13 out of 16 students increased their social skills and 15 identified and effectively used their individual character strengths.

Study number, author, date and research question/aim	Participant characteristics	Method/Design	Outcome measures	Results
		programme. The facilitator fed this information back to the researcher. The facilitator was also interviewed to discuss the students' use of their strengths and which aspect of the intervention was most effective.		
Study 13 Vuorinen et al. (2019) Research aim: They sought to detect whether social participation and cohesion could be promoted via teaching the students to intentionally look for the good in each other.	Number: 253 Age: 9-13 years Gender: 47% male intervention group and 37% male control group Ethnicity and SES: All classrooms were described as inclusive, multicultural and heterogeneous in multiple ways. Location: Finland Other key characteristic(s): 17 students in the intervention group had a variety of special needs	Setting: Elementary school Intervention duration: 16 weeks Intervention format: The intervention was based upon the Strengths Gym programme (Proctor et al., 2011) but adapted to make it more applicable for a Finnish classroom. The programme was split into 16 weekly, 45-minute lessons. Firstly, students completed the VIA-YS, explored their results and discussed ways to use and develop these strengths. They then learned about exploring others' signature strengths. The further 13 lessons each focused on a different character strength. In these lessons, they learned about the strength, completed relevant activities and were given a homework task.	Social skills (Empathy and Aggressive behaviour subscales of the Multi-Assessment of Social Competence scale) Grit (Gris-S scale split into consistency of interest and perseverance of effort) Strengths use (Strengths Use scale) Global happiness (Subjective Happiness scale) School-related happiness (School Children's Happiness Inventory)	Analysis: The results of 16 students were excluded as they did not complete both pre- and post-test measures due to absence. These were said to be random. Demographic information (gender and number of close friends) was controlled for. Discourse analysis was conducted for the interviews. Findings: The group of students with SEN who took part in the intervention scored higher in Grit consistency and engagement compared to the other groups. The intervention group as a whole improved their ability to support each other and to name strengths in others. The intervention did not affect happiness or effort. The teachers expressed that the intervention led to increased group cohesion and classroom spirit. Six

Study number, author, date and research question/aim	Participant characteristics	Method/Design	Outcome measures	Results
		Design: Teachers who could attend the training became an intervention group (n = 175). The further 4 classes became matching, parallel control classes (n = 78). The participants' gender, number of close friends, age and class level did not statistically differ between the groups. Teachers received training as well as coaching throughout and opportunities to share amongst peers. It was a mixed-methods study. Quantitative information was gathered pre- and post-intervention and qualitative information was gathered from the interviews of seven teachers.	Learning behaviours (Schoolwork Engagement Inventory and Mindset scale)	discourses were revealed: praise, well-being, good interaction, the significance of encounters, the need for additional education and the discourse of doubt and challenges.

Note. SES refers to socio-economic status.

Appendix G Qualitative quality assurance checklist

CASP Qualitative Checklist (Critical Appraisal Skills Programme, 2018)

1. Was there a clear statement of the aims of the research?
2. Is a qualitative methodology appropriate?
3. Was the research design appropriate to address the aims of the research?
4. Was the recruitment strategy appropriate to the aims of the research?
5. Was the data collected in a way that addressed the research issues?
6. Has the relationship between researcher and participants been adequately considered?
7. Have ethical issues been taken into consideration?
8. Was the data analysis sufficiently rigorous?
9. Is there a clear statement of findings?

Appendix H Adapted quantitative quality assurance checklist

Table 12

Items Adapted on the Quantitative Quality Assurance Checklist and the Rationale for Adaption

Item	Rationale
8. Have all important adverse events that may be a consequence of the intervention been reported?	This is not a suitable item as this review is not focused upon health research. It assumes that there will be adverse effects.
13. Were the staff, places, and facilities where the patients were treated, representative of the treatment the majority of patients receive?	This is not a suitable item as this review is not focused upon health research. This item was renamed to 'Was the intervention conducted by school staff without the continued support of the researcher?'
24. Was the randomised intervention assignment concealed from both patients and health care staff until recruitment was completed and irrevocable?	This is not a suitable item as this review is not focused upon health research. It is not possible to conceal the intervention carried out.
27. Did the study have sufficient power to detect a clinically important effect where the probability value for a difference being due to chance is less than 5%?	As these studies are not investigating health interventions, it is not possible to determine what constitutes a "clinically important" effect. Therefore, the item is adapted to "Did the study report that they had sufficient power to detect whether a difference being due to chance is less than 5%?"

Below is the full adapted Downs and Black (1998) checklist:

Reporting

1. Is the hypothesis/aim/objective of the study clearly described? (Maximum 1 point)
2. Are the main outcomes to be measured clearly described in the Introduction or Methods section? (Maximum 1 point)
3. Are the characteristics of the patients included in the study clearly described? (Maximum 1 point)
4. Are the interventions of interest clearly described? (Maximum 1 point)
5. Are the distributions of principal confounders in each group of subjects to be compared clearly described? (Maximum 2 points)
6. Are the main findings of the study clearly described? (Maximum 1 point)
7. Does the study provide estimates of the random variability in the data for the main outcomes? (Maximum 1 point)
8. Have the characteristics of participants lost to follow-up been reported? (Maximum 1 point)
9. Have actual probability values been reported (e.g., 0.035 rather than <0.05) for the main outcomes except where the probability value is less than 0.001? (Maximum 1 point)

External validity

10. Were the subjects asked to participate in the study representative of the entire population from which they were recruited? (Maximum 1 point)
11. Were those subjects who were prepared to participate representative of the entire population from which they were recruited? (Maximum 1 point)

12. Was the intervention conducted by school staff without the continued support of the researcher? (Maximum 1 point)

Internal validity - Bias

13. Was an attempt made to blind those measuring the main outcomes of the intervention? (Maximum 1 point)
14. Was an attempt made to blind study subjects to the intervention they have received? (Maximum 1 point)
15. If any of the results of the study were based on “data dredging”, was this made clear? (Maximum 1 point)
16. In trials and cohort studies, do the analyses adjust for different lengths of follow-up of patients, or in case-control studies, is the time period in the intervention and outcome the same for cases and controls? (Maximum 1 point)
17. Were the statistical tests used to assess the main outcomes appropriate? (Maximum 1 point)
18. Was compliance with the intervention/s reliable? (Maximum 1 point)
19. Were the main outcome measures used accurate (valid and reliable)? (Maximum 1 point)

Internal validity – Confounding (selection bias)

20. Were the patients in different intervention groups (trials and cohort studies) or were the cases and control (case-control studies) recruited from the same population? (Maximum 1 point)
21. Were study subjects in different intervention groups (trials and cohort studies) or were the cases and control (case-control studies) recruited over the same period of time? (Maximum 1 point)
22. Were study subjects randomised to intervention groups? (Maximum 1 point)
23. Was there adequate adjustment for confounding in the analyses from which the main findings were drawn? (Maximum 1 point)
24. Were losses of patients to follow-up taken into account? (Maximum 1 point)

Power

25. Did the study report that they had sufficient power to detect whether a difference being due to chance is less than 5%? (Maximum 1 point)

Appendix I Quality assurance descriptors

Table 13

Quality Assessment Descriptors

Subtest score (percentage of total score)	Descriptor
<25%	Poor
25-50%	Fair
50%-75%	Good
>75%	Excellent

Appendix J Qualitative quality assurance results

Table 14

Qualitative Quality Assurance Results

Study number	Item number									Total (out of 9)	QA descriptor	Notes
	1	2	3	4	5	6	7	8	9			
3	1	1	1	1	0	0	1	0	1	6	Good	There was triangulation with quantitative findings. The group was made to be diverse in gender and ethnicity. It is not clear if saturation was met. The relationship between the researcher and participants hasn't been fully considered. The process of analysis has not been described and participants' responses to each section of the topic guide are described rather than analysed for themes. The effect of the researcher's role, bias and influence is not considered.
4	1	1	1	1	1	1	1	0	1	8	Excellent	The relationship between the researchers and participants was carefully considered. Ethics were taken into account. It is not clear how the data was analysed. Participants' responses to each question were summarised.
12	1	1	0	0	0	0	1	0	1	4	Fair	The researcher has not justified why they chose the particular research design. The researcher explains why the maritime academy was chosen (due to their increased flexibility to implement the curriculum) but this is not generalisable to secondary education as a whole. It does not explain why the 16-18 age group was picked as this does not represent the range of secondary education. There are no details about the five participants that dropped out of the study. Data was collected from the one teacher who conducted the curriculum and this appears to have been done informally over email or telephone discussion rather than using a topic guide or semi-structured interview. Students' views were discussed with the facilitator who then passed their views to the researcher and therefore the accuracy of this

												information is unclear. Researcher and facilitator bias is not considered. The research is over generalised and the researcher does acknowledge that this is a very specialised setting. It is also acknowledged that one month is not a long enough follow up.
13	1	1	1	0	1	1	0	1	1	7	Excellent	Teachers put themselves forward to be involved in the study and may already have positive views of the intervention. Whilst not described for the quantitative data, the research question was stated for the qualitative research. The researchers planned the interviews but they were conducted and analysed by an independent individual. Ethical information within the study focused on the quantitative research.

Appendix K Quantitative quality assurance results

Table 15

Quantitative Quality Assurance Results for Reporting Subscale

Study number	Item number									Total (out of 10)	Notes
	1	2	3	4	5	6	7	8	9		
1	1	1	1	1	2	1	1	1	1	10	Reporting of many aspects of the study are detailed.
2	1	1	1	1	0	1	1	0	1	7	Distributions of confounders are not described. It is not reported why 21 of the eligible students were not available for the whole study.
3	1	1	1	1	1	1	1	0	1	8	Only gender and ethnicity demographic information was collected. There is little detail about participants lost to follow up.
4	1	1	1	1	1	1	1	1	1	9	Each participant is described in detail. The study's aims, outcome measures and intervention are clearly stated.
5	1	1	1	1	0	1	1	1	1	8	It was stated that the groups did not differ in pre-test outcome scores, but other confounding variables are not described.
6	1	1	0	1	0	1	1	1	0	6	Participants are not described in great detail. In the intervention group, five out of 104 students were lost to follow-up and two in the control group were lost to follow up. Actual probability values are not reported.
8	1	1	1	1	1	1	1	1	1	9	The distribution of confounders is not described. There were no losses to follow-up.
9	1	1	1	1	0	1	1	1	1	8	Participants lost to follow-up were found not to differ from included participants.
10	1	1	1	1	2	1	1	1	1	10	Only 5% of participants lost to follow up so are not described.

11	0 0 0 0 0 1 0 0 0	1	An aim or hypothesis is not clearly described. The outcomes, confounders or characteristics of participants are not described. The intervention is described but with little detail.
13	1 1 1 1 1 1 1 1 1	9	Those lost to follow up were random.

Table 16

Quantitative Quality Assurance Results for External Validity Subscale

Study number	Item number			Total out of 3)	Notes
	10	11	12		
1	0	0	0	0	The aim of the study does not highlight that the intervention is being run with at-risk pupils and is being generalised to adolescents in general. Participants were recruited via open parent registration. The intervention was delivered by the first author and trained members of staff from the organisation who provides the intervention.
2	0	1	0	1	The demographics of the school were reported but not the study sample. Pupils were all from one school and this school does not represent the adolescent population. The facilitator was picked due to their interest in positive psychology. All eligible classes took part in the intervention.
3	0	1	0	1	It is unclear how the school was recruited but the demographics of the sample represent the wider demographics of the school. The author delivered the intervention.
4	0	0	0	0	Only seven participants were included in the study. A total of 18 were approached. The intervention was conducted by an independent researcher however they were trained in child assessment and were not school staff.
5	0	0	0	0	Participants were from an urban area of India and the findings cannot be generalised to the entire Indian population. The paper does not state how many/if any participants chose not to participate. The researchers were involved in the facilitation of the intervention.
6	0	0	0	0	It is unclear how participants were recruited. The intervention appears to have been conducted by the researcher.
8	0	0	0	0	It is unclear how the school was recruited and whether this is representative. The demographics of the sample are representative of the larger population however the intervention classes were chosen. The lead researcher facilitated the intervention.
9	0	1	1	2	The schools are not representative of the larger population. All students within the specified year groups participated. Parental consent was not deemed necessary. Teachers implemented the intervention and received no further training or coaching. They only received the instructions within the programme materials.

10	0	1	0	1	The schools tended to have a higher-than-average number of students with low socioeconomic status. Three out of 200 chose not to participate and therefore the study sample can be deemed comparable to the population that were asked to participate. The lead author delivered the intervention.
11	0	1	0	1	It is not known whether these classes are representative of the population. It is not clear whether recruitment followed an opt-in or opt-out procedure. There are no details of who conducted the intervention.
13	0	0	0	0	It is not recorded as to whether the classrooms are representative of the larger population. There is no indication as to whether those who chose to take part in the study were comparable to those who did not opt-in. The researcher continued to support the teacher to facilitate the intervention through coaching which is not representative of how the intervention would be facilitated outside the research.

Table 17

Quantitative Quality Assurance Results for Internal Validity (Bias) Subscale

Study number	Items							Total (out of 7)	Notes
	13	14	15	16	17	18	19		
1	0	0	1	1	1	1	1	5	The overall treatment fidelity was good however, one of the sessions on character strengths was cut in half due to time restraints.
2	0	0	1	1	1	0	1	4	Compliance with the intervention was not reported. Most measures had good reliability scores. For the subscale that did not, a second analysis was completed with a subset of the data. The teacher running the intervention group had an interest in positive psychology.
3	0	0	1	1	1	1	1	5	Participants' adherence to the activities was assessed as the final session focused on feeding back how they completed the activities.
4	0	1	1	0	1	1	1	5	Teachers were blind to what stage of the intervention the pupils were at. It is not clear whether follow-up was also staggered.
5	0	0	1	1	1	0	1	4	The first author ran the intervention and collected the data. Although attempts were made to promote pupils' engagement with the activities, it was not reported whether this was successful and whether they carried out the intervention tasks. The reliability of the outcome measures are reported at a general level and not specific to this study.
6	1	0	1	1	1	1	0	5	Attempts were made to avoid the exchanging of information between the intervention and control group. Compliance with the intervention was measured. The reliability and validity of the outcome measures were not reported.
8	1	0	1	1	1	1	0	5	The students were encouraged not to share the details of their participation. The measure of well-being was currently in development and so no reliability data was reported. The last session involved students feeding back how they completed their task and so encouraged completion of the intervention activities.

9	0	0	1	1	1	0	1	4	Teachers completed an average of 23.25% of the programme. It was expected that they would complete around 50%. Students were required to present how they used their signature strengths which showed they had adhered to the intervention. Students were told this study was part of a trial to see if the intervention should become part of the curriculum.
10	0	0	1	1	1	0	1	4	The first author ran the intervention and two teachers helped facilitate during small group activities. The author developed the intervention. Although pupils identified strengths they could use to reach their goal, it is not known whether this was carried out.
11	0	0	0	1	0	0	0	1	No information is given about the analysis or the outcome measures. Thus, an 'unable to determine' score is given for the majority of items.
13	0	0	1	1	1	0	1	4	No blinding occurred. Compliance with the intervention was not detailed but it was stated that teachers had a part to play in ensuring the intervention fit. Outcomes measures were referenced and Cronbach's alpha is stated for most scales.

Table 18

Quantitative Quality Assurance Results for Internal Validity (Confounding/Selection Bias)

Study number	Item number					Total (out of 5)	Notes
	20	21	22	23	24		
1	1	1	0	1	1	4	There was not random allocation. The pupils whose parents signed them up quickly were more likely to get onto the intervention. Those whose parents signed up later were put on the waiting list. There were no losses to follow up. There were some missing data which was accounted for using multiple imputation.
2	1	1	1	0	0	3	There was random allocation to group. It is not explained why 21 of the eligible students were not part of the study.
3	1	1	1	0	0	3	Classes were randomly assigned to the intervention group. Data on gender and ethnicity were examined but not controlled for. Losses to follow-up were not detailed.
4	N/A	N/A	N/A	N/A	N/A	N/A	There were no controls in this study and only descriptive data was collected.
5	1	1	1	0	1	4	No confounders were controlled for. Only time one scores were entered as a covariate.
6	1	1	0	1	1	4	Both groups were from the same school. It is not clear whether they were randomly assigned. There were no significant differences between the groups' pre-test scores on the outcome measures. Statistics were used to account for missing data.
8	1	1	0	0	1	3	Allocation to intervention or control group was not randomised. The highest and lowest ability groups were chosen for the intervention and the middle ability group became a control. There was no adjustment for confounding variables. There were no losses to follow up.
9	1	1	0	1	1	4	Pre-test scores, sex, age, school and year group were controlled for. Analyses were conducted which identified no differential attrition by condition. Differences in included data and lost participants data on baseline scores, age, school and year did not have a significant interaction with experimental condition.

10	1	1	0	1	1	4	Random assignment did not occur. Each school requested an intervention group and the school principals nominated classes to conditions. Their analysis controlled for the baseline measures, gender, age, school year level and SES.
11	0	1	1	0	0	2	There were no details on losses to follow-up and how classes were recruited.
13	1	1	0	1	0	3	There was no random assignment to groups. Confounding variables were taken into account within the analysis.

Table 19

Quantitative Quality Assurance Results for Power Subscale

Study number	Item number	Total (out of 1)	Notes
	25 (out of 5)		
1	0	0	Did not have sufficient power for all tests
2	1	1	The study had sufficient power
3	0	0	Not reported
4	0	0	Not reported
5	0	0	Not reported
6	0	0	Not reported
8	0	0	Not reported
9	0	0	Not reported
10	0	0	Did not have sufficient power
11	0	0	Not reported
13	0	0	Did not have sufficient power

Table 20

Total Quality Assessment Scores

Study number	Reporting score (out of 10)	External validity score (out of 3)	Internal validity - Bias score (out of 7)	Internal validity – Confounding score (out of 5)	Power score (out of 1)	Total (out of 26)
1	10	0	5	4	0	19
2	7	1	4	3	1	16
3	8	1	5	3	0	17
4	9	0	5	N/A	0	14 (out of 21)
5	8	0	4	4	0	16
6	6	0	5	4	0	15
8	9	0	5	3	0	17
9	8	2	4	4	0	18
10	10	1	4	4	0	19
11	1	1	1	2	0	5
13	9	0	4	3	0	16

Table 21

Total Quality Assessment Scores as Descriptives

Study number	Reporting score	External validity	Internal validity - Bias	Internal validity – Confounding	Power	Overall
1	Excellent	Poor	Good	Excellent	Poor	Good
2	Good	Fair	Good	Good	Excellent	Good
3	Excellent	Fair	Good	Good	Poor	Good
4	Excellent	Poor	Good	N/A	Poor	Good
5	Excellent	Poor	Good	Excellent	Poor	Good
6	Good	Poor	Good	Excellent	Poor	Good
8	Excellent	Poor	Good	Good	Poor	Good
9	Excellent	Good	Good	Excellent	Poor	Good
10	Excellent	Fair	Good	Excellent	Poor	Good
11	Poor	Fair	Poor	Fair	Poor	Poor
13	Excellent	Poor	Good	Good	Poor	Good

Note. Study 12 was evaluated using only the CASP and not this framework, despite it being classed as mixed methods. This is because the author states that the study is highly qualitative and no statistical analysis was conducted. One study is not included in either checklist as it is a whole-school case study (Norrish, 2015).

Appendix L Recruitment templates

Gatekeeper email

Dear [headteacher name],

I am currently studying to be an educational psychologist at the University of Southampton. As part of my thesis, I am investigating school staff's attributions of children's behaviour and how such behaviour affects staff expectations for pupils' future.

I was hoping you might be willing to distribute the link to my study to your staff via the email written below. It is a short survey which will take only 5-10 minutes and can be done at any time. The study is anonymous and your school or staff will not be identifiable. For more details of this research, I have attached an information sheet to this email to help inform your decision.

If you have any questions, please let me know. Thank you for your time.

Louise Boeckmans
Trainee educational psychologist

Initial recruitment email to be distributed to school staff

Dear Sir/Madam,

I am a student on the Educational Psychology doctorate course at the University of Southampton. As part of my course I am conducting the following study:

"An investigation into school staff's attributions of behaviour and future expectations for pupils"

You are invited to take part in this short, online survey. It should take between 5 and 10 minutes and you can enter a prize draw to win one of five £20 amazon vouchers. Your participation can help to improve our understanding in this area.

If you are interested, please click on the link below for more information.

LINK

Many thanks,

Louise Boeckmans
Trainee educational psychologist

Social media recruitment post

I am a student on the Educational Psychology doctorate course at the University of Southampton. As part of my course, I am conducting the following study:

"An investigation into school staff's attributions of behaviour and future expectations for pupils"

This is research consists of a short, 5-10 minute online survey and you can enter a prize draw to win one of five £20 amazon vouchers.

If you are a teacher, teaching assistant, support assistant or a member of the senior leadership team within a state, mainstream school, you are invited to take part in this short survey.

Your participation can help to improve our understanding in this area.

If you are interested, please click on the link below for more information.

LINK

Thank you,

Louise Boeckmans
Trainee educational psychologist

Appendix M Inclusion and exclusion criteria for participant recruitment

Table 22

Inclusion and Exclusion Criteria used for Participant Recruitment

Study Characteristic	Inclusion Criteria	Exclusion Criteria
Population	Classroom staff including teachers, teaching assistants and senior leadership staff	School staff who do not work in classrooms
Setting	Mainstream primary or secondary schools	Special and independent schools

Appendix N Vignettes

Vignette 1: Negatively framed with ADHD label

1. **How physically active is the child in class?**

James is fidgety and always squirming in his seat. Often, he will move around the classroom, talking to others and distracting them.

2. **How quick is the child to respond to events in class?**

James finds it difficult to await his turn and often interrupts me or other children.

3. **How does the child give and maintain focus in class?**

James finds it difficult to maintain his attention on one task and is easily distracted.

4. **How does the child respond to instructions?**

James doesn't listen and frequently fails to follow instructions as asked.

5. **Any other information?**

James has a diagnosis of attention deficit hyperactivity disorder (ADHD).

Vignette 2: Negatively framed without ADHD label.

1. **How physically active is the child in class?**

James is fidgety and always squirming in his seat. Often, he will move around the classroom, talking to others and distracting them.

2. **How quick is the child to respond to events in class?**

James finds it difficult to await his turn and often interrupts me or other children.

3. **How does the child give and maintain focus in class?**

James finds it difficult to maintain his attention on one task and is easily distracted.

4. **How does the child respond to instructions?**

James doesn't listen and frequently fails to follow instructions as asked.

Vignette 3: Positively framed with ADHD label

1. **How physically active is the child in class?**

James is an active child and he is always on the go. Often, he will move around the classroom, talking to others about his imaginative ideas.

2. **How quick is the child to respond to events in class?**

James is eager to share his ideas in class and is never shy or hesitant to have a go at answering a question.

3. **How does the child give and maintain focus in class?**

James is able to shift his attention between many tasks at once.

4. **How does the child respond to instructions?**

When I give instructions to the class, James often comes up with alternative, creative approaches I would not have thought of.

5. **Any other information?**

James has a diagnosis of attention deficit hyperactivity disorder (ADHD).

Vignette 4: Positively framed without ADHD label

1. **How physically active is the child in class?**

James is an active child and he is always on the go. Often, he will move around the classroom, talking to others about his imaginative ideas.

2. **How quick is the child to respond to events in class?**

James is eager to share his ideas in class and is never shy or hesitant to have a go at answering a question.

3. **How does the child give and maintain focus in class?**

James is able to shift his attention between many tasks at once.

4. **How does the child respond to instructions?**

When I give instructions to the class, James often comes up with alternative, creative approaches I would not have thought of.

Appendix O Future life satisfaction scale

You will now be asked to complete some questions about James.

Having considered James' current behaviours, we would like to know your thoughts about what you expect James' life to be like when he is 18. These six questions ask about your views of how satisfied James will be with different areas of his life. Tick the best answer for each. It is important to know what you really think, so please answer the question the way you ***really*** feel, not how you think you should feel. This is not a test. There are no right or wrong answers.

At age 18, how satisfied do you believe James will be with his **family life**?

In thinking about your answer, consider such things as how well you believe James will get on with his parents and siblings, whether you think he will like spending time at home with them and how he will feel his family compares to other families.

- Extremely satisfied
- Moderately satisfied
- Slightly satisfied
- Neither satisfied nor dissatisfied
- Slightly dissatisfied
- Moderately dissatisfied
- Extremely dissatisfied

At age 18, how satisfied do you believe James will be with his **friendships**?

In thinking about your answer, consider such things as: how you believe James might feel about spending time with his friends and how his friends will treat him.

- Extremely satisfied
- Moderately satisfied
- Slightly satisfied
- Neither satisfied nor dissatisfied
- Slightly dissatisfied
- Moderately dissatisfied
- Extremely dissatisfied

At age 18, how satisfied do you believe James will be with **his time in education**?

In thinking about your answer, consider such things as how you believe James might have felt about school, whether he wanted to go to school and whether he felt he learnt a lot.

- Extremely satisfied
- Moderately satisfied
- Slightly satisfied
- Neither satisfied nor dissatisfied
- Slightly dissatisfied
- Moderately dissatisfied
- Extremely dissatisfied

At age 18, how satisfied do you believe James will be with **himself as a person**?

In thinking about your answer, consider such things as how you believe James might feel about his appearance, whether he feels he is liked by others and whether he likes himself as a person.

- Extremely satisfied
- Moderately satisfied
- Slightly satisfied
- Neither satisfied nor dissatisfied
- Slightly dissatisfied
- Moderately dissatisfied
- Extremely dissatisfied

*At age 1*8, how satisfied do you believe James will be with **where he lives**?

In thinking about your answer, consider such things as how you believe James might feel about the area he lives in and his home.

- Extremely satisfied
- Moderately satisfied
- Slightly satisfied
- Neither satisfied nor dissatisfied
- Slightly dissatisfied
- Moderately dissatisfied
- Extremely dissatisfied

*At age 1*8, how satisfied do you think James will be **overall**?

- Extremely satisfied
- Moderately satisfied
- Slightly satisfied
- Neither satisfied nor dissatisfied
- Slightly dissatisfied
- Moderately dissatisfied
- Extremely dissatisfied

Appendix P Adapted CHABA scale

Below is a behaviour incident report written by James' teacher:

Behaviour Report

Yesterday, James and another boy were arguing in my classroom. At the end of the lesson, I noticed that James had not done any of his work. Before I could speak to him, James had walked out the classroom.

Consider how likely it is that the following statements are reasons for James behaving in the way described above. You have been given very little information compared to that you might have if you worked with James. Therefore, simply think about the most likely reasons for someone like James behaving in this way.

Please give your response to each of the possible reasons and indicate your response by ticking the appropriate point on the scale

	Very unlikely (1)	Unlikely (2)	Equally likely/unlikely (3)	Likely (4)	Very likely (5)
1. He was given things to do that were too difficult for him	○	○	○	○	○
2. He was physically ill	○	○	○	○	○
3. He did not like the bright lights in the classroom.	○	○	○	○	○
4. He was tired	○	○	○	○	○
5. He could not cope with high levels of stress	○	○	○	○	○
6. The classroom was too crowded with people	○	○	○	○	○
7. He was bored	○	○	○	○	○
8. Something he had eaten or drunk	○	○	○	○	○
9. He was unhappy	○	○	○	○	○
10. He did not get something that he wanted	○	○	○	○	○
11. He found the physical classroom environment unpleasant	○	○	○	○	○
12. He enjoys this	○	○	○	○	○
13. He was in a bad mood	○	○	○	○	○
14. The humidity level in the classroom made him feel uncomfortable	○	○	○	○	○
15.He was worried about something	○	○	○	○	○
16. There was some biological process happening in his body	○	○	○	○	○
17. His surroundings were too warm/cold	○	○	○	○	○
18. He wanted something	○	○	○	○	○
19. He was angry	○	○	○	○	○
20. There was nothing else for him to do	○	○	○	○	○
21. The classroom was too noisy	○	○	○	○	○
22. He felt let down by somebody	○	○	○	○	○

23. He experiences physical difficulties	○	○	○	○	○
24. The classroom was too small	○	○	○	○	○
25. He was left to work on his own	○	○	○	○	○
26. He was hungry or thirsty	○	○	○	○	○
27. He was frightened	○	○	○	○	○
28. Somebody he dislikes was nearby	○	○	○	○	○
29. People did not talk to him very much	○	○	○	○	○
30. He wanted to avoid uninteresting tasks	○	○	○	○	○
31. He had been inside for too long	○	○	○	○	○
32. He does not get on with the other pupil	○	○	○	○	○
33. He fell out with his friends at lunchtime	○	○	○	○	○
34. He had an argument with his parents in the morning	○	○	○	○	○
35. He does not get on well with his class teacher	○	○	○	○	○
36. He does not get on well with other pupils	○	○	○	○	○
37. He had a disagreement with the other pupil earlier in the day	○	○	○	○	○
38. He was upset because he got into trouble with his teacher that day	○	○	○	○	○
39. His parents don’t give him much attention	○	○	○	○	○
40. He did not feel a good sense of connection with anyone	○	○	○	○	○

Appendix Q Adapted items in CHABA scale

The wordings of the items below were adjusted to make them suitable to the environment of the study (i.e., schools).

Table 23

Items Adapted in the Challenging Behaviour Attributions Scale

Item Number	Original wording	Adapted wording
3	Because she/he does not like bright lights	He did not like the bright lights in the classroom.
6	Because her/his house is too crowded with people	The classroom was too crowded with people
9	Because of the medication that she/he is given	Something he had eaten or drunk
11	Because she/he lives in unpleasant surroundings	He found the physical classroom environment unpleasant
14	Because high humidity makes her/him uncomfortable	The humidity level in the classroom made him feel uncomfortable.
21	Because she/he lives in a noisy place	The classroom was too noisy
23	Because she/he is physically disabled	He experiences physical difficulties
24	Because there is not very much space in her/his house to move around in	The classroom was too small
25	Because she/he gets left on her/his own	He was left to work on his own
31	Because she/he does not go outdoors very much	He had been inside for too long

Appendix R Demographic questionnaire

Please select your job title:

Headteacher or deputy headteacher	
SENCo/Inclusion lead	
Other member of senior leadership	
Class teacher	
Teaching assistant/Teaching support assistant/Learning support assistant	
Other	

If other, please state job title: _____

How many years have you worked in schools (within classroom-based roles):

Less than 1 year	
1 – 5 years	
6 – 10 years	
11 – 20 years	
21 – 30 years	
More than 30 years	

What setting do you work in?

(Note: if you work within a first or middle school, please select based upon the year group you work in)

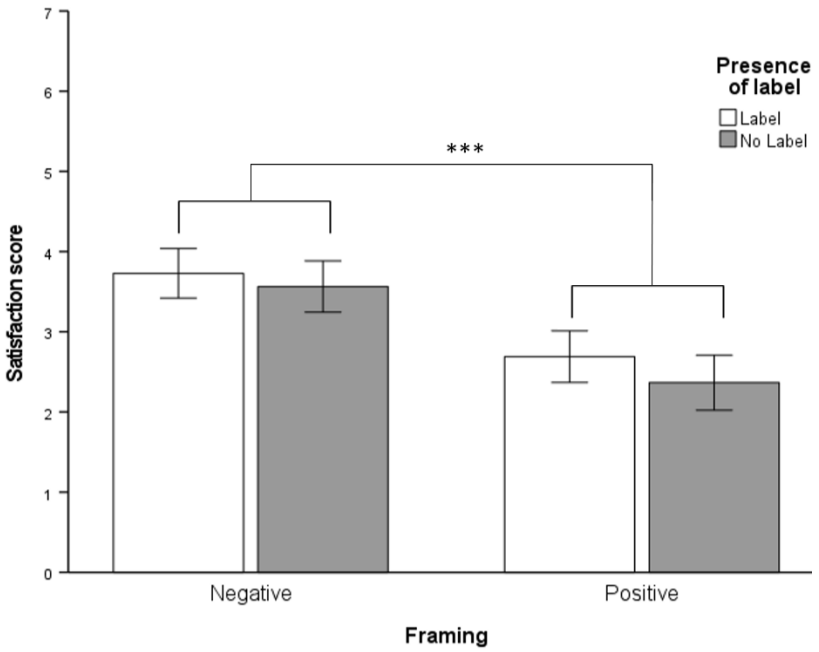
Mainstream state primary school	
Mainstream state secondary school	
Primary or secondary special school	
Private/Independent primary school	
Private/Independent secondary school	

Appendix S Future life satisfaction scale graphs

The following graphs demonstrate the results regarding each subscale of the FLSS.

Figure 4

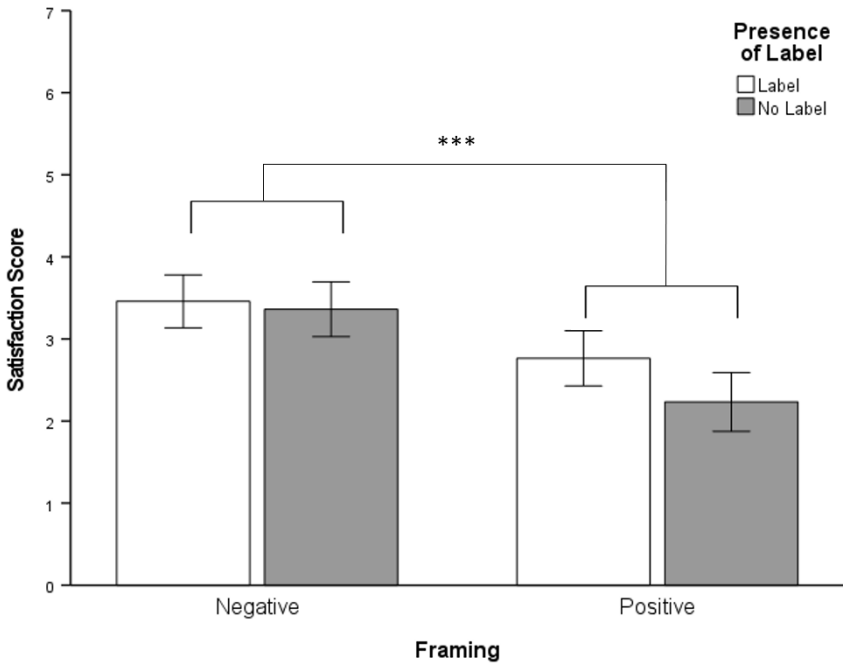
Life Satisfaction Scores Within Each Group for Family Subscale



Note. *** p <.001. Error bars represent the 95% confidence interval.

Figure 5

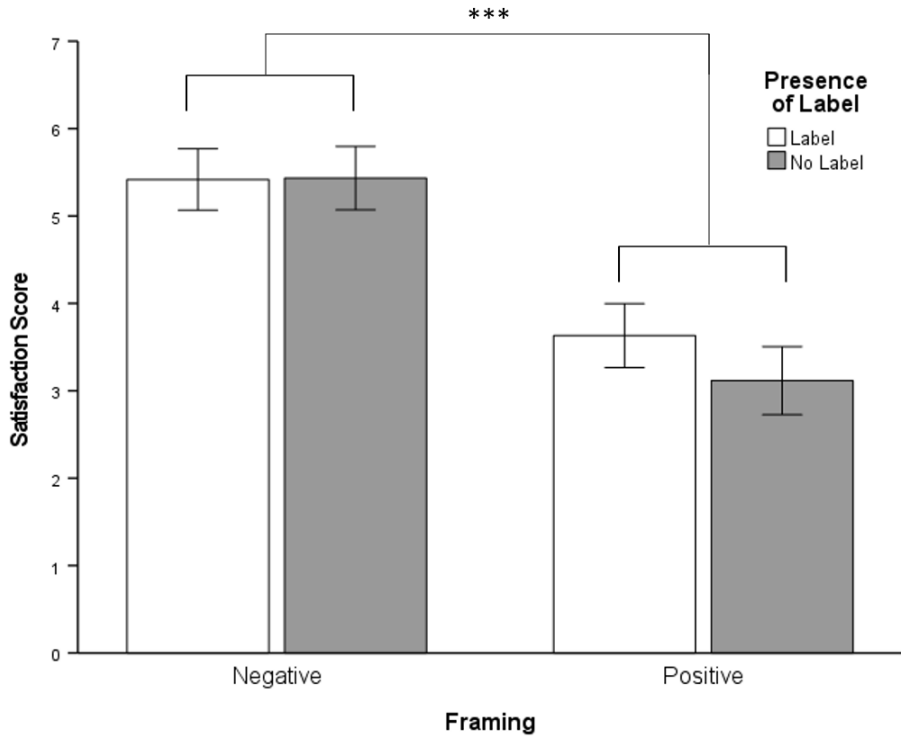
Life Satisfaction Scores Within Each Group for Friends Subscale



Note. *** p <.001. Error bars represent the 95% confidence interval.

Figure 6

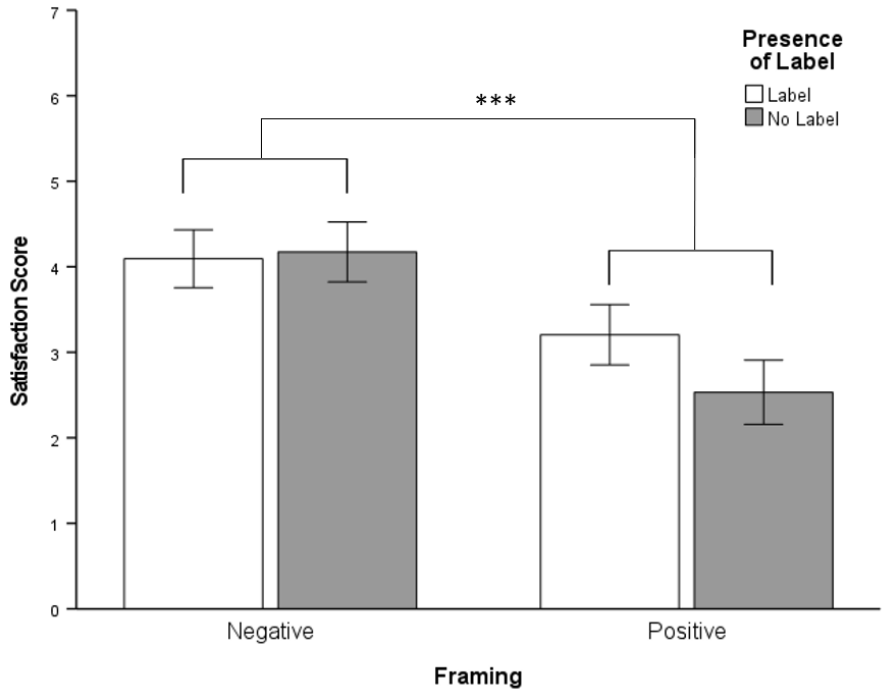
Life Satisfaction Scores Within Each Group for Education Subscale



Note. *** p <.001. Error bars represent the 95% confidence interval.

Figure 7

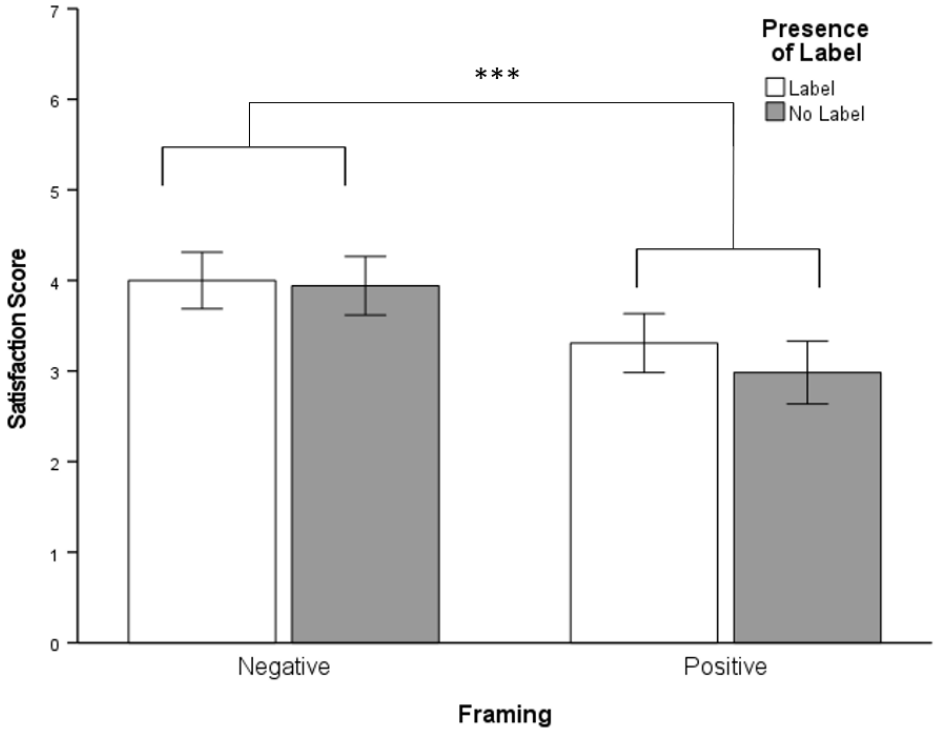
Life Satisfaction Scores Within Each Group for Himself Subscale



Note. *** p <.001. Error bars represent the 95% confidence interval. A significant interaction between framing and label was also present (p <.05).

Figure 8

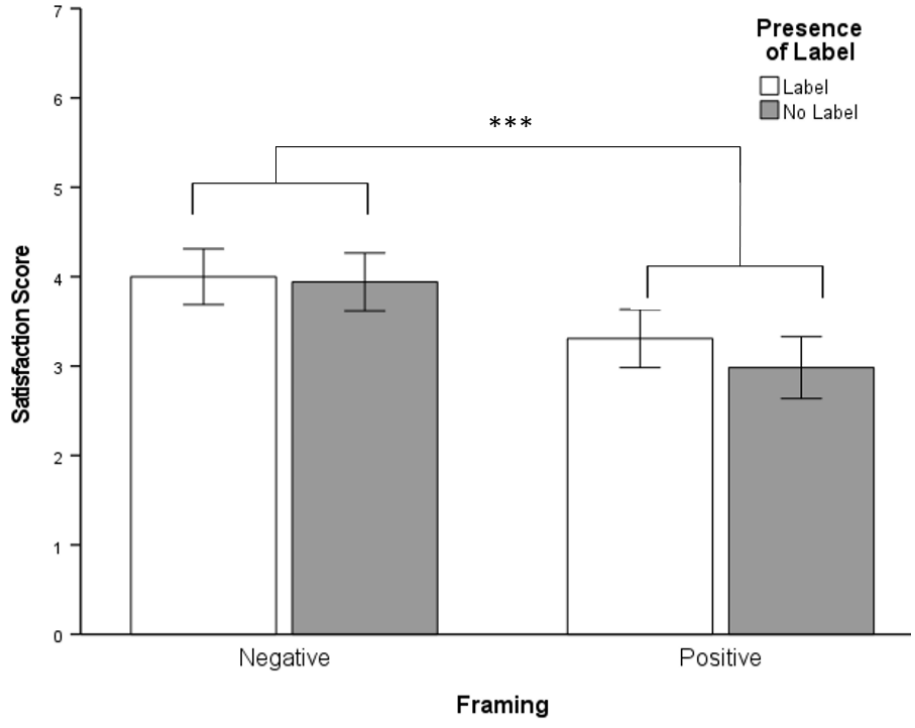
Life Satisfaction Scores Within Each Group for Living Subscale



Note. *** p <.001. Error bars represent the 95% confidence interval.

Figure 9

Life Satisfaction Scores Within Each Group for Overall Subscale



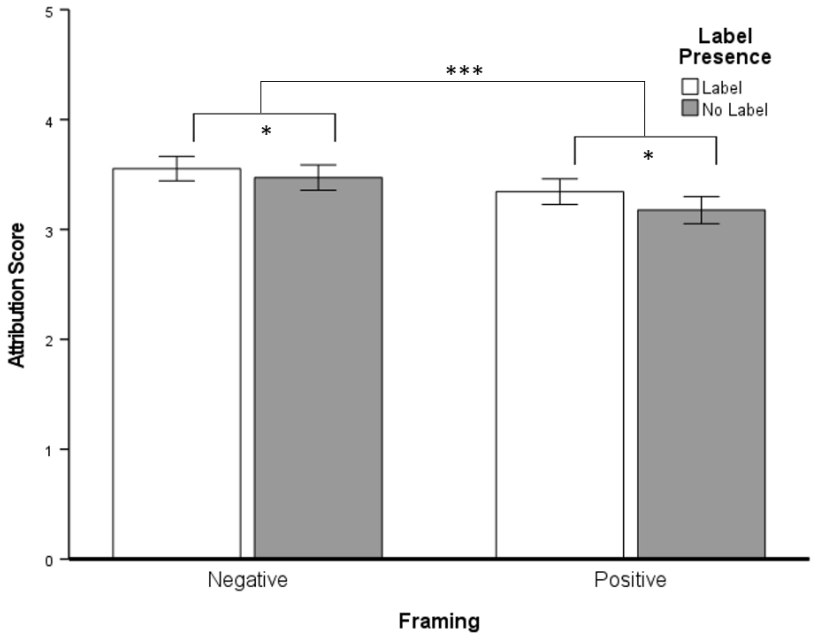
Note. *** p <.001. Error bars represent the 95% confidence interval.

Appendix T Challenging behaviour attributions scale graphs

The following figures demonstrate the results regarding each subscale of the adapted CHABA.

Figure 10

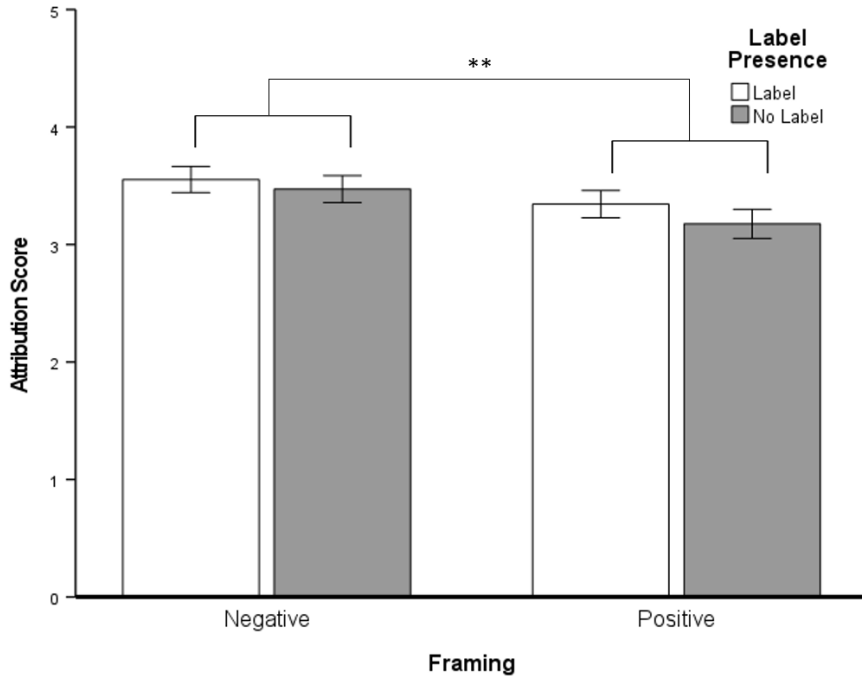
CHABA Scores Within Each Group for Learned Subscale



Note. *p <.05, *** p <.001. Error bars represent the 95% confidence interval.

Figure 11

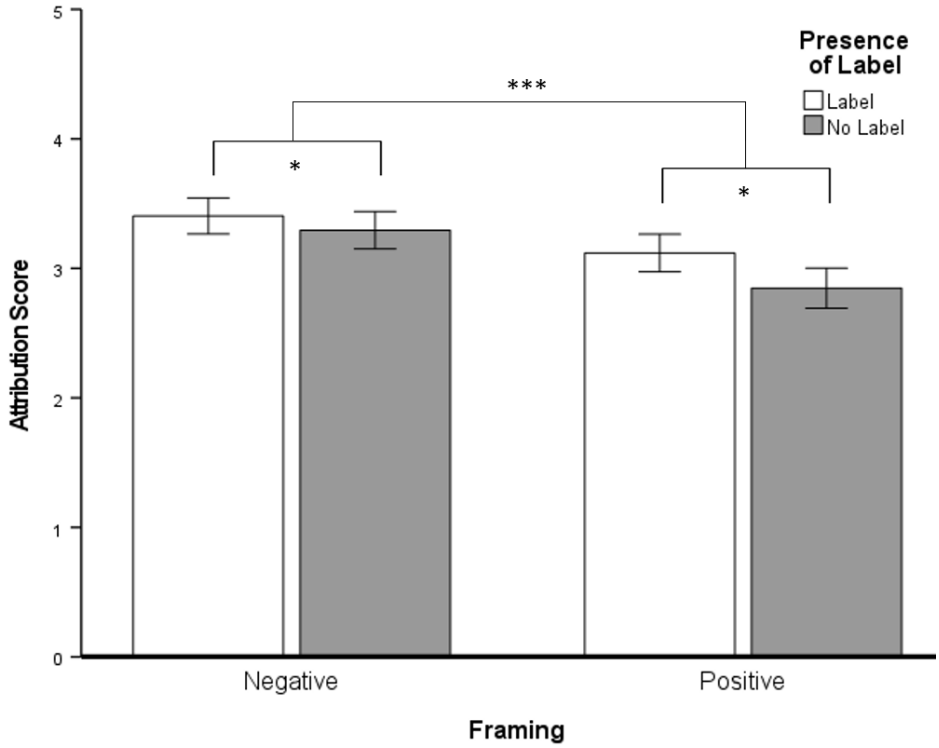
CHABA Scores Within Each Group for Biomedical Subscale



Note. ** p <.01. Error bars represent the 95% confidence interval.

Figure 12

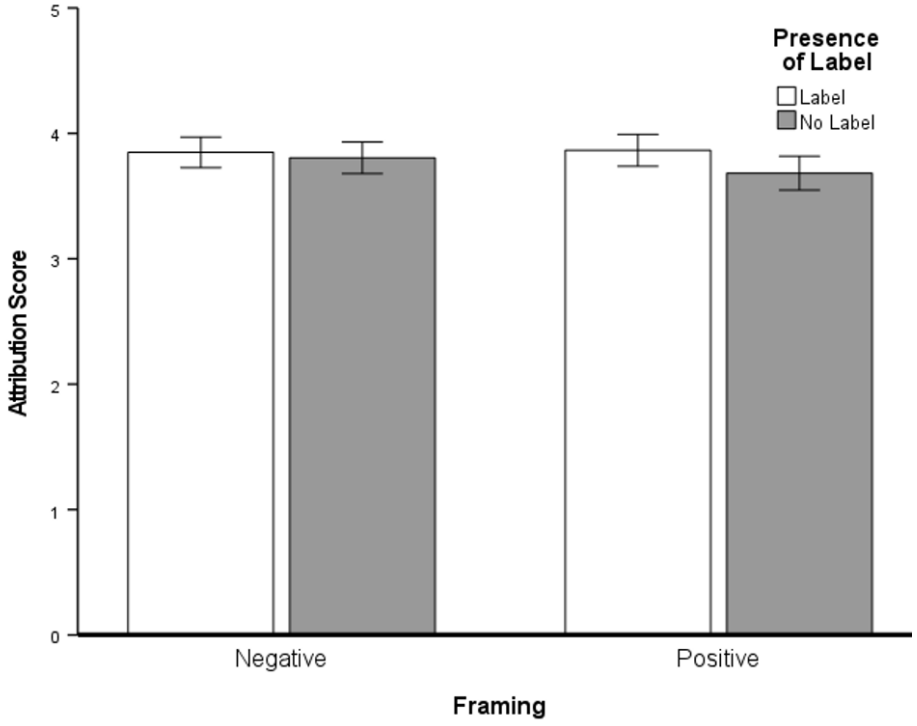
CHABA Scores Within Each Group for Physical Environment Subscale



Note. *p <.05, *** p <.001. Error bars represent the 95% confidence interval.

Figure 13

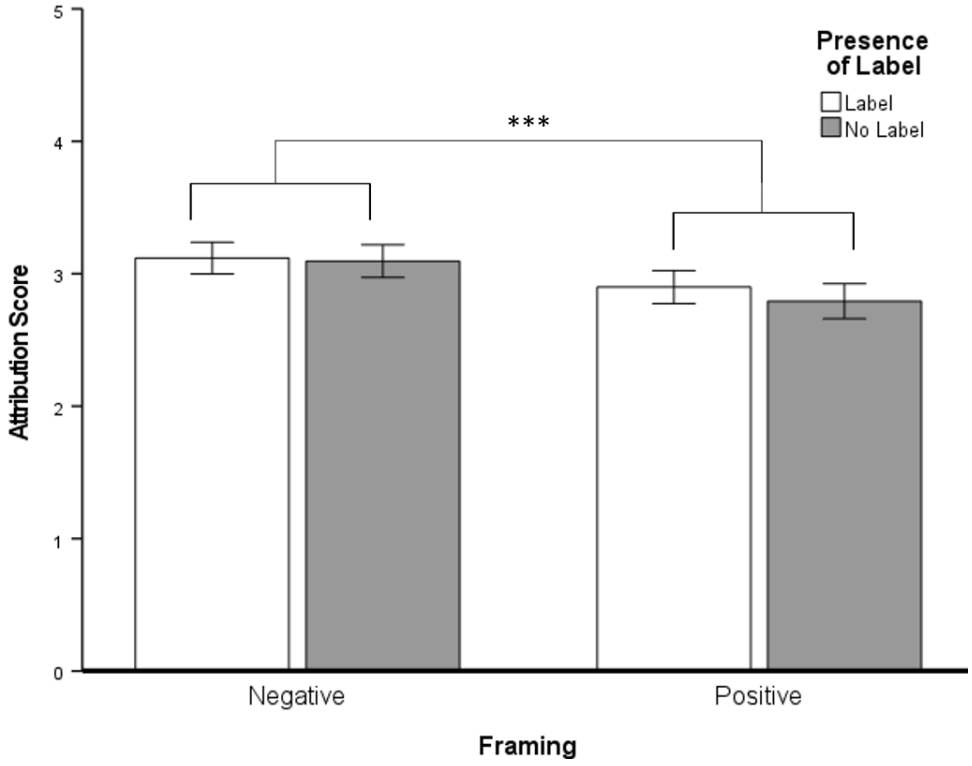
CHABA Scores Within Each Group for Emotional Subscale



Note. Error bars represent the 95% confidence interval.

Figure 14

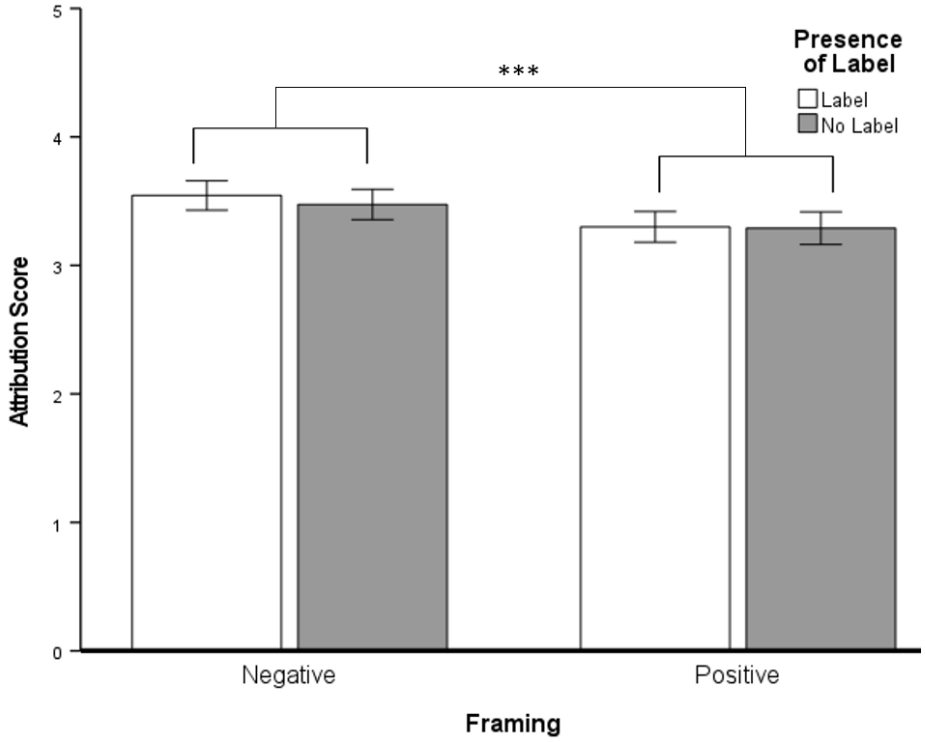
CHABA Scores Within Each Group for Stimulation Subscale



Note. *** p <.001. Error bars represent the 95% confidence interval.

Figure 15

CHABA Scores Within Each Group for Relationships Subscale



Note. *** p <.001. Error bars represent the 95% confidence interval.

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