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VICTORIA NEVILLE BSc (Hons), MSc

THE ROLE OF SCHOOLS IN FOSTERING PUPIL RESILIENCE.

Section A:

Whole school approaches to fostering resilience in school pupils: A review of the literature.

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Section B:

Resilience-promoting processes in schools for pupils with social, emotional and behavioural difficulties.

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A thesis submitted in partial fulfilment of the requirements of Canterbury Christ Church University for the degree of Doctor of Clinical Psychology

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Acknowledgements

Summary

Section A: This section reviews the literature regarding whole-school approaches to resilience. Much resilience research does not use a valid or reliable resilience measure within the methodology. This review considers only papers which have used such a measure and reviews the extent to which schools have been found to facilitate resilience development in their pupils. Eleven papers were identified and demonstrate that there is a trend between school approaches and resilience promotion, however a number of limitations do not enable firm conclusions to be made. Several methodological limitations are discussed, along with the difficulties and complexities of research in this field.

Section B: This research investigated the role of specialist schools for pupils with social, emotional and behavioural difficulties in facilitating resilience development. Pupils from two schools were invited to take part. Having a connection to school or peer relationship in school were explored as possible mediating factors between spending time in school and improvements in resilience. Trait emotional intelligence (TEI) was also explored as a possible moderating factor to explain pupils' abilities to form these connections and relationships. The length of time pupils spent in the specialist provision was predictive of resilience but none of the mediating or moderating factors were significant. TEI was the best predictor of resilience outcomes. The implications are discussed.

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Whole school factors associated with fostering resilience in young people: A review of the literature.

Abstract

Literature demonstrating the prevalence of distress experienced by young people highlights the importance of understanding resilience and increasing our knowledge of the most efficacious ways resilience can be developed. Socio-ecological theories of resilience suggest that the wider context within which individuals exist are important in the development of resilience. Therefore, the role of schools is considered in this review. Whilst a number of reviews have considered the ways in which schools support their pupils, the extent to which resilience has been reliably measured has varied. Several validated resilience measures have been developed which allows for potentially more robust resilience research to take place. This review summarises and critiques the literature which has explored whole school approaches to resilience development, where a validated measure has been used. Eleven studies were reviewed and demonstrate that there is a trend between school and resilience. The importance of supportive relationships with both peers and staff in school is highlighted in several studies as well as the positive effect of including a robust health promoting school's agenda. However, there are a number of limitations identified within the current literature and the need for further research is discussed.

Keywords: resilience, school, education, socio-ecological theory

Introduction

This introduction will consider the importance of studying resilience, the definition of resilience and theories which have attempted to explain this complex construct. This is followed by an exploration of the specific role of schools in promoting resilience.

Mental health of children and young people

Ten percent of children and young people are reported to have difficulties that would meet criteria for diagnosable mental health problems (Children's Society, 2008). This has led to increasing demands on children and young people mental health services concurrent to a "dis-investment" in children's services (NHS Benchmarking Network, 2013, p.5) therefore there is greater focus on preventing distress (Mental Health Taskforce, 2016). This focus has led to an increased interest in understanding how resilience can be promoted in children and young people to minimise distress.

Resilience

As a construct, resilience is intricate and multifaceted (Kaplan, 2013). The specific definition of resilience is subject to ongoing debate, however a common theme is the ability to adapt to significant stress and adversity in order to achieve positive, or at least avoid negative, outcomes (Luthar, 2006). Windle (2011) conducted a synthesis of over 270 papers to clarify a definition, with the intention of enabling more consistency in research, policy and practice;

> Resilience is the process of effectively negotiating, adapting to, or managing significant sources of stress or trauma. Assets and resources within the individual, their life and environment facilitate this capacity for adaptation and 'bouncing back' in the face of adversity (p.163).

Despite this definition providing a helpful summary of the key principles of resilience, a number of difficulties remain. Kaplan (2013) argues that, to an extent, resilience is a concept that lacks construct validity. Windle's (2011) definition above demonstrates two strands to resilience: the importance of internal and external resources when managing adversity and resilience being dependent upon effective use of these resources in response to exposure to adversity. The multiple elements of resilience lead to considerable variability in how the construct is considered within the literature.

There is a lack of clarity regarding whether it is possible to be resilient if adversity has not been experienced, and whether individuals identified as resilient can still be vulnerable. Similarly, there is confusion as to whether resilience refers to outcomes following adversity, (Rutter, 1990; Lösel, Bliesener & Koferl, 1989) or to characteristics of an individual or their environment which, in turn, influence outcomes. For example, Cohler (1987) argued that there are some innate qualities within children which enable them to be able to access support from others when facing adversity, such as ego strength and physical and personal attractiveness. However, it is unclear whether a child with these qualities could be described as resilient without experiencing adversity (Kaplan, 2013). The subjectivity of adversity also leads to difficulties when considering the validity of resilience as a construct.

The lack of clarity of many concepts involved in resilience leads to difficulties when attempting resilience research. Conceptualising and measuring the multiple elements outlined above is complex and would ideally involve large samples and longitudinal research.

Despite these challenges to understanding and studying the concept of resilience, Kaplan (2013) argues that only by continuing to study resilience will our understanding about this concept increase, despite research often generating more questions than answers.

Resilience theories

The difficulty with understanding and measuring the concept of resilience is reflected in the development of theories of resilience.

Research in resilience spans the last 50 years. Historically, resilience was considered an individual characteristic (Anthony, 1974). Individualised protective factors were initially identified such as being female, with advanced developmental skills and an internal locus of control (Werner & Smith, 1982). Over time, researchers began focusing on the "developmental and situational mechanisms involved in protective processes" (Rutter, 1987, p. 2), placing greater importance on the interaction between individuals and their environment. Bronfenbrenner (1979) previously established a model of human development, which focused on the synergy between the systems surrounding a child as central to their development. Bronfenbrenner and Evans (2000) further developed this model, paying particular attention to the processes that occur between these systems and the child.

Lerner (2006) demonstrated the importance of interactions between the complex systems around a person, and the way in which these interactions can adapt under stress, highlighting the link between ecological models of human development (Bronfenbrenner & Evans, 2000) and resilience. A socio-ecological theory of resilience was later developed which argued that resilience is the process by which children have the capacity to utilise their own resources as well as the resources within their environments (such as social, cultural, physical and natural resources) to maintain their wellbeing (Ungar, 2011; Ungar, Ghazinour & Richter, 2013). Within this theory, the extent to which children may overcome adversity is dependent upon their ability to not only utilise resources, but for appropriate resources to be available. By reviewing recent research, Ungar et al. (2013) suggested three principles which encapsulate the processes informing a socio-ecological model of resilience:

Equifinality refers to the complexity of the concept of resilience, specifically the proximal processes involved in enabling different outcomes in response to adversity.

Differential impact refers to how these proximal processes can differ, such as different types of adversity, the way in which individuals make sense of difficulties, the availability of different resources and the extent to which individuals can make use of them.

Contextual and cultural moderation highlights the differing ways in which people may find and use resources to enhance their well-being. From a research perspective, this helps to develop an understanding of commonalities and differences in identified resilience processes.

The principles highlighted by Ungar et al. (2013) promote the importance of wider, cultural approaches to minimising risk and ensuring the relevance and availability of resources.

Increasing our understanding of resilience is imperative to improving the lives of people of all ages. However, understanding in particular how children and young people can be protected from the effects of trauma and adversity by providing appropriate resources and developing their abilities to make use of these resources is particularly important in preventing longer-term distress and to promote good mental health.

The role of schools

School was my haven, my solace, the alternate universe I stepped into most days with relief. School counteracted the trauma of the rest of my life (Henderson, 2013, p. 22).

Schools are a significant part of children's ecological system, with an excess of 90 percent of children in developing countries accessing education (OECD, 2014). The role of schools in promoting resilience is argued to be particularly important for children from disadvantaged communities and families (Song, Doll & Marth, 2013).

People with lived experience of mental health problems, carers and professionals specifically expressed the need for more mental health promotion within schools as part of the Five Year Forward View for Mental Health (Mental Health Taskforce, 2016). The government has explicitly stated schools' responsibility to promote resilience (Department for Education, 2016). Tier 2 mental health services have a role in supporting schools with this work (NHS England, 2015) and therefore the Clinical Psychology profession is involved in exploring the most effective ways of supporting this work. Clinical Psychology is well placed to consider resilience and its relationship to mental health outcomes (Marmot, 1998; Masten, 1994) and can support Tier 3 services by engaging in preventative work.

Developing student autonomy, sense of purpose, social competence, problem solving skills and achievement motivation are all identified as 'protective possibilities' which can be achieved within the school context (Morrison & Allen, 2007). Bonding between pupils and staff and promoting resilience in school staff are also highlighted as key (Brooks, 2006).

School based interventions

Many school-based interventions have been developed to improve resilience. For example, the PATHS (Promoting Alternative Thinking Strategies) programme (Kusche & Greenberg, 1994) aims to develop social and emotional competency within the classroom through teacher-led activities. Many schools have nurture groups for individual children "showing signs of emotional and behavioural difficulties" (Bennathan & Boxall, 2012, p. 1).

Castro-Olivo et al. (2013) argued that socio-ecological theories of resilience explain why many interventions that have focused on teaching individual social skills are not always effective. One of the potential difficulties with targeted interventions is the lack of clarity in how vulnerable pupils are identified. When considering a socio-ecological model, whole-school approaches may be a more effective way in which to promote resilience by increasing

individual strengths and providing pupils with access to positive support systems. Whole-school approaches refer to school initiatives, programs or cultures that are intended to increase resilience in all pupils within the school, not just individual targeted children. This may be a specific program for the whole school (such as the Health Promoting Schools approach; WHO, 2017) or a broader cultural approach incorporated through staff training (such as Read, Aldridge, Ala'I, Fraser & Fozdar, 2015).

Previous reviews

Theron (2016) published a synthesis of research to determine how school ecologies facilitate resilience development. This review has a socio-ecological approach and identified the importance of teachers who champion resilience and of whole-school resilience support. Theron found teachers with warm relationships with pupils, clear, consistent and achievable expectations, who facilitated pupil mastery skills and created an effective classroom environment were likely to promote individual pupil resources associated with resilience. Sub-themes included the importance of having a school climate and environment which promotes school engagement, attends to children's basic needs, provides a creative learning environment and extra-curricular activities, and provides a curriculum that promotes optimal development of all skills.

Theron highlighted the extent to which some research articles infer resilience promoting practice, without explicitly defining resilience. Many papers in the review did not include a measure of resilience and instead inferred resilience (for example, Acevedo & Hernandez-Wolfe, 2014).

For example, a study which measured pupils' responses to stressful situations, argued that pupils reporting schools as supportive inferred that the school was promoting resilience (Tatlow- Golden, O'Farrelly, Booth, O'Rourke & Doyle, 2016). However, resilience was not

measured directly. Other resilience researchers have created their own measures of resilience, which leads to uncertainty of validity and reliability (Arastaman & Balci, 2013). Other research involves teachers selecting pupils who they believe to be resilient (Mulloy, 2011; Johnson, 2008). Whilst these studies highlight important potential factors which may influence resilience development, the effectiveness of the school approaches on resilience remains unclear.

Resilience measures

In line with the difficulties in defining resilience outlined above, Naglieri, LeBuffe and Ross (2013) considered the complexity of measuring resilience;

> Resilience is an outcome, rather than a psychological construct in and of itself that can be defined and, perhaps, measured. This has led to efforts to identify variables that lead to, and therefore can be used to predict, resilience rather than measuring it directly. (p. 242).

As argued earlier when defining resilience, the above understanding would suggest that measuring resilience involves measuring protective factors or resources in the individual and environment, rather than measuring individual outcomes following adversity. This approach is problematic as individuals may have access to several protective factors and resources yet have negative outcomes when faced with adversity. Similarly, due to the inherent subjective nature of protective factors, Naglieri et al. (2013) posited that there may be a lack of generalisability of protective factors. This approach does not address the subjectivity of adversity, and has been criticised for overlooking the importance of everyday life events which may contribute to adversity by concentrating on groups identified as vulnerable (Naglieri et al., 2013).

However, Walsh, Dawson and Mattingly (2010) discuss measuring outcomes following adversity, specifically child maltreatment, as opposed to measuring resources. From considering many papers, the authors summarise that multiple domains reflect resilience outcomes across research, most frequently emotion regulation, academic outcomes and social competence, though stress how the relevant domains are dependent on developmental stages. The differences in approaches to measurement lead to considerable discrepancies in the prevalence of resilience (Walsh et al., 2010; Vanderbilt-Adriance & Shaw, 2008). Ostrowski & Sikorska (2014) also argued that resilience measures appear to either measure resilience as a developmental outcome, a process (accessing resources which then increases likeliness of avoiding negative outcomes) or as an individual resource, which reflects the on-going discrepancies in understanding of resilience.

 Despite the complexity in measuring resilience, a number of resilience measurement scales, for both adults and children, exist. A methodological review argued that much further validation is needed (Windle, Bennett & Noyes, 2011). When considering the quality of resilience measures specifically designed for use with adolescents, none of the identified measures scored satisfactorily (Windle et al., 2011).

Due to the number of problems identified above, measures of resilience need to be treated with caution and each measure needs to be carefully considered to understand the way in which resilience is conceptualised. Even then, the utility of resilience measures should continue to be questioned as our understanding of resilience and its complexities develops. This paper considers the role of socio-ecological approaches in school in building resources associated with resilience, as opposed outcome-focused approaches as outlined by Walsh et al. (2010). The limitations of this will be considered.

Scope

Socio-ecological theories of resilience posit that contexts surrounding individuals contribute to resilience (Ungar, 2011; Ungar et al., 2013). Based upon this theory, it may be suggested that the school context might play an important role in the development of resilience for children and young people. Therefore, rather than considering specific resilience-promoting programs which are accessed by targeted children, this review will consider research into schools as a whole, and how they may, or may not, promote resilience for all pupils. Whole-school factors which have been associated with resilience include both formal support such as school-wide resilience or health promotion projects and informal support including relationships between pupils and staff, or a nurturing school climate (Theron, 2016).

Whilst some reviews have considered the relationship between school and resilience, there are currently no reviews which include only research using validated measures of resilience. As many measures have now been developed, it is important to explore the socio-ecological theories with potentially more robust research. The implications of the variability in both defining and measuring resilience across studies, will be considered.

The aim of this review is to determine whether schools affect resilience in pupils, when external and internal resources associated with resilience are explicitly measured, whilst considering the challenges with both defining and measuring this complex construct. By reviewing this research, the effectiveness of whole school approaches can be considered and can potentially guide implementation of such approaches. In addition to offering avenues for future research, this review aims to further contribute to on-going exploration of the utility of resilience as a construct the complexities of its measurement.

Methodology

Measures

Initially, a search was conducted to determine the existing resiliency measures which have been tested for reliability and validity. The search terms resilien* AND measure* were used to search PsychInfo and Medline. See Figure 1 for a PRISMA diagram (Moher, Liberati, Tetlaff & Altman, 2009) of this search process.
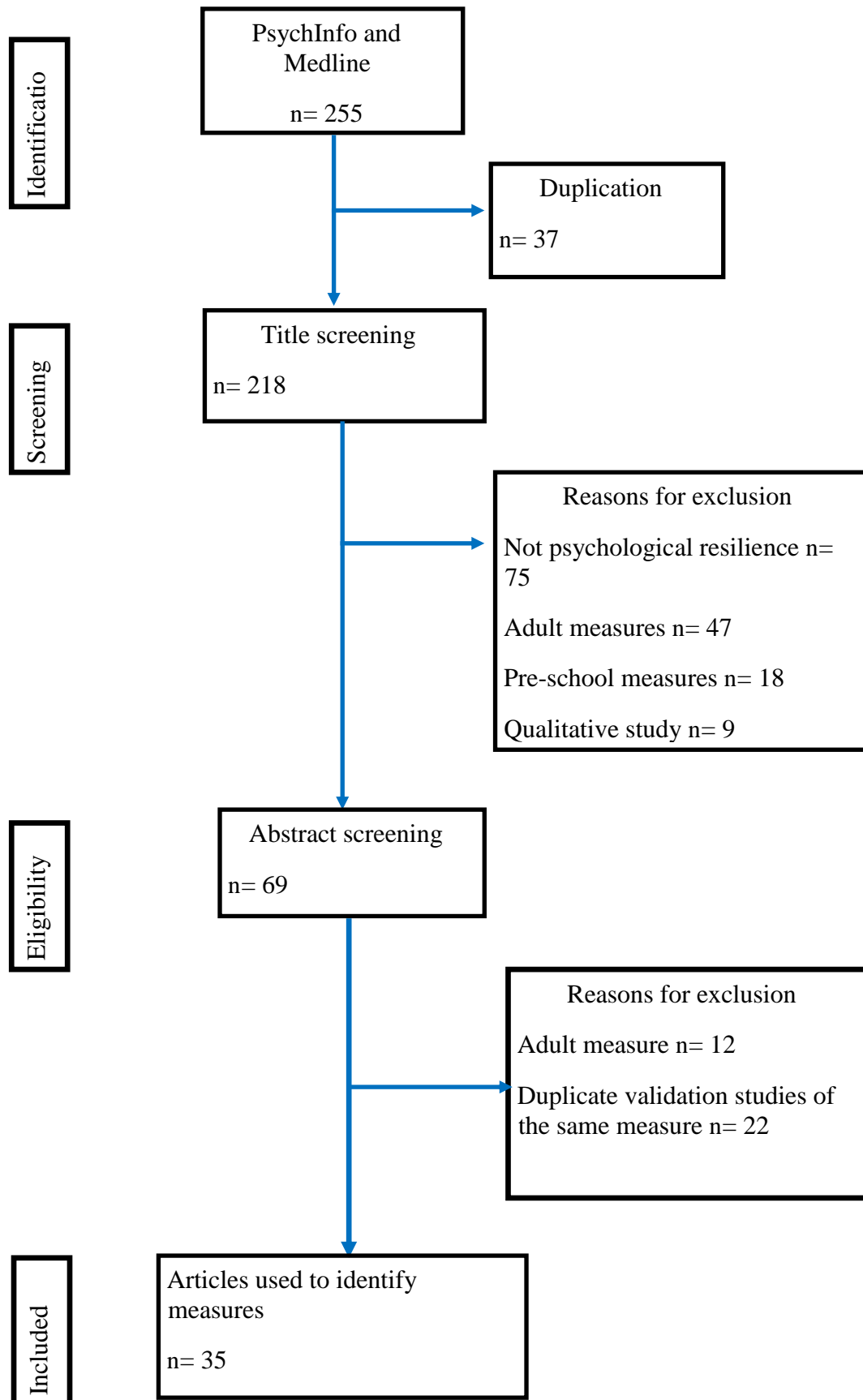
Figure 1. PRISMA diagram of literature search strategy (Moher, Liberati, Tetlaff & Altman, 2009)

Several sources were particularly helpful in the identification process (Hall, 2010; Naglieri et al., 2013; Prince-Embury, 2013, 2015; Windle et al., 2011). From the 35 articles, 27 measures were initially identified. Some papers consider measures of outcomes following an adverse event, such as well-being or school attainment (Walsh et al., 2010, for example). Whilst these measures are useful in exploring the different ways in which specific outcomes can be demonstrated in response to adversity, they do not explain the processes involved. This review considers only measures which claim to be specific measures of resilience resources, not outcomes. After excluding general outcome measures, the reviewed papers produced 15 relevant measures. These are listed in Table 1.

Table 1

Resilience measures used in subsequent literature search.

Measure	Authors
Resilience Scale for Adolescents (READ)	Hjemdal et al., 2006
Child & Youth Resilience Measure (CYRM)	Ungar & Liebenberg, 2011
Youth Resiliency: Assessing Developmental Strengths (YR:ADS)	Donnon & Hammond, 2007
The Resiliency Attitudes and Skills Profile	Hurtes & Allen, 2001
California Healthy Kids Survey- The Student Resiliency Survey (SRS)	Sun & Stewart, 2007
California Healthy Kids Survey- The Resilience Youth Development Module (RDYM)	Constantine & Benard, 2001; Constantine, Benard, & Diaz, 1999; WestEd, 2004; 2009
Ego-resiliency	Bromley, Johnson & Cohen, 2006
Resiliency Scale for Children and Adolescents (RSCA)	Prince-Embury, 2013
Resilience Questionnaire for Middle-adolescents in a Township School (R-MATS)	Mampane, 2010
The Resilience Scale (RS)	Wagnild & Young, 1993
Mexican Resilience Scale	Gonzalez-Arratia, Saavedra, van Barneveld & Valdez, 2013
Connor-Davidson Resilience Scale (CD-RISC)	Connor & Davidson, 2003
Adolescent Resilience Questionnaire	Gartland, Bond, Olsson, Buzwell & Sawyer, 2011
Social Emotional Assets and Resilience Scales (SEARS)	Nese, Doerner, Romer, Kaye, Merrwll & Tom, 2012
Resilience Skills and Abilities Scale (RSAS)	Jew, Green & Kroger, 1999

A further literature search was then completed using PsychInfo, Medline, ERIC (EBSCO), CINAHL and Teacher Reference Centre databases. Each of the measures identified in Table 1 were searched in turn and added to the term AND school* OR classroom* OR education* OR teach*. In each of the databases, the 'search entire document' option was selected to ensure that the full papers were searched, including the reference section.

Seven hundred and twenty-one papers were identified and initially screened by title. Relevant papers were then screened by reading abstracts. The 29 papers that remained after initial exclusion were screened for relevance according to inclusion and exclusion criteria

summarised in a PICOS table (O'Connor, Green, Higgins, 2011; see Table 2). Reference lists

were checked for missing papers. The literature search process is summarised in a PRISMA

diagram (Moher et al., 2009) (see Figure 2).

Table 2

PICOS table summarising inclusion and exclusion criteria.

Parameter	Inclusion criteria	Exclusion criteria
Participants	Statutory school age children/young people. Must attend a school provision.	Adults, University/college pupils, pre-school children, children who do not attend a school provision.
Intervention	May not be a specific intervention but rather an approach. Must be within a school and be a whole school approach.	Specific resilience interventions targeted at specific pupils. Interventions for specific behaviours, such as adolescent smoking. Studies which only look at pupil attitude to school and do not include an approach adopted by school.
Comparator	Papers both with and without comparators will be included.	
Outcomes	Paper must measure emotional resilience using one of the identified measures.	Tenuous measures or measures where resilience is only inferred (i.e. measure of well-being) Not measuring emotional resilience i. e educational resilience/academic outcomes. Descriptive paper only.
Study design	Any design.	
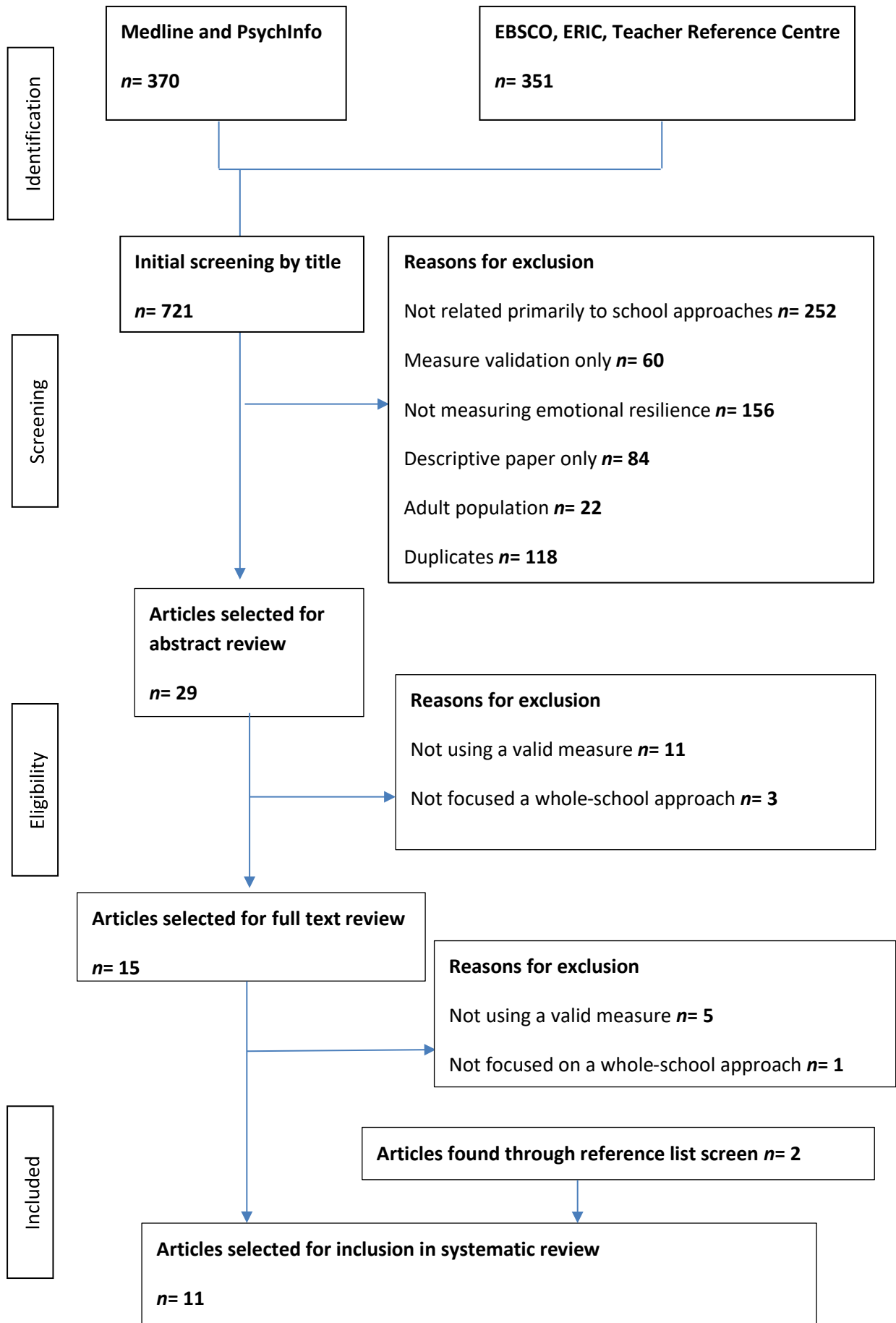
Figure 2 . PRISMA diagram of literature search strategy (Moher, Liberati, Tetlaff & Altman, 2009)

Quality criteria

Criteria used when considering the quality of both quantitative and qualitative research was taken from the Standard Quality Assessment Criteria for Evaluating Primary Research Papers (Kmet, Lee, & Cook, 2004). This was chosen due to its application to a variety of research designs. Separate criteria are suggested for quantitative and qualitative methodology.

Results

Eleven papers were identified to be included in this review. Six used questionnaires from the California Health Kids Survey, three used the CYRM-28 and two further papers used the R-MATS and The Resiliency Scale. None of the identified studies were conducted in the United Kingdom. Summaries of each paper can be found in Table 3. Summaries of the quality criteria scores for each study can be found in Tables 4 and 5.

Table 3
Summary of papers.

Authors & date	Country	Research aim	Sample	Study design and method	Measures	Findings
1) Stewart & Sun (2004)	Australia	Hypothesise that family, school and community based social support will significantly influence resiliency and perceptions of health.	20 primary schools 2580 pupils Age 8, 10 & 12	Cross-sectional Quantitative	Modified California Healthy Kids Questionnaire (the Student Resiliency Survey) Peer Support Scale	Home, school and community based adult and peer support all have significant effects on resiliency Teacher support and school based peer support demonstrated to have significant effects on resilience scores
2) Stewart Sun Patterson Lemerle & Hardie (2004)	Australia	To explore the role of the Health Promoting Schools approach on the development of resilience.	20 primary schools 3146 pupils Age 8, 10 & 12 Pupils, care givers 1103 school staff	Cross-sectional Quantitative	Pupils: Modified California Healthy Kids Questionnaire (the Student Resiliency Survey) Care givers: Parent/Care-provider Survey School staff: HPS Audit Checklist & Staff Survey	HPS has significant effects on student resilience, protective factors and school environment The communication and cooperation, self-esteem, empathy, and goals and aspirations elements of the resiliency component contributed to these differences between the levels of HPS and resilience scores High HPS schools also had higher protective factor scores, including once controlled for many confounding variables

						Staff with positive views of own schools HPS were more likely to have pupils with a positive view of their resilience
						Students view of their own resilience is dependent on protective factors and school environment
3) Johnson & Lazarus (2008)	South Africa	To understand mental health needs of specific population, their strengths, the support they are offered and the role of the HPS framework in promoting well-being.	7 high schools. 4 historically disadvantaged (HDS), 3 historically advantage (HAS). 472 pupils Age 12-18+ 1 guidance teacher/school psychologist from each school.	Cross-sectional Mixed-methods	California Healthy Kids Survey (CHKS)-RYDM Interview schedule-focus groups with students The MindMatters HPS Questionnaire.	Some risk behaviours differed between HDS and HAS schools. Less than 50% of students in either HDS or HAS scored high for external assets in school (caring relationships, high expectations and meaningful participation). HDS scored higher than HAS. More pupils at HDS scored high on school connectedness. Pupils views of school support included being unclear whether teachers cared, could be trusted, or may be judgemental. HDS reported to not have the policies in place to address any of areas in HPS questionnaire. HAS had policies for all.
4) Sharkey You &	America	To examine the validity of the RYDM and a proposed model	Calibration sample (n=10,000)	Cross-sectional	California Healthy Kids Survey (CHKS)-RYDM	School assets found to be important for all pupils, not just those with low family assets. School assets may have more of an impact on internal resilience of pupils

Schnoebel en, (2008)		of school assets, resilience and school engagement. Hypothesis: school assets would have a stronger protective role for children with low levels of family assets.	Validation sample (n=10,000) 7th, 9th, 11th grade pupils.	Quantitative		with low family assets. Internal resilience had a mediational role between school assets and school engagement.
5) Mampane & Bouwer (2011)	South Africa	To investigate the contribution of school to the resilience of grade 9 pupils.	2 secondary schools 291 pupils were surveyed and 16 the selected	Cross-sectional Mixed-methods	Resilience Questionnaire for Middle-adolescents in a Township School (R-MATS) Focus groups-Interactive Qualitative Analysis (IQA)	Resilient pupils perceived school environment and adolescence as primary drivers of positive future goals. Less resilient pupils perceived socialisation as the only primary driver and emphasised parental roles.
6) Catro-Olivo et al. (2013)		Propose a model of resiliency building which includes predominately environmental factors as	Pupils who demonstrated engaging in anti-social behaviour in the RSYD as part of the	Cross-sectional Quantitative	California Healthy Kids Survey (CHKS)-RYDM	Results discuss the ecological model better explains resiliency building in school. Argues that schools should have an ecological approach to resilience building and violence prevention including community-school links.

		opposed to a narrower (not ecological) model of resilience and maladaptive behaviours.	California Healthy Kids Survey. Californian pupils in year 2—5-2007. (n=667,610) 7th, 9th, 11th grade pupils.			
7) Lee & Stewart, (2013)	Australia	Exploring the extent to which the HPS model using a resilience intervention can improve resilience.	Twenty schools (ten intervention, ten controls) in Australia, matched for school size, location and socio-economic status. Pupils aged 8,10 and 12 and their parents and school staff	Quasi-experimental Quantitative	Combined version of California Healthy Kids Survey and Perception of Peer Support Scale.	HPS interventions significantly changed the difference in resiliency scores between the two groups No significant difference in school connection HPS intervention, family connection, school connection, autonomy experience and peer support all significant predictors of explaining resilience

8) Jones & Lafreniere, (2014)	Bahamas	Explored the role of the primary microsystems in the promotion of social development.	103 Bahamian pupils. Aged 13-17 years	Cross-sectional Quantitative	Child and Youth Resilience Measure (CYRM) Bahamian Youth Risk Behaviour Inventory Adapted New General Self-Efficacy Scale Adapted New General Self-Efficacy Scale Adapted Parent-Adolescent Communication Scale	Increased school involvement and positivity correlated with higher resilience scores. School engagement was not a significant predictor of resilience in the final model proposed. When school involvement was included with parental and non-parental relationships and extra-curricular activities, it predicted resilience significantly. However, when self-efficacy was added, it was no longer significant. More social competent pupils are more likely involved in school, but school engagement is less of a predictor of resilience when pupils have a positive adult relationship and perceived self-efficacy.
9) Theron Liebenberg & Malindi, (2014)	South Africa	Investigated whether schools which promote and focus on children's rights facilitate resilience in their pupils.	951 pupils Aged 13-19 years	Cross-sectional Mixed-methods	Pathways to Resilience Youth Measure: included scales measuring risk, resources, school experience and resilience. Those considered to be 'resilient' were invited to complete 'drawing and writing' activities to illustrate	Pupils who reported to consider school environment as supportive and respectful had higher resiliency scores Overall results of quantitative analysis suggested rights-based schools facilitated resilience Qualitative analysis demonstrated the importance of teacher and pupils' interactions in creating a respectful school environment

					what they had found helpful to positive adjustment	Teachers encouraging agency and future plans were identified as being particularly important
10) Read Aldridge Ala'I Fraser & Fozdar (2015)	Australia	Due to increasing diversity in this specific school, senior staff wanted to understand the process of improving the school climate and investigate the influence this could have on wellbeing, resilience and identity.	122 pupils	Uncontrolled pre-post study Quantitative	What is happening in school? (WHITS) survey Student agency scale (SAS) which includes the Resiliency Scale (Wagnild & Young, 1993)	Statistically significant improvements in student scores of teacher support, affirming diversity and reporting and seeking help, although effect sizes are small Significant improvements in wellbeing, resilience, self-anchoring and moral identify
11) Liebenberg et al. (2016)	Canada, New Zealand, South Africa	Explores how school ecologies can moderate the relationship between resilience and risk. Specifically explores the role of respect and empowerment in	2387 pupils. 1209 boys (age 11-20) 1175 girls (age 11-19) 2 groups of youths in each country; 1 using formal	Cross-sectional Quantitative	Pathways to Resilience Measure (PRYM) which includes the CYRM. Questionnaires regarding family risks, community risks, school experience.	Canada: Negative relationship between peer support and limited parental/caregiver warmth moderated by experiences of respectful schooling. New Zealand: Negative relationship between educational resources and limited parental affection moderated by empowering school experiences.

	schools as protective factors.	services and one not. South African pupils were part of comparison group.		South Africa: Negative relationship between educational resources and community risks moderate by experiences of respectful schooling.

Table 4

Summary of Standard Quality Assessment Criteria scoring for quantitative papers (Kmet et al., 2004)

	1.Stewart & Sun (2004)	2.Stewart, Sun, Patterson, Lemerle & Hardie (2004)	3.Johnson & Lazarus, (2008)	4.Sharkey, You & Schnoebelen, (2008)	6.CatroOlivo et al. (2013)	7. Lee & Stewart, (2013)	8. Jones & Lafreniere, (2014)	9. Theron, Liebenberg & Malindi, (2014)	10.Read, Aldridge, Ala'I, Fraser & Fozdar, (2015)	11.Liebenberg et al. (2016)
1. Question/objective sufficiently described?	2	2	2	2	2	2	2	2	1	2
2. Study design evident and appropriate?	1	1	1	1	2	2	1	2	0	2
3. Method of subject/comparison group selection or source of input variables described and appropriate?	1	1	1	1	1	1	1	1	1	1
4. Subject characteristics sufficiently described?	1	2	1	2	1	2	1	1	1	2
5. If intervention and random allocation was possible, was it described?	N/a	N/a	N/a	1	N/a	N/a	N/a	N/a	N/a	N/a
6. If interventional and blinding of investigators was possible, was it reported?	0	0	0	0	0	0	0	1	0	0
7. If interventional and blinding of subjects was possible, was it reported?	0	0	0	0	0	0	0	0	0	0

8. Outcome and (if applicable) exposure measure(s) well defined and robust measurement/misclassification bias? Means of assessment reported?	2	2	2	2	2	2	2	2	1	2
9. Sample size appropriate?	2	2	2	2	2	2	2	2	1	2
10. Analytic methods described/justified and appropriate?	2	1	0	2	2	2	2	2	1	2
11. Some estimate of variance is reported for the main results?	2	2	0	2	1	2	2	2	1	1
12. Controlled for confounding?	2	2	0	1	1	2	2	0	0	1
13. Results reported in sufficient detail?	2	2	1	2	1	2	2	2	2	1
14. Conclusions supported by the results?	2	2	1	2	1	2	2	2	2	2

Note. 0= No, 1= Partial, 2= Yes

Table 5

Summary of Standard Quality Assessment Criteria scoring for qualitative paper (Kmet et al., 2004)

	5.Mampane & Bouwer (2011)
1. Question / objective sufficiently described?	2
2. Study design evident and appropriate?	2
3. Context for the study clear?	2
4. Connection to a theoretical framework / wider body of knowledge?	2
5. Sampling strategy described, relevant and justified?	2
6. Data collection methods clearly described and systematic?	2
7. Data analysis clearly described and systematic?	2
8. Use of verification procedure(s) to establish credibility?	1
9. Conclusions supported by the results?	2
10. Reflexivity of the account?	1

Note. 0= No, 1= Partial, 2= Yes

Structure of the review

The papers will be considered in turn and grouped by the resilience measure used to enable comparison. Individual paper critiques will be included here and broader critiques will be considered in the summary.

The Student Resilience Survey (Sun & Stewart, 2007)

The student resilience survey (SRS) (Sun & Stewart, 2007) was constructed by combining the California Healthy Kids Survey (CHKS) and the Perceptions of Peer Support Scale. The self-report scale assesses student perceptions of their individual characteristics, such as communication, self-esteem and help seeking, and protective resources from family, peers, school and community. Internal consistency was found to be good amongst an English-speaking sample and the scale has been negatively correlated with emotional, behavioural and health problems (Lereya et al., 2016).

Stewart and Sun[1] (2004[1]) used regression models to understand the association between adult and peer social support and resiliency of pupils in 20 primary schools described as having low socio-economic status and high numbers of single parent families and unemployment. Pupils (n=2580) completed questionnaires within classrooms. Within the analysis, resiliency was the dependent variable (measured by the SRS), and the independent variable comprised a combination of scales regarding parent/caregiver, teacher, community-based adult, peer and group support.

Adult and peer support from both home, school and the community had significant positive effects on resilience. With the exception of peer support, these effects remained

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[1] Numbers will be included to enable clarity when referring to Table 3.

significant after gender, age and socio-economic status were added to the model. Teacher and peer support had a significant effect on student resiliency in all of the presented models.

Whilst there was large sample size, the authors do not discuss the high number of participants missing from their final sample (n= 566). It is possible that important characteristics of this population have not been considered. Lack of population representation is a common disadvantage of cross-sectional design (Sedgwick, 2014) and is recognised as an important quality criterion (Kmet et al., 2004).

Whilst the demographics of the target population are described as including high numbers of people from an indigenous culture, this was not made explicit within the description of the sample population. Cultural differences that may have affected the research were neglected. For example, the definition of resilience, in addition to the measure of resilience used, appear to be based upon western values.

Stewart et al. (2004[2]) used the SRS to explore the role of the Health Promoting Schools (HPS) approach on the development of resilience in 20 schools. HPS includes targeting health in education, engaging in health promotion (including mental health), promoting individual well-being, working with communities to improve health outcomes and promoting health-related behaviours (WHO, 2017).

The authors used a cross-sectional design. Pupils completed the SRS and a protective factors scale, whilst parents and carers completed school and family climate measures. The protective factors scale measured perceptions of connectedness to adults at home and in the community, peer support, autonomy and having prosocial peers. The school environment survey completed by parents/caregivers considered school morale, staff tension/pressure, expectations, rules, behaviour, pupil development, the learning curriculum, parental involvement and staff-

family relationship. School staff completed an audit tool to determine the level of HPS implementation, categorised as either low, average or high. Cronbach's alpha demonstrated high internal consistency for all measures used, including the resiliency measure.

The perceived level of implementation of the HPS approach had a significant effect on pupil resilience (as measured by the SRS). This was related to the communication and co-operation, self-esteem, empathy, and goals and aspirations aspects of the resiliency measure. Schools with higher scores on the HPS audit also had higher scores on student resilience, protective and school environment factors, in comparison to average and low scoring schools. However, when analysis controlled for age, gender, protective factors and school environment, there was no significant association between resilience and HPS, which suggests less strength in the argument for this relationship.

The authors summarised that the development of student resilience is affected by the extent to which schools apply HPS approaches. They acknowledged that resilience is dependent upon protective factors such as feeling connected to adults and peers both within and outside of school and the school environment. They hypothesised that HPS influences resilience by building on these protective factors.

Implementation of the HPS agenda was measured by a questionnaire completed by school staff and therefore may be biased due to lack of independence. Potential differences between the schools were not considered such as staff retention or inspection quality and therefore unintended interventions may not have been measured (Kmet et al., 2004).

Resiliency Youth Development Module (RYDM; Constantine & Benard, 2001; Constantine, Benard, & Diaz, 1999; WestEd, 2004; 2009)

The RYDM (Constantine & Benard, 2001; Constantine, Benard, & Diaz, 1999;

WestEd, 2004; 2009) was developed in California under the CHKS initiative. This measure

posits that external 'assets' (resources) help to meet young people's basic developmental

needs. When these needs are met, the innate internal 'assets' within children are promoted,

enabling achievement of positive outcomes. The RYDM therefore aims to measure school and

family assets, internal resiliency and student engagement. The internal resiliency scale

consists of six factors; cooperation, empathy, problem solving, self-efficacy, self-awareness

and goal and aspirations. This has been found to have high internal consistency (Cronbach's

alpha= 0.94) (WestEd, 2009).

Sharkey et al. (2008[4]) considered the role of school assets in pupil resilience and

school engagement. 'School assets' refer to external resources such as relationships with

teachers and participation opportunities. 'Internal assets' refer to perceived level of parental

support, self-efficacy, self-esteem and perception of the quality of personal relationships.

They aimed to evidence a descriptive model of the relationship between school assets and

student engagement when considering internal assets as a mediating variable. Specifically,

they hypothesised that pupils with low family assets would have the strongest relationship

between school assets and engagement.

Participants were randomly selected from the CHKS. Participants were split into two

groups; calibration (of the RYDM) and validation (of the proposed model) and structural equation

modelling was used. For all family assets groups, there was a direct and significant relationship

between school assets, internal resilience and student engagement. This relationship was not

significantly different for the low family asset group compared to the other groups, as

hypothesised. The authors argue that school assets are positive for all pupils.

For all groups, there was a direct relationship between school assets and internal

resilience, however, this was stronger for the family risk group. Self-concept and

interpersonal skills partially mediated the relationship between school assets and student engagement when the sample was analysed collectively.

Only schools which had voluntarily chosen to include the relevant module of the CHKS were included. It is possible that these schools had particular characteristics which are not measured, such as being more invested in the programme. The lack of detail in the randomisation and the potential confounding variable of selection bias, questions the quality of this research (Kmet et al., 2004).

The RYDM was also used in Johnson & Lazarus' (2008[3]) exploration of the specific mental health needs of a population of South African teenagers, their strengths, the support they are able to access and the role of the HPS approach on improving well-being.

They compared historically disadvantaged and advantaged schools. Disadvantaged school classification was based on factors such as being in an area of low cost housing, low SES, high class numbers and diverse populations. Advantaged schools were classified due to facilities, known achievements and a greater 'white' (p. 21) population. Focus groups and interviews were also conducted to ascertain pupils' views of school-based support. Staff completed the HPS implementation audit.

The authors report percentages only to describe results. Risk behaviours, such as drug use and suicidality, were reported to be different between the two groups. Twenty-nine percent of pupils at advantaged schools and 41 percent of students at disadvantaged schools scored high on school external assets, indicating the need for further development of the school environment in all schools. More pupils in the disadvantaged schools scored high for having caring relationships with adults in school in comparison to advantaged schools.

A larger percentage of pupils at the advantaged school had high scores for internal assets. School connectedness differed by four percent between the advantaged and disadvantaged schools. Pupils at the disadvantaged schools who were engaged in more extreme risk behaviours, scored high on assets in the school environment. Qualitative analysis highlighted difficulties in approaching and trusting staff in both school classifications, although most quotes included in the paper are from pupils in disadvantaged schools.

The HPS questionnaires were given to school counsellors/guidance teachers. Results suggest that staff in the advantaged schools perceived their schools to be adhering to the HPS approach more than disadvantaged schools. The authors suggest this is due to historical bias in resource allocation.

It is unclear how 'high' scores were defined. Similarly, only reporting descriptive statistics limits the extent to which conclusions can be made. Within their definition of resilience, there is a lack of clarity in what they consider to be a 'successful outcome'. There is no acknowledgment of the potential for social desirability bias when pupils reported risk behaviours. Using the race of the pupils as a classification factor when describing schools suggests that there may be some cultural bias.

Castro-Olivo et al. (2013[6]) used the RYDM to explore a proposed ecological model of resilience and violence prevention in schools as opposed to a 'narrow-based' model. This narrow model referred to the focus schools place on self-efficacy and peer relationships on resiliency, and the idea that lack of resiliency leads to violent/maladaptive behaviours. The authors argued that this is too simple and an ecological approach is needed, which includes factors such as school, family, community belonging, self-efficacy and peers. The research

questions focused on which model better defines resiliency and prevents maladaptive behaviour.

Participants who had indicated engaging in anti-social behaviour in the RYDM in a previous study (CHKS) were included. Pupils of mixed race or 'other' ethnicity were excluded from the study. It is unclear why this decision was made.

A modified version of the RYDM was completed by 667,610 pupils, and structural equation modelling was used. The ecological model was argued to be a better model of resiliency and anti-social behaviour. The authors acknowledge that the results do not strictly adhere to all conditions for SEM, however argue that the ecological model explains 82 percent of the variance in scores.

Consequently, the authors argued that school resiliency programmes should focus on the wider ecological factors in young people's lives. They argued for the importance of restructuring extra-curricular activities and close support to at-risk youth in order to promote self-efficacy and peer relationships.

Sample representation is an important factor when considering quality (Kmet et al., 2004). It is unclear why people who described themselves as 'mixed' or 'other' ethnic backgrounds were excluded as this would limit population representation and generalisability. The authors acknowledged the limits of self-report data. The model is based upon data from adolescents who reported engaging in antisocial behaviours, which may be subjective. The results of this research may be different if another outcome was considered.

Lee and Stewart (2013[7]) also hypothesised that many systemic factors are necessary for the development of resilience. This research explored the extent to which the HPS framework

can capitalise on the available protective factors within primary schools. The authors hypothesised that the HPS intervention would increase resilience in pupils.

This research used a quasi-experimental design where 10 schools receiving multi-strategy HPS interventions for 18 months were compared to 10 control schools matched by size, rural or urban location, education type and socioeconomic status. Being in the intervention or control group did not have a significant impact on resilience at the pre-intervention stage. Classes to be included in the data collection were chosen at random. The researchers worked with the intervention schools to create individual HPS priorities. This included communication and shared visions, staff empowerment, creating a structure supportive of implementing the HPS culture and facilitating partnerships with families and communities.

The measures used were a combination of CHKS and the Perception of Peer Support Scale (Ladd, Kochenderfer & Coleman, 1996). Both scales were shown to have high internal reliabilities. Regression analysis explored the impact of demographic variables and grouping on resilience scores. Structural equation modelling was used to identify interrelations between intervention, protective factors and pupil resilience.

In the pre-intervention analysis, all protective factors made significant contributions to explaining pupil resilience. At an 18-month follow-up there was a significant change in the difference between the resilience scores between the intervention and control groups. There was no change in the school connection scores, possibly due ceiling effects. After controlling for demographic variables, HPS intervention, family and school connection, autonomy experience and peer support were all significant predictors of pupil resilience. The proposed model could explain 57 percent of the variance in the resiliency scores. HPS had both a direct and indirect (through protective factors) effect on resilience scores.

The author's state that the HPS approach was "consistently followed" (p. 797), however it is not clear how this was ensured. Using an audit tool as used by Stewart et al. (2004) may increase reliability. The authors acknowledge the attrition problem which may have weakened the statistical analysis, and representativeness of the data, limiting the quality of the research (Kmet et al., 2010).

Child and Youth Resilience Measure (CYRM) (Ungar & Liebenberg, 2011)

The CYRM-28 (Ungar & Liebenberg, 2011) assesses socio-ecological resources relevant to youths' resilience processes; individual, relational, communal and cultural. The questionnaire uses Likert scales and includes questions such as "I know how to behave in different social situations". Additional questions in the CYRM-28 are intended to be developed locally using focus groups to ensure specific population relevance. Adequate internal consistency has been demonstrated, as well as high interclass correlation for all subscales (Liebenberg, Ungar, & Van de Vijver, 2012).

Jones & Lafreniere (2014[8]) used the CYRM-28 to explore the role of microsystems (such as parental relationship and school engagement), mesosytems (nonparental relationships, extracurricular involvement) and the internal factor of self-efficacy on the development of social development in Bahamian adolescents. SES was assessed via a pupil questionnaire which considered whether pupils were on the school lunch programme, got water from a community pump and had financial stability.

Correlational analysis demonstrated that higher school involvement and rating schools positively were associated with higher resilience scores. In the resilience model of parent and non-parental relationships and involvement in activities, positive involvement in school significantly predicted resilience. However, when the self-efficacy variable was added to the

model, positive involvement in school did not significantly predict resilience. The authors concluded that pupils with greater social skills are more likely to be involved in school, but when pupils have other strengths such as positive adult relationships and perceived self-efficacy, involvement in school is less of a strong predictor of resilience. Therefore, school engagement was not a predictor of resilience in the final model.

The authors acknowledged possible selection bias as seventy percent of the target population chose not to take part. As in previous studies, self-report data may have been affected by social desirability bias. Positively, this paper measures adversity for each participant rather than through general statements about the communities in which participants live. This may increase the validity of this research whilst also avoiding some of the potential cultural bias seen in other papers.

Theron et al. (2014[9]) used the CYRM-28 and mixed-methodology research to investigate whether schools which were respectful of children's rights (dignity, respect, opportunities for agency and caregivers upholding their rights) promote resilience. The authors used a socio-ecological understanding of resilience.

A number of risk and vulnerability factors are described regarding the location in which the research took place. Pupils completed the Pathways to Resilience Youth Measure (PRYM) which incorporated measures of risks, resources, school experiences and processes of resilience. A subset of participants who were identified as being resilient by people in their communities were invited to complete a drawing and writing task (Mitchell, Theron, Stuart, Smith & Campbell, 2011) exploring what pupils thought helped them to adjust positively to adversity.

Comparisons in scores of pupils with lowest and highest experiences of agency and respect were made using independent sample t-tests. Conventional content analysis (HsiuFang & Shannon, 2005) was used to analyse the qualitative data.

Analysis of quantitative data demonstrated that pupils who reported their school environment to be supportive of personal agency reported significantly higher scores on the resiliency scale than those who reported school to be less supportive. Similarly, pupils who reported school staff to be respectful had significantly higher resilience scores than those who did not. The qualitative data highlighted the importance of pupil-teacher relationships.

Although the correlations between children's experiences and their resilience scores do not infer causation, the qualitative element does help to provide some explanation for the correlations found. The authors considered the limitations of not measuring individual characteristics which may enable some pupils to form the positive relationships with staff. It is unclear how many of the invited pupils took part and characteristics of these pupils were not considered. Therefore, it is unclear how representative this sample was of the target population. Similarly, only pupils who were considered as resilient took part in the qualitative element, and it was unclear how this was determined.

Liebenberg et al. (2016[11]) considered the role of school ecologies in moderating the relationship between risk and resilience for pupils living in socio-economically marginalised communities. The paper has specific focus on the role of respect and empowerment within schools.

Participating countries were Canada, New Zealand and South Africa. The sample (n= 2387) were part of a bigger Pathways to Resilience study. Two groups of adolescents were identified in each countries sample, those who used formal services and those who did not.

All participants completed the PRYM measure which includes measures of family risk, community risk, school experience as well as a resiliency questionnaire (CYRM-28). Participants also completed self-report questionnaires about family and community risk, and school experience. The school experience questionnaire included items regarding empowerment, agency, education feeling relevant to pupils, and experiencing staff respect.

Perceptions of resilience were higher for pupils in the South African sample when they had greater experiences of respectful schooling and safer communities. Respect from teachers and strong peer support in the Canadian sample was associated with lower reporting of poor parental quality. In the New Zealand sample, pupils who reported better educational resources and empowering school experiences were less likely to report low parental affection. However, young people reporting strong peer support and respectful schooling experiences were more likely to report low levels of parental relationship quality. When analysed together, results indicated that the negative relationship between resilience resources and risk strengthens for pupils with higher scores of respectful and empowering school experiences.

The authors acknowledged that invariance testing did not take place and therefore, cultural differences in the interpretation of the measure may have been present. It is possible that the adverse factors considered in this study may affect people differently across the included age ranges. However, the cross-cultural nature of this research strengthens the generalisability of the results.

Resiliency Questionnaire for Middle-Adolescents in a Township School (R-MATS;

Mampane, 2010)

The R-MATS is a measure developed to help identify resilient and less resilient

learners in a South African neighbourhood by measuring adversity and resilient

characteristics (confidence and internal locus of control, social support, toughness and

commitment and achievement orientation). The measure has been shown to have good

reliability and strong item-scale correlation has been demonstrated (Mampane, 2012).

Mampane & Bouwer (2011[5]) used the R-MATS to investigate the contribution of

school on the resilience of pupils in township schools. A mixed-methods design was used

which involved 291 pupils from two schools completing the R-MATS (Mampane, 2010) to

identify 16 of the most and least resilient pupils to take part in focus groups. The two schools

were both described as dilapidated or poorly maintained, unsafe and disruptive. Focus groups

sought to ascertain the pupil's perception of ways in which schools are helpful. Interactive

Qualitative Analysis (IQA; Northcutt & McCoy, 2004) was used to construct an

understanding of the young people's ideas.

The focus groups had two broad questions; how does the school contribute/fail to

contribute to who you are, and what is it that the school does/fails to do that makes you who

you are? Participants were asked to explore these questions individually prior to working as a

group to integrate their responses into 'affinities'. The researchers then defined each 'affinity'

created by the groups as either primary or secondary drivers, or primary or secondary

outcomes.

One of the groups of resilient adolescents identified that the school environment and

school rules were primary and secondary drivers in their lives whereas the less resilient

adolescents conceptualised school as a place where challenges are managed but placed much

greater importance on their home life as being drivers for who they become. Therefore, the extent to which school was perceived as helpful depended upon individuals own resilience. Both resilient and less resilient pupils discussed the lack of resources within their school. The authors concluded that resilient learners can feel unsupported by their schools whilst less resilient learners look to their schools to provide support.

This paper offers a unique insight into the resilience of school pupils by comparing resilient and less resilient pupils, determined by a validated measure. The results are difficult to generalise beyond the specific population for which the measure is designed, however this does provide relevant research for this population. When considering quality criteria for qualitative research (Kmet et al., 2004), this paper demonstrated that the participants were carefully selected to represent a range of resiliency levels. The quality control within the analysis of the data is unclear.

The Resilience Scale (Wagnild & Young, 1993)

The Resilience Scale (RS) measures individuals' capacity to manage the stressors of life and to take meaning from life's challenges. Subscales measure personal competence and acceptance of self and life subscales. Perseverance, equanimity (having a balanced perspective of life), meaningfulness in life, self-reliance and existential aloneness are the five resilience characteristics measured. The measure was initially validated with American women who had been identified as having overcome adversity. Wagnild (2009) reviewed the use of the scale in adolescent populations and found the Chronbach's alpha to range between .72 (Hunter & Chandler, 1999) and .91 (Rew, Taylor-Seehafer, Thomas & Yockey, 2001).

Read et al. (2015[10]) researched the effectiveness of two development programmes which were implemented within a school due to increasing cultural diversity. Two

professional development programmes were delivered to staff; 'understanding poverty' based upon work by Payne (2005) and 'difference differently' (Together for Humanity, 2013). Staff were supported to reflect on their own values and beliefs and how this was incorporated into their pedagogical approach. Key messages were summarised and staff were expected to assimilate these into their interactions with pupils, such as maintaining high expectations for all pupils, irrespective of background. Professional learning communities were created and staff were encouraged to draw on evidence-based approaches when making decisions.

Pre and post implementation of these programmes, pupils completed questionnaires measuring their perception of school climate and wellbeing, resilience (the RS), self-anchoring and moral identity. The authors reported statistically significant improvements in the teacher support, affirming diversity and reporting and seeking help elements of the school climate measures, and all elements of the pupil agency questionnaire (including resilience), although all effect sizes were small.

Potential limitations of this study are not discussed by the author. A potential confounding variable might be the length of time at school as the measures were completed 18 months apart. Having a second school acting as a control would help to more confidently attribute these changes to the intervention (Kmet et al., 2004). The pupil participants were all from one year group and may not represent the whole school and attrition was not discussed. A strength of this paper is the use of the pupil's perspectives in measuring change, although it is unclear whether they were blind to the intervention.

Summary of findings

The aim of this review was to determine whether whole school factors affect resilience in pupils. When considering the whole school approach of the HPS agenda, Lee

and Stewart (2013[7]) and Stewart et al. (2004[2]) conclude that this approach does improve

resilience. Johnson and Lazarus (2008[3]) demonstrated how the extent to which schools can

commit to the HPS agenda could depend on availability of resources. The HPS research could

be strengthened if HPS could be compared to a second intervention in schools matched for

levels of additional support provided, for example.

Similarly, Read et al. (2015[10]) reported benefits from a school wide programme

focused on improving the school climate and well-being of pupils. Both HPS and the

programme implemented by Read et al. (2015[10]) were partly focused on linking schools and

communities, but were otherwise based on quite different principles. Being respectful of

children and their rights has also been found to be associated with fostering resilience in

schools both when staff access specific training to improve this (Read et al., 2015[10]) and by

pupils (Liebenberg et al., 2016[11]; Theron et al., 2014[9]).

School may have a greater importance for pupils in families with lower levels of

support (Sharkey et al., 2008[4]; Liebenberg et al., 2016[11]). A number of papers highlight the

importance of pupils having positive relationships with staff in school in improving resilience

(Stewart et al., 2004[2]; Stewart & Sun, 2004[1]; Theron et al., 2014[9]) as well as positive peer

relationships (Stewart & Sun, 2004[1]; Liebenberg et al., 2016[11]). The physical school

environment was also identified as an important factor in fostering resilience (Johnson &

Lazarus, 2008[3]; Stewart et al., 2004[2]; Mampane & Bouwer, 2011[5]). However, these

conclusions should be treated with caution due to a number of methodological factors.

Discussion

Research seeking to measure effectiveness of schools in resilience promotion would

ideally be based on a robust definition of resilience, would be longitudinal and would measure

both individual pupil characteristics in addition to characteristics of school. Measures of

community and family resources and outcomes such as well-being would also be needed. In a follow-up stage, measures of adversity would be completed and the initial measures repeated. This may go some way to enable a comparison of resilience for pupils who have and have not faced adversity. However, the subjectivity of adversity would remain and adversity prior to the research would be difficult to control for. Whilst this research would still be problematic, it demonstrates how far resilience research needs to develop.

There are differences and commonalities in the way in which the five resilience measures in this review conceptualise resilience. The SRS, RDYM and CRYM include both internal and external resources. The R-MATS and RS focus more on individual characteristics such as having an internal locus of control and perseverance. Whilst measures of resilience are argued to be pivotal in enabling resilience research to progress (Windle et al., 2011), these discrepancies lead to questions about the reliability of resilience research.

Similarly, there are differences in the theories used in resilience measures. For example, the RDYM asserts that resilience is an internal and innate quality that reaches its potential with the help of external resources, whereas the CRYM has a broader socio-ecological approach by considering community and cultural resources to be more directly linked to resilience promotion. These differing approaches can lead to difficulties when making comparisons between studies to determine intervention efficacy.

Whilst the measures focusing on resources share commonalities in theoretical underpinning, there are differences in the way resources are considered. The CRYM and RMATS both highlight the importance of cultural specificity within resilience and include questions which are tailored towards the research population. Other measures appear to not allow for this level of cultural consideration.

Cultural bias may have played a significant role in a number of the papers above. Stewart and Sun (2004[1]) used the SRS (a measure developed in California) in research regarding Indigenous communities in Australia. The relevance of this measure in this community is unclear. Liebenberg et al. (2016[11]) were not able to ascertain the extent to which the CYRM was understood by the different countries within their study, questioning the validity of the research.

The term 'resilience' implies the presence of adversity, however, the definition of adversity is inconsistent. Mampane & Bouwer (2011[5]), Theron et al. (2014[9]) and Johnson and Lazarus (2008[3]) comment on the factors present within communities to describe adversity. Catro-Olivo et al. (2013[6]) inferred adversity through antisocial behaviour whereas Liebenberg et al. (2016[11]) differentiated participants by whether they had used 'formal services' or not. Other inferences of adversity included having access to drinking water via a village pump (Jones & Lafreniere, 2014[8]) and living in a community with a high number of single parent families (Stewart & Sun, 2004[1]). There is little consideration of the potential for resources within these communities which may infer strength, such the availability of extended family. None of the papers in this review took place in the UK and therefore the generalisability of the results to the UK culture is uncertain.

Nine of the 11 studies included in this review use a cross-sectional research design which does not enable causation of significant relationships to be determined. Theron et al. (2014[9]) and Mampane and Bouwer (2011[5]) both had comparison groups in their studies which strengthens the argument that independent variables may directly impact dependent variables, but causation still cannot be implied. Lee & Stewart's (2013[7]) use of a control group potentially provides more robust research findings and matching the schools allowed for greater control of potential confounding variables. Whilst Read et al. (2015[10]) compared

resiliency scores pre and post intervention, without a control group it is difficult to attribute the improvement in resiliency scores to the intervention alone. The mixed-methods methodologies adopted by Theron et al. (2014[9]) and Mampane and Bouwer (2011[5]) added some depth to the quantitative findings and highlighted the importance of the pupil-teacher relationship and the need for schools to provide adequate resources. Caution should be used when considering the HPS research as it is suggested the same data and sample has been used multiple times.

With the exception of Castro-Olivo et al. (2013[6]), the research in this review took place in mainstream schools. It is unclear how these findings would translate to specialist education provisions in the UK where children attend due to the complexity of their needs. It could be argued that specialist provisions are provided for some of the more vulnerable young people. Given the government focus on schools promoting resilience to prevent mental health difficulties (Department for Education, 2016), perhaps greater attention should be given to the potential for resilience promotion in these schools.

CastroOlivo et al. (2013[6]) found that a socio-ecological model approach to resilience was much stronger than a narrower model. This is supported by research which found protective and promotive factors in school are important for all pupils, not just those 'at risk' (Sharkey et al., 2008[4]). However, when the papers are considered collectively, a socio—ecology approach is not fully supported, predominately due to poor validity and reliability of the measures and the lack of consistency of the conceptualisation of resilience. The different conceptualisations of resilience supports the concept of equifinality outlined by Ungar et al. (2013). The differential impact element of Ungar et al.'s (2013) theory is reinforced by the different definitions of adversity for different samples, for example. The extent to which this was found to be culturally specific supports the contextual and cultural moderation element of Ungar et al.'s (2013) theory.

When considering the quality assessment tool, a number of strengths and weaknesses of the papers are identified. Kmet et al. (2010) highlight the need for robust data collection tools and despite the theoretical concerns regarding measures of resilience, these papers all used a measure, rather than inferred resilience. Large participant numbers have been used, particularly in the HPS projects. Completing research in township schools (Mampane & Bouwer, 2011[5]) and in a school where specific cultural challenges had been identified (Read et al., 2015[10]) demonstrates the extent to which research is being used to carefully consider these groups. This is both important and commendable.

Implications

Research implications

Difficulties arise when attempting to compare and consolidate resilience research due to the underlying constructs being contrarily defined. This review highlights the necessity for on-going, longitudinal research regarding the impact of school on resilience, using validated measures. However, consideration needs to be given to how resilience and adversity are defined and consequently measured.

Research completed in the UK and in specialist schools is needed to determine whether these approaches are applicable. Given the cultural specificity of resilience and adversity, and the challenges regarding the validity of these measures, mixed methodological approaches may increase understanding of resilience processes, and the ecological validity of this research. Individual differences were scarcely considered and future research could consider the potential importance of factors such as trait emotional intelligence which is a significant predictor of reduced emotional and behavioural difficulties in young people (Poulou, 2014).

Clinical implications

Despite the complications of research in this field, the 11 studies all conclude that schools are important in resilience development. However, whilst this trend can be seen, the number of limitations in the research, the lack of consistency in resilience definitions used when measuring resilience does not lead to confidence in these conclusions. Several papers discussed the importance of relationships within school and the broad school culture but the impact of these factors is uncertain. School psychologists need to consider what adversity and resilience means for their pupils and what would be considered a good outcome for individuals. Only then, perhaps, can schools consider how they would measure such processes.

By focusing on all pupils, rather than those who are considered 'at risk', schools have the opportunity to maintain and promote positive outcomes. In addition to minimising distress, improving mental health outcomes in schools could have a positive effect on reducing pressure on specialist services.

Conclusion

Schools appear to be able to offer young people peer and adult support and an environment that can be helpful for all pupils. However, the complexities of understanding resilience and adversity as constructs make it difficult to come to any firm conclusions about what and how school approaches are helpful for young people in enabling them to manage adverse life events. Further testable theories are first needed to increase our understanding of resilience and adversity in a culturally relevant and applied way. Longitudinal research is needed to more robustly test predictions of resilience processes and outcomes.

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VICTORIA NEVILLE BSc (Hons), MSc

THE ROLE OF SCHOOLS IN FOSTERING PUPIL RESILIENCE.

Section B:

Resilience-promoting processes in schools for pupils with social, emotional and behavioural difficulties.

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SALOMONS

CANTERBURY CHRIST CHURCH UNIVERSITY

Abstract

This study investigated the role of specialist provisions for pupils with social, emotional and behaviour difficulties (SEBD) in fostering resilience. The role schools play in resilience development was considered by measuring the association between the length of time a pupil had been in school with resilience resources and vulnerability, measured by a standardised measure. Furthermore, possible ways in which resilience might develop in school were considered by exploring the potential mediating variables of having a sense of connection to school and a significant peer relationship in school. The role of trait emotional intelligence (TEI) was also explored in this model by adding individual TEI as a moderating factor.

Thirty-eight pupils from two SEBD schools took part in completing self-report questionnaires with the researcher. The length of time pupils spent in specialist schools was found to be predictive of both resilience resources and vulnerability, however none of the proposed variables explained this association. Exploratory analysis found TEI alone to be the most significant predictor of resilience outcomes. The theoretical implications are considered. The difficulties in measuring resilience as a construct are discussed, as well as the importance of completing research with this population, despite the challenges.

Keywords: resilience, emotional intelligence, SEBD school, adolescence

Introduction

This paper aims to explore the role of specialist schools in fostering resilience in their pupils. It begins by discussing definitions and theories of resilience, before considering the potential role of schools in supporting young people to develop resilience.

Resiliency

Whilst the definition of resilience remains open to dispute, resilience is popularly thought of as the ability to 'bounce back' in the face of adversity. Windle's (2011) understanding of resilience includes two separate aspects that are key to the construct: having access to, and making use of, both external and internal resources, and being exposed to adversity or trauma from which to recover/bounce back from. Newman (2004) suggests that for children and young people, resilience is fostered by managing the exposure to risk, having the opportunity to exert agency, having strong relationships with significant others, a positive school environment and a capacity to reframe adversity. Intrinsic characteristics (such as having a secure base and self-efficacy) and extrinsic characteristics (having a secure attachment figure and positive school and community experiences) have also been described as necessary for the development of resilience (Daniel & Wassell, 2002).

In this context, 'resilience' therefore describes an interactive process between an individual and the systems around them in order to access and use internal and external resources effectively to overcome adversity. This understanding is distinctive from 'resiliency', which refers to individual outcomes measured after adversity, such as low mood (Luthar & Zelazo, 2003). This distinction between accessing and using resources or considering outcomes following adversity is important in resilience measurement: the former would involve quantifying protective factors whereas the latter would measure individual well-being or achievements, for example. These differences are reflected within the

literature, where some research has sought to ascertain relevant contextual factors (such as Graber, Turner & Madill, 2016), whereas other research focuses on measuring individual outcomes such as the absence or presence of psychological distress or academic attainment, (for example, Dunstan & Todd, 2012). This contrast in approach to resilience leads to difficulties when trying to summarise and compare research.

Several further difficulties arise in summarising research due to the complex nature of resilience itself. For example, the subjectivity of adversity and trauma, the question of what a positive outcome may be for an individual, and the developmental nature of trauma (Gewirtz & Edleson, 2007), leads to marked differences between individuals and, consequently, research. Similarly, it remains unclear whether someone can be thought of as resilient without experiencing adversity (Kaplan, 2013) which makes it difficult to generalise from much of the cross-sectional literature.

Given the wide-ranging research, for the purpose of this study, a narrow definition of resilience is used where resilience is defined as the resources accessed and utilised by an individual following adversity. This definition will be further elaborated within the theoretical section.

At the opposite end of this definition of resilience, the term 'vulnerability' is used to describe when children do not perceive they have these resources to manage adversity, (Anthony, 1974; Rutter,1990). Vulnerability is often measured in terms of emotional reactivity (Prince-Embury, 2011). Measuring vulnerability is associated with potential difficulties experienced by young people, such as depression, and therefore it is argued that vulnerability is associated with a young person's inability to bounce back from adversity (Prince-Embury, 2006; 2007). However, due to the number of different ways in which young people manage and experience adversity, and the subjectivity and difference in the

understanding and measuring of recovery, the concepts of personal resources and

vulnerability should be treated with caution.

In the next section the theoretical underpinning of resilience is explored, before

considering variables identified in the literature as important to resilience development.

Theories of resiliency

Resilience was initially conceptualised as an individual and intrinsic characteristic

(Anthony, 1974). The first wave of resilience research focused on both individual factors

which distinguished people identified as resilient, and different factors within individuals'

environments which might contribute to people achieving good outcomes. For example,

Masten (2001, 2007) generated a 'short list' of factors which had been identified as

associations between individual and environmental factors, and good outcomes (see Table 1).

Table 1.

Protective factors associated with resilience (Masten, 2001;2007, a*dapted from O'Dougherty Wright, Masten & Narayan, 2013, p. 21).*

Child characteristics
Social and adaptable infant temperament
Cognitive competence
Ability to form and maintain friendships
Ability to manage emotion and behaviour
Positive self-concept (self-efficacy, self-esteem, confidence)
Positive view of life, including a sense of meaning in life
Characteristics considered valuable by culture and self (such as attractiveness, self of humour)
Family characteristics
Stable and supportive
Positive relationship between parents
Positive relationship with caregiver
Warm and authoritative parenting approach
Good relationship with siblings
Supportive extended family
Parental interest and involvement in education
Socioeconomic and educational advantage of parents
Faith and religious involvement
Community characteristics
Safe, clean neighbourhood with low violence rates
Good housing
Access to activities
Effective schools
Good teaching staff
Extra-curricular activities
Good resources for activities
Employment
Good healthcare and emergency support
Availability of adult support
Cultural characteristics
Protective policies regarding children and families
Recognised value of education
Protection from oppression and political violence
Rejection of violence

Whilst these identified factors were useful in understanding the different facets of

resilience, little was understood regarding the processes which enabled these factors to be

effective. The second wave of research attempted to explore these processes and identified

the developmental systems argued to have a causal relationship to resilience development,

and began distinguishing between normative and pathological development (Masten, 2006; 2007). This resulted in greater importance being given to the interactions between individuals and the systems around them, which enabled the factors identified in Table 1 to be utilised. The third wave of resilience research focused on resilience promotion, particularly for high-risk groups (O'Dougherty Wright et al., 2013).

Resilience is often considered from a socio-ecological perspective (Ungar, 2005; 2011; Ungar, Ghazinour, & Richter, 2013), where resources in children's environment are believed to be crucial in increasing positive outcomes, by promoting individual resources. Individual characteristics of the child, their family system and their external environment have been argued to be the three most pertinent factors (Garmezy, 1991; Werner & Smith, 1992).

Fonagy, Steele, Steele, Higgit & Target (1994) summarise that "resilience cannot be seen as anything other than a set of social and intrapsychic processes which take place across time given felicitous combinations of child attributes, family, social and cultural environments" (p. 223). Analogous to Bronfenbrenner's (1979) model of human development, a socio-ecological approach to resilience focuses on the influence and impact of systems such as society, community, family, culture as well as physical ecologies. There is a more recent shift in theory and research towards focusing on how these different systems interact to both promote resilience as well as minimise risk. Ungar et al. (2013) argues, however, that ensuring the systems around an individual are protective, and therefore minimising risk exposure, is more effective than individuals managing risk after adversity.

The role of schools

School is a significant part of a young person's daily life. As identified in Table 1, school is an important part of community resources believed to promote resilience. Masten

(2001; 2007) identified teaching staff, activities and resources as key elements in fostering resilience in school. According to the Department for Children, Schools and Families (2015), schools have a responsibility to promote resilience in their pupils, although in line with the arguments above, the definition of resilience in this context is unclear.

Morrison and Redding Allen (2007) used a socio-ecological approach to resilience development when suggesting ways schools can promote resilience development. They considered the classroom as an environment where students can be supported to develop confidence, autonomy, a sense of purpose and suitable levels of personal challenge (Phillips, Boutte, Ziger, & Finn-Stevenson, 2004). When considering Table 1, this suggests that schools are important in promoting the development of many of the child characteristics identified.

As identified in Table 1, having the ability to make and maintain friendships is important in developing resilience (Stewart & Sun, 2004). Positive associations have been found between levels of friendship quality and resilience (Graber et al., 2015). Irrespective of social competence, confidence and preference for close relationships, young people can make a single, relatively close relationship within school (Finkenauer & Righetti, 2011). Graber et al. (2015) specifically found that the relationship between friendship and resilience was partially mediated by developing constructive ways of coping, being encouraged to make efforts, reducing externalised coping.

Other child resources identified in Table 1 have been found to be promoted by the school environment, such as emotion management and behaviour (Blatchford, Pellegrini & Baines, 2016) and self-concept (Morrison & Redding Allen, 2007). By enabling pupils to experience a sense of achievement, schools promote self-concept and individual's sense of meaning in life (Blatchford et al., 2016).

Processes associated with resilience development in schools

A number of researchers have attempted to understand the processes which may enable schools to promote the child characteristics noted above. For example, Prince-Embury (2006) suggested social relationships in school "buffer" children and young people from adversity through perceived social support, as well as internal mechanisms, such as the ability to trust.

Morrison and Redding Allen (2007) argued that sense of community and clear behaviour standards enable pupils to gain autonomy. Individual relationships between pupils and school staff are posited to enable the development of social competence.

Being more involved in school is argued to be predictive of resilience (Jones & Lafreniere, 2014. The extent to which schools are respectful of children's rights and provide a supportive environment are also important factors (Theron, Liebenberg & Malindi, 2014; Liebenberg et al., 2016). Specific staff training, such as diversity training, has also lead to improvements in pupil's resilience (Read, Aldridge, Ala'L, Fraser & Fozdar, 2015).

Using an attachment framework, Bomber (2007) describes the need for children who are exposed to adversity and have attachment difficulties to have a significant attachment figure in school to enable development of emotional skills. Poulou (2015) found teachers' leadership and helpful/friendly behaviours were related to pupils positive social skills. The teacher-student relationship may be particularly influential for pupils with behavioural difficulties (Henriecsson & Rydell, 2004; Hughes, Cavell & Wilson, 2001).

If the socio-ecological model of resilience (Ungar, 2005; 2011; Ungar et al., 2013) is valid, and school is a significant part of a child's ecology, schools may be likely to provide an opportunity to promote and develop personal resources for young people.

Accessing school is considered a fundamental part of childhood, with schools aiming to provide protective factors throughout a pupil's time in school to prepare them for life (Esquivel, Doll & Oades-Sese, 2011). However, it is unclear how pupil's resilience resources develop over time.

The role of trait emotional intelligence

Whilst the research stated above describes the school-based processes which have been argued to promote personal resources, individual factors have not been considered within this context. A socio-ecological approach would theorise that although schools may provide an enabling environment, different pupils may be able to use school resources to different degrees depending on their internal characteristics.

For example, emotion regulation has a significant effect on positive behaviour and social adaption (Eisenburg, Fabes, Guthrie & Reiser, 2000). Goleman (1995) argues that both personal emotional competencies (self-awareness, self-regulation and motivation) and social competencies (empathy and social skills) are required to enable resilience. Emotional intelligence literature differentiates between ability emotional intelligence, (a cognitive ability usually measured by performance testing) and trait emotional intelligence (TEI), which is associated with individuals' abilities to understand emotions (Bar-On, 2000). Four emotional skills have been identified as key descriptors of TEI: being able to perceive emotions, integrate emotions with thoughts, understand the causes and consequences of emotions and being able to manage emotions for personal adjustment (Mayer & Salovey,1997; Salovey, Bedell, Detweiler & Meyer, 1999; Salovey, Kokkonen, Lopes & Mayer, 2004). In addition to TEI being associated with better mental health (Martins, Ramalho, & Morin, 2010; Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2007), it has been argued to be an antecedent to resilience (Matthews, Zeidner & Roberts, 2002).

However, much like resilience, TEI is a construct that has been subject to much

debate. The challenges to this construct have been summarised into three key difficulties

(Matthews et al., 2006):

Definition: The definition can be so broad that the term lacks meaning (Locke, 2005).

Subjectivity: TEI is difficult to measure as responses to questions regarding emotional

regulation, for example, may not have an absolute 'right' or 'wrong' answer (Matthews et al.,

2002).

Similarity: Some theorists argue that TEI is indistinguishable from other constructs

such as personality traits (Matthews et al., 2006).

Despite these challenges, TEI appears to have been a helpful construct in building

understanding of the complexities of both the personal and interpersonal. However, the

challenges identified above highlight that caution should be used when examining the

construct of TEI. For the purpose of this research, TEI will be defined as a construct which

attempts to conceptualise individuals' understanding of emotions and the internal world of

both the self and others and thus encapsulates many of the emotional factors which have been

linked to personal resources needed for resilience (Petrides, Pita & Kokkinaki, 2007).

However, the limitations highlighted above will be considered.

Whilst research does suggest that TEI may be a predictive factor or an antecedent in

resilience, the processes involved are not clear.

Specialist education provisions

The Targeted Mental Health in Schools (DCSF, 2015) document highlights

the importance of schools' contributions towards the mental health of pupils. However,

children who attend schools for young people experiencing social emotional and behavioural

difficulties (SEBD) are largely absent in research (Cooper, 2008). Whilst some research

explores the outcomes of pupils excluded from mainstream provisions who attend Pupil

Referral Units, (PRU) (e.g. Hayden, 1997; Parsons et al., 2001; Wright, Weekes, &

McGlauglin, 2000) the non-academic outcomes of pupils who attend specialist provisions are

less well documented.

The importance of resilience for this population is highlighted by research

which suggests that forty-four percent of children with additional educational needs have

experienced mental health difficulties, in comparison to six percent of children without these

needs (Quinn, Epstein, Cumblad & Holderness, 1996). Low self-esteem and reduced

academic, social and general function are identified difficulties faced by pupils in SEBD

provisions (Place, Wilson, Martin & Hulsmeier, 2000).

There is a gap in understanding of the role of protective factors and personal

resources in the promotion of resilience for pupils in specialist provisions. Similarly, it is

unclear how these provisions can most effectively engage in resilience promotion work.

The proposed model

In Masten's (2001, 2007) 'short list' of factors associated with resilience, individual

child characteristics (including the ability to form and maintain friendships) and school

factors are identified as being important. In addition, Graber et al. (2015) recognised the

importance of significant friendships in fostering resilience of pupils attending a mainstream

school. The importance of friendships within SEBD schools has not been explored and may

be important when supporting this group. Additionally, as outlined above, schools may foster

resilience by enabling pupils to feel connected to school and by having a positive and

inclusive school climate (Morrison & Redding Allen, 2007; Poulou, 2015). The extent to

which this is important and effective within SEBD schools has not been explored.

As outlined above, due to the emphasis on understanding and managing emotions, TEI may be a necessary part of forming and maintaining of friendships, relationships with school staff and connecting to school. The role of TEI in predicting friendship and school connection is unknown among this population. Increasing the understanding of the role of TEI in a model of resilience may be beneficial when considering the most effective ways in supporting young people.

A socio-ecological theory of resilience suggests that having access to protective factors and personal resources in environments is fundamental in adjustment to adversity (Ungar, et al., 2013). Therefore, this research is proposing a model in which it is hypothesised that spending time in a specialist school, where a number of protective factors are potentially available, will increase personal resources associated with resiliency and will also reduce vulnerability. Spending longer in a school environment may contribute to the extent to which personal resources can be developed (Blatchford et al., 2016). To explore the process by which resilience development may happen, a number of factors are considered as possible mediators and moderators of this potential association. This is a protective factor model where resources are argued to modify the relationship between risk and outcome, as opposed to a compensatory model where protective factors are associated with minimising exposure to risk (Zimmerman, 2013). This type of model has been chosen due to the focus on resilience-promoting processes, rather than considering only the protection from adversity that schools may offer.

This study therefore proposes a socio-ecological model of resilience and will explore how the length of time pupils spend in SEBD schools impacts personal resources associated with resilience and vulnerability. It is hypothesised that this interaction may be mediated by having a positive peer relationship within school and a sense of connection to school. It is

also proposed that the ability to form these connections will be moderated by young people's levels of TEI.

Whilst there are a great number of variables which have been associated with resilience, the above variables have been chosen due to the specific interest in school as a resource and the opportunities schools offer for friendships and connectivity to develop. The proposed model also allows for the exploration of how individual and community resources may interact and is therefore an example of a socio-ecological model. However, it is likely that a number of other factors may contribute to the protective nature of school (such as academic successes and physical safety) and therefore the limitations of the model will be considered.

Operationalisation of the variables

As identified above, measuring resilience and associated variables is problematic due to discrepancies in definition and subjectivity. One measure of resilience which is focused on measuring personal resources is the Resiliency Scale for Children and Adolescents (RSCA; Prince-Embury, 2007). This measure was chosen as it fitted in with the socio-ecological theory underlying this research as well as measuring some important individual characteristics which could arguably be developed in a school environment. It is also a measure that used in other similar studies (Prince-Embury, 2011), and has been well validated for the age range under study (Prince-Embury, 2006; 2007).

The RSCA uses a self-report questionnaire to assess pupil's perceptions of their sense of mastery and relatedness which are two child characteristics reported in Table 1. Having a sense of mastery is argued to enable children to experience cause and effect which is key to developing problem-solving skills (White, 1959). Prince-Embury (2011) summarises that

succeeding in a school environment may be partially dependent on mastery and consequential experiences of success.

Prince-Embury (2011) also suggested that having a sense of relatedness is protective when facing adversity due to the potential for supportive relationships to be formed. Referring to Erikson's (1963) stages of social-emotional development, Prince-Embury (2011) highlights the importance of having the capacity to trust others when facing adversity.

In addition to mastery and relatedness, the authors include a measure of emotional reactivity which is argued to be associated with problematic development when children face adversity (Gewirtz & Edleson, 2007). Prince-Embury (2011) proposed that a high level of emotional reactivity is associated with increased risk of difficulties when facing adversity.

The RSCA works by generating a score of resources using the mastery and relatedness scale, and this score is subtracted from the reactivity score to generate a score of vulnerability. The limitations of this measure will be considered.

As discussed above, TEI is a construct with a number of conceptual challenges which make measurement problematic. However, Petrides (2009) developed a measure which they claim assesses an individual's emotional world. This measure, the Trait Emotional Intelligence Questionnaire (TEIQue), is based on the idea that TEI is a personality trait. The measure is designed to generate a global TEI score which is argued to overlap with the concept of coping strategies, where TEI can maximise the positive effects of coping strategies and minimise the negative effects of maladaptive coping strategies (Davis & Humphrey, 2012a). The adolescent version of this measure was used in this research due to previous validation within this age group (Siegling, Vesely, Saklofske, Frederickson & Petrides, 2017).

The extent to which pupils are able to make and maintain friendships has been measured by the Mc Gill Friendship Questionnaire- Friendship Functions (Mendelson & Abound, 1999). This measure assesses friendship qualities, stimulating companionship, helpfulness, intimacy, reliable alliance, self-validation and emotional security. The ability to make and maintain friendships has been associated with resilience (see Table 1) and this measure explores the extent to which individuals form these relationships.

Similarly, schools are identified as an important community characteristic in the development of resilience (see Table 1) and can provide the opportunity for individuals to experience a sense of belonging and access to adult support (Osterman, 2000). The Psychological Sense of School Membership questionnaire (Goodenow, 1993) is a measure that has been used to measure a pupil's sense of belonging, or connectedness, to their school.

Rationale for current study

This study proposes a socio-ecological model of resilience and will explore the extent to which the length of time pupils spend in SEBD schools impacts resilience resources and reduces vulnerability. It is hypothesised that this interaction may be mediated by having a positive peer relationship within school and a sense of connection to school. However, it is proposed that the ability to form these connections is moderated by young people's levels of TEI.

Hypotheses

Hypothesis 1a: The length of time in school (TIS) will be positively associated with

resilience resources.

Hypothesis 1b: TIS will be negatively associated with vulnerability.

Hypothesis 2a: The association between TIS and resilience resources will be significantly

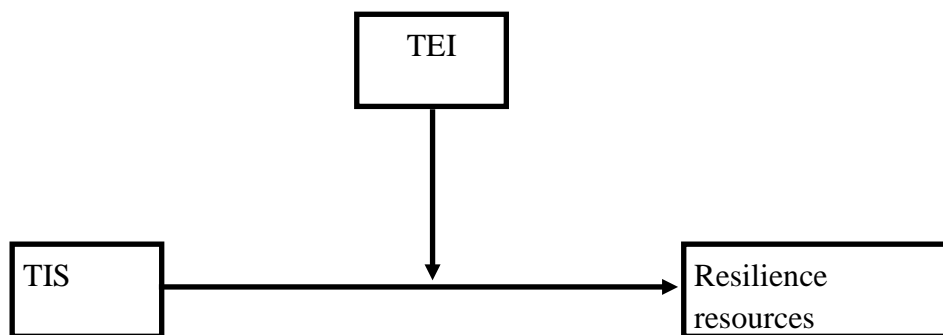moderated by TEI. See conceptual model in Figure 1.

Figure 1. Conceptual model of hypothesis 2a, where TEI is a significant moderator of the
association between TIS and resilience resources.

Hypothesis 2b: The association between TIS and vulnerability will be significantly
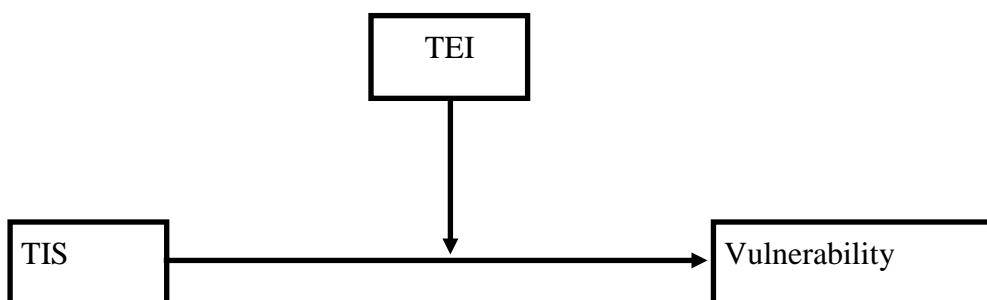
moderated by TEI. See conceptual model in Figure 2.

Figure 2. Conceptual model of hypothesis 2b, where TEI is a significant moderator of the
association between TIS and vulnerability.

Hypothesis 3a: The association between TIS and resilience resources will be mediated by

having a peer relationship in school and a connection to the school.

Hypothesis 3b: The association between TIS and vulnerability will be mediated by having a peer relationship in school and a connection to the school.

Hypothesis 4a. Having a positive peer relationship in school and a positive school connection will function as a mechanism through which TIS influences resilience resources. The strength of this mechanism is contingent on individual TEI. See Figure 3.

Figure 3. Conditional process model demonstrating the hypothesised indirect effect of TIS on resilience resources through peer and school connection as moderated in 'first stage' by TEI.

Hypothesis 4b. Having a positive peer relationship in school and a positive school connection will function as a mechanism through which TIS influences vulnerability. The strength of this mechanism is contingent on individual TEI. See figure 4.
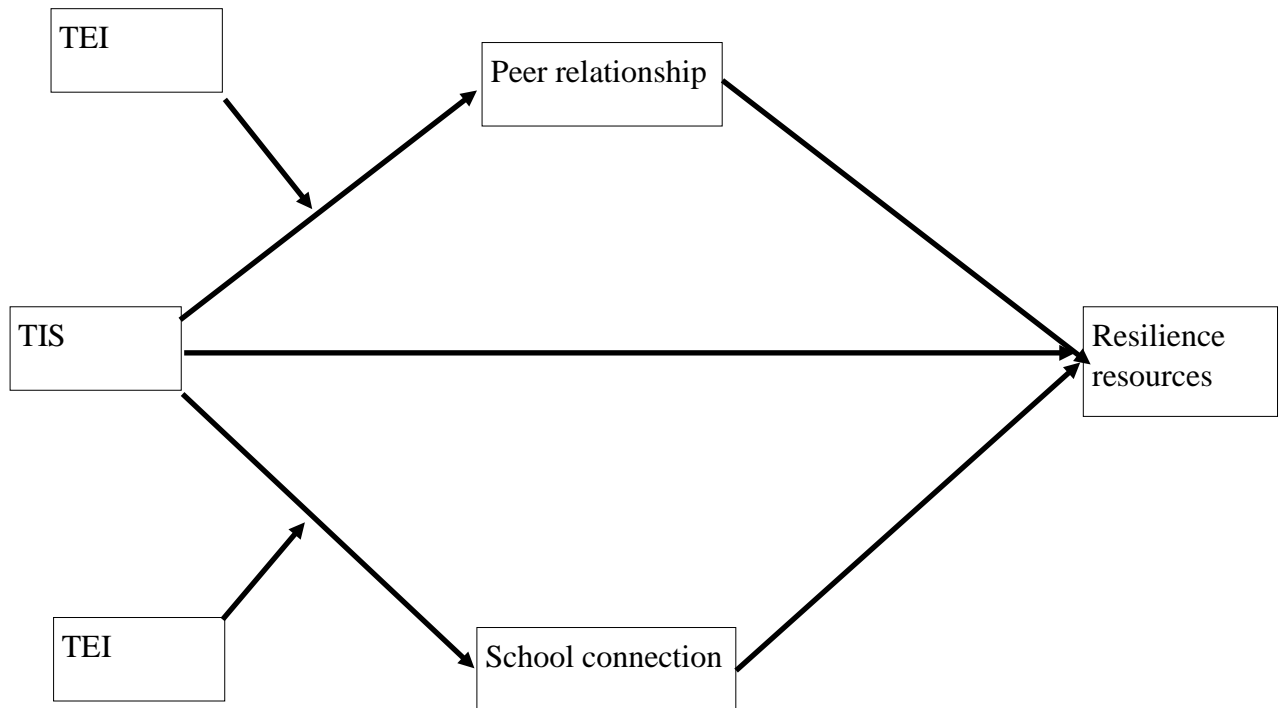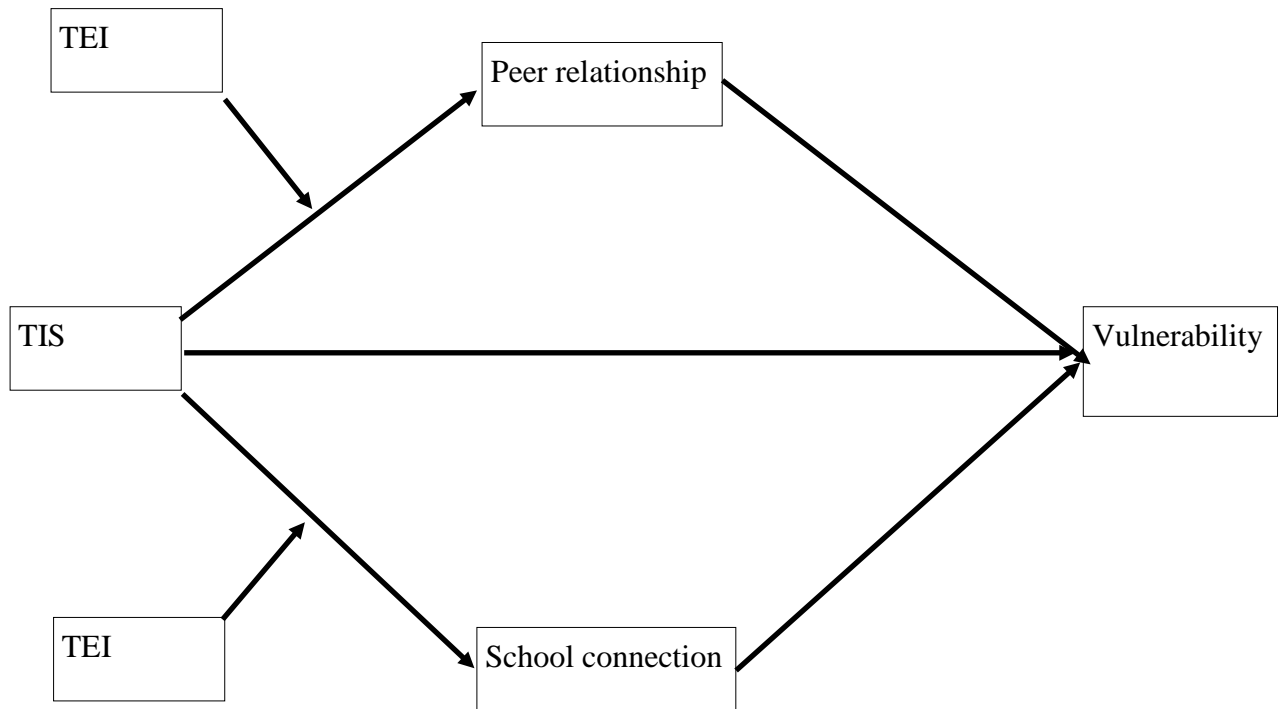
Figure 4. Conditional process model demonstrating the hypothesised indirect effect of TIS on vulnerability through peer and school connection as moderated in 'first stage' by TEI.

The proposed model above is only feasible if there is an identified interaction between TIS and the hypothesised mediators. If this interaction is not found, an alternative hypothesis would be tested, where TIS and all other variables would be considered as each being similar predictors of resilience.

Hypothesis 5a: TIS, TEI, school connection and significant school peer relationship all have relatively equal importance as contributing predictive variables in the development of resilience resources.

Hypothesis 5b: TIS, TEI, school connection and significant school peer relationship and all have relative importance as contributing predictive variables of vulnerability.

Hypothesis 5a and 5b are depicted in Figure 5.

Figure 5. Model to illustrate hypothesis 5a and 5b, where all predictor variables contribute towards the outcome variable of resilience resources (positively) and vulnerability (negatively).
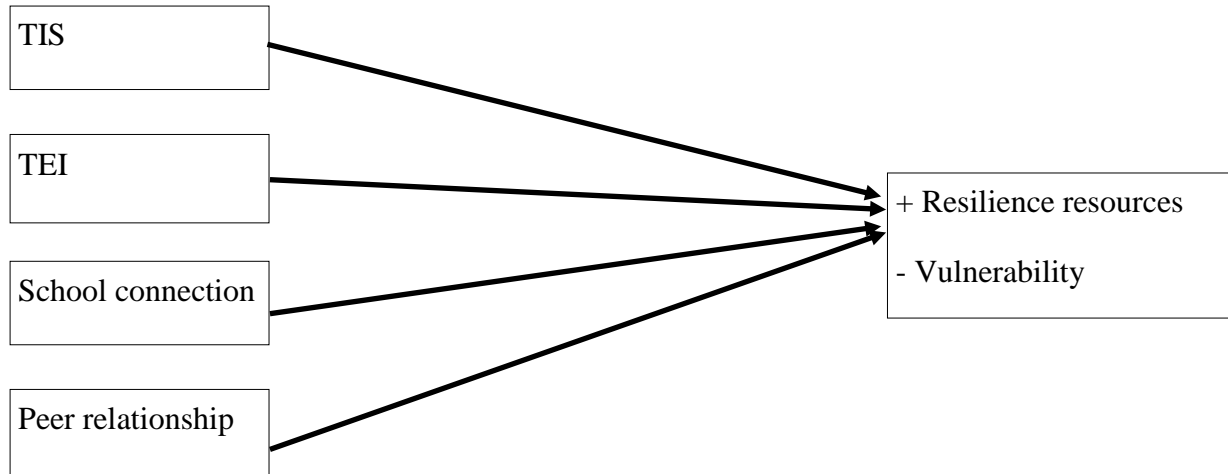
Methodology

Full ethical approval was granted by the Salomons Ethics Panel (see Appendix A). Initially, written consent was required from parents/legal guardians, however verbal consent was later accepted after review from the ethics committee. This was required for all pupils, including those over the age of 16. Consent was also required from the young people themselves. The study adhered to the British Psychological Society code of ethics and conduct (BPS, 2009).

Design

This study used a cross-sectional design. The independent variable was time spent in school (TIS) and the dependent variable was resilience, measured by the scales of resilience resources and vulnerability.

Participants

Recruitment

Opportunity sampling was used. Participants were recruited from two specialist schools in Southeast England where pupils need a health and care plan (EHCP) and to be able to manage in a class of up to eight pupils to attend. The language 'behaviour, emotional and social difficulties' is used within admission criteria.

To participate, pupils needed to be 11 years old due to the questionnaire parameters and to have attended the school for at least 6 weeks. In one school, all pupils were invited to take part (n= 68). The second school gave permission for years 7 – 9 to take part (n= 28). Information sheets were sent to all parents/legal guardians via post (see Appendix B). A separate information sheet was given to pupils at school (See Appendix C).

Consent forms and information sheets were posted to parents with a stamped addressed envelope (see Appendix D). Pupil consent forms were completed with pupils once parental/carer consent had been received (see Appendix E). In one school, information about the research was communicated in assembly. The King's College London FAST-R service provided service user and carer feedback regarding the content of the information sheets and consent forms.

Pupils were offered the incentive of being entered into a draw to win gift vouchers. Due to only a small number of consent forms being returned, the ethics committee agreed to accept verbal consent from parents or carers. Consent was given by parents or carers of 46 pupils, six of whom did not wish to take part. Two of the remaining 40 did not complete all the questionnaires but are included in the analysis. Thirty-two participants were recruited from the first school, 8 from the second which was approached after it became clear that there would not be sufficient participants from School 1. Two participants were later excluded from the analysis due to problems with data collected by the school (see 'Procedure' section).

Table 2 summarises the demographic information of all participants. This shows that the majority of participants were male and white British and between the ages of 11 and 18. The extent to which the results can be generalised beyond these groups is therefore limited. The amount of time the participants had spent in school varied from 2 to 83 months.

Table 2.

Sample characteristics

		n	Mean	Range	SD
Gender	Male	32			
	Female	6			
Age		38	14.06	11-18	2.20
Ethnicity	White British	35			
	White Polish	1			
	Black African	1			
	Mixed race	1			
Time in specialist school (months)			23.16	2- 83	23.00

Materials

All questionnaires can be found in Appendix F-I. The questionnaires that were completed online were hosted by Qualtrics, an online survey platform.

The Resiliency Scale for Children and Adolescents (RSCA; Prince-Embury, 2007).

The three RSCA scales consist of 64 self-report items. Internal consistency for the three scales and two index scores had been previously explored for three age brackets (9-11, 12-14 and 15-18) and was consistently good to excellent (from $\alpha=.85$ to $\alpha=.95$) (Prince-Embury, 2007). Test-retest reliability has been found to be moderate to high (.79 for sense of mastery, .84 for sense of relatedness and .88 for emotional reactivity). High coefficients for the resources and vulnerability scores were also demonstrated (.90 and .83 respectively).

The Trait Emotional Intelligence Questionnaire- Adolescent Short Form (TEIQue-ASF;

Petrides, Sangareau, Furnham, & Frederickson, 2006)

The TEIQue-ASF is a simplified version of the adult TEIQue (Petrides, 2009). This is a 30-item self-report questionnaire with a 7-point Likert scale response (1= strongly disagree to 7= strongly agree). Whilst factor scores can be ascertained from the TEIQue-ASF, they are known to be less reliable (Petrides et al., 2006) and therefore the scale is more often used to measure global TEI. Subscales regarding well-being, self-control, emotionality and sociability are also calculated.

Psychological Sense of School Membership (Goodenow, 1993)

This 18-item measure has a 5-point Likert response scale (1= not true at all to 5= completely true). Internal consistency has been found to be .87 (Goodenow, 1993). The PSSM has significantly correlated with school motivation, grades and effort as rated by teachers (Goodenow, 1993).

McGill Friendship Questionnaire- Friendship Function (MFQ-FF; Mendelson & Aboud, 1999)

The MFQ-FF generates 6 subscales regarding friendship qualities: stimulating companionship, help, intimacy, reliable alliance, self-validation and emotional security. The questionnaire comprises of 30 items which each have a 9 point Likert response scale (0= never to 8= always). Cronbach's alpha for each of the 6 subscales ranged from .89 to .95 (Mendelson & Aboud, 1997). Construct validity has been explored and positive feelings towards a friend and the satisfaction with this friendship were found to be related to the extent to which friendship functions were fulfilled by the friend (Mendelson & Aboud, 1997).

Procedure

Once parental consent had been received, pupils were invited by a member of school staff to meet with the researcher. Consenting pupils were met individually. The research was explained and there was an opportunity to ask questions. Most pupils were met without staff present, with the exception of pupils who requested to be accompanied, or pupils that school staff recommended were accompanied. Pupils were read the contents of the consent form and asked to sign if they agreed to take part.

In school 1, the RSCA had previously been completed as part of the school's routine measures. The length of time pupils had been in school was measured from the date they joined the school to when they completed the resiliency scale, which needed to be within a year of completing the other questionnaires. Two participants' data were excluded as the school's routine questionnaires had been completed more than a year before the research took place.

Pupils were asked to complete the remaining three questionnaires either online using the Qualtrics system or on paper. The order of the questionnaires was randomised by the Qualtrics software. For the majority of pupils, the researcher read each question aloud.

In school 2, none of the questionnaires had previously been completed. Pupils completed the RSCA on paper and used Qualtrics for the remaining questionnaires. The research took place in the office of a member of staff who delivered pastoral support to pupils. This member of staff was present in the room. Whilst the questions were read out aloud by the researcher, pupils were able to answer non-verbally.

Data analysis

The G*Power software (Faul, Erdfelder, Lang & Buchner, 2007) was used to calculate the required sample size. Assuming medium effect size of .3 (Cohen, 1969) and due to there being four predictor variables, a sample size of 38 was recommended. A number of studies have used mediation and moderation analysis with sample sizes between 20 and 50 (Fritz, Cox & MacKinnon, 2015), the limitations of this will be considered. The Statistical Package for Social Sciences (SPSS), version 23, was used for data analysis. Firstly, the data were investigated to determine normality for each variable by considering histograms, checking skewness and kurtosis values and whether there were any significant deviations from normality according to the Kolmogorov-Smirnov and Shapiro-Wilk tests.

Pearson correlations were completed for all scales and subscales. Mediation, moderation and Conditional Process Analysis (Hayes, 2013) was conducted for both the resilience resources and vulnerability outcome variables using the PROCESS macro model 4 and 8 (Hayes, 2013-2015). This analysis was completed using the Hayes (2012) PROCESS tool.

Results

Overview

Descriptive statistics are explored before each hypothesis is considered in turn. As the RSCA produces scores for both resilience resources and vulnerability, each will be considered separately. The RSCA, TEIQue-ASF and McGill Friendship Questionnaire each have several subscales (see Appendix J), however the total scores are reported here and used for the mediation and moderation analysis, as advised in the literature.

Descriptive statistics

Table 3 summarises the descriptive statistics of each of the key variables included in analysis.

Table 3

Descriptive statistics of all variables

Measure	Mean	SD	Minimum and maximum values	Range
RSCA resources	41.74	11.44	0-100	13-67
RSCA vulnerability	60.11	12.06	0-100	28-85
TEIQ-ASF total	4.37	0.77	1-7	2.83-6.30
PSSM	70.75	11.71	18-90	38-88
Time in school	23.16	23.00	-	2-83
McGF	5.92	1.81	0-8	0-8

The resources score from the RSCA is a t-value, which is the mean of the mastery and relatedness subscale. The vulnerability score is calculated by subtracting the resources t-score from the reactivity t-score. T-scores are available for nine norm groups, for males and females and three age bands.

Exploring assumptions of normality

By inspecting histograms (see Appendix K), checking skewness and kurtosis were within the normal limits (+/- 2) and checking for non-significance of both the KolmogorovSmirnov and Shapiro-Wilk tests, normal distribution was explored. The PSSM was the only scale that met each of these assumptions (see Appendix K). All scales were included in further analysis despite not meeting full criteria for normality due to the recommended use of bootstrapping in the analysis (Field, 2013).

Relationships between the multiple variables

Pearson coefficient correlations between all variables, including subscales of all measures are summarised in Appendix L. Correlations, means and standard deviations of all variables (total scores) are presented in Table 4.

Table 4.

Correlations, means and standard deviations of all included variables.

	RES	Vul	TEI	Schconn	TIS	Peer
1. Resources	-					
2. Vulnerability	-.849**	-				
3. Trait emotional intelligence	.530**	-.630**	-			
4. School connection	.155	-.096	.280	-		
5. Time in school	.398*	-.376*	.283	.242	-	
6. Peer relationship	.245	-.145	.358*	.318	.188	-
Mean	41.67	59.78	4.38	70.89	23.16	5.87
SD	11.51	12.32	.78	11.46	22.99	1.84
n	36	36	38	38	38	38

Note. N (listwise)= 38. SD = standard deviation.

*p <.05, **p < .01.

Table 4 shows the results of a Pearson correlation coefficient calculated to assess the relationship between all variables. As predicted in Hypotheses 1a and 1b, there was a correlation between TIS and both resiliency resources (r (34) = .398, p <.05) and vulnerability (r (34) = -.38, p < .05). Significant correlations were also found between TEI and both resiliency measures, resources (r (34)= .53, p<.01) and vulnerability (r (34)= -.63, p<.001). These outcomes are in the directions expected.

Neither resilience resources, vulnerability nor TEI correlated with school connection (r = .15, r =. -.10 and r = .28, respectively). Having a positive peer relationship correlated with TEI (r =(34) .36, p < .05) but not resilience resources (r = .25) or vulnerability (r = .15). None of the mediatory variables (total scores) significantly correlated with each other.

Hypothesis 1a. Linear regression analysis was used to test if the length of time a student had

been in school significantly predicted resilience resources. The results of the regression

indicated that the length of time in school (TIS) did significantly predict resilience resources

(p= .015). See table 5 for results.

Table 5.

Linear model of TIS as a predictor of resilience resources. Standard errors based on 1000
bootstrap samples.

	b	SE B	ß	p
Constant	37.14	2.62		.001
TIS	0.20	0.08	.40	.015

R^2=. 16

Hypothesis 1b. The same analysis was completed to test whether the length of time in school

significantly and negatively predicted vulnerability, which was substantiated (p= .018), see

Table 6.

Table 6.

Linear model of TIS as a predictor of vulnerability. Standard errors based on 1000 bootstrap
samples.

	b	SE B	ß	p
Constant	64.35	3.04		.001
TIS	-0.20	0.08	-.38	.018

R^2=. 10

Hypothesis 2a. TEI was examined as a moderator of the relationship between time in school

and resilience resources using linear regression, specifically moderation analysis. TEI was a

significant predictor of resilience resources (p = .05), however the interaction between TEI

and TIS was not significant (p = .84). TEI was therefore not found to be a significant
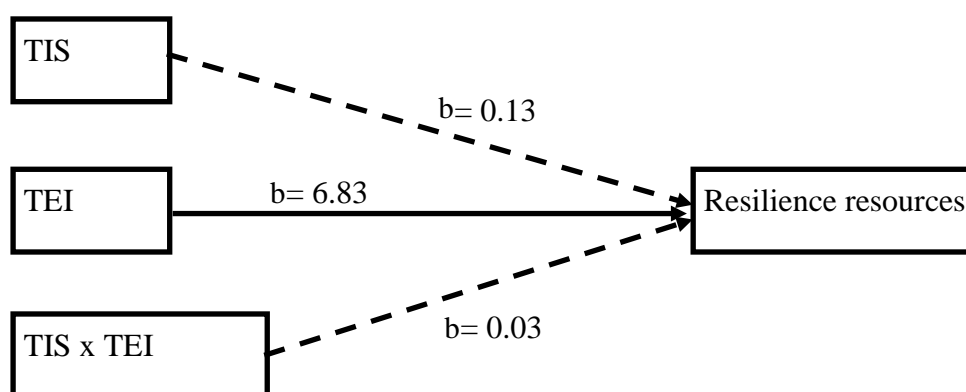
moderator of the relationship between TIS and resilience resources, depicted by the

confidence intervals including zero (Field, 2013). Table 7 presents the linear model of the

predictors of resilience resources for hypothesis 2a. This is represented in a statistical model

in Figure 6.

Table 7.

Linear model of predictors of resilience resources. Confidence intervals are reported in
parentheses.

	b	SE B	t	p
Constant	41.55	1.98	21.01	<.001
	(37.52, 45.58)			
TEI	6.83	3.28	2.09	.045
	(0.16, 15.00)			
TIS	0.13	0.10	1.31	.198
	(-1.02, .97)			
TEI x TIS	0.03	.12	0.21	.837
	(-.18,.24)			

Note. R^2 = .36

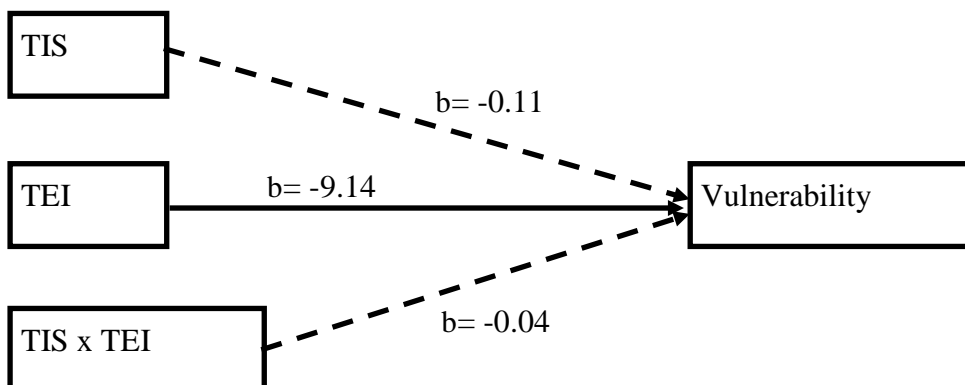Note. Dashed lines represent non-significant results.

Figure 6. Statistical model representing hypothesis 2a.

Hypothesis 2b. Moderation analysis was also used to analyse whether TEI is a significant

moderator of the relationship between TIS and vulnerability. Analysis demonstrated that TEI

is a significant predictor of vulnerability (p = .01), however the interaction of TEI and TIS is

not a significant predicator (p =. 67) and therefore TEI is not a significant moderator of the

TIS and vulnerability relationship. This is demonstrated by the confidence intervals crossing

zero (Field, 2013). Results of this analysis are in Table 8 and a statistical model of this is

represented in Figure 7.

Table 8.

Linear model of predictors of vulnerability. Confidence intervals are reported in parentheses.

	b	SE B	t	p
Constant	59.96	1.88	31.95	<.000
	(56.14, 63.78)			
TEI	-9.14	3.24	-2.82	.008
	(-15.73, -2.54)			
TIS	-0.11	0.07	-1.11	.105
	(-0.25, 0.02)			
TEI x TIS	-0.04	0.09	-0.43	.667
	(-0.23, 0.15)			

Note. Dashed lines represent non-significant results.

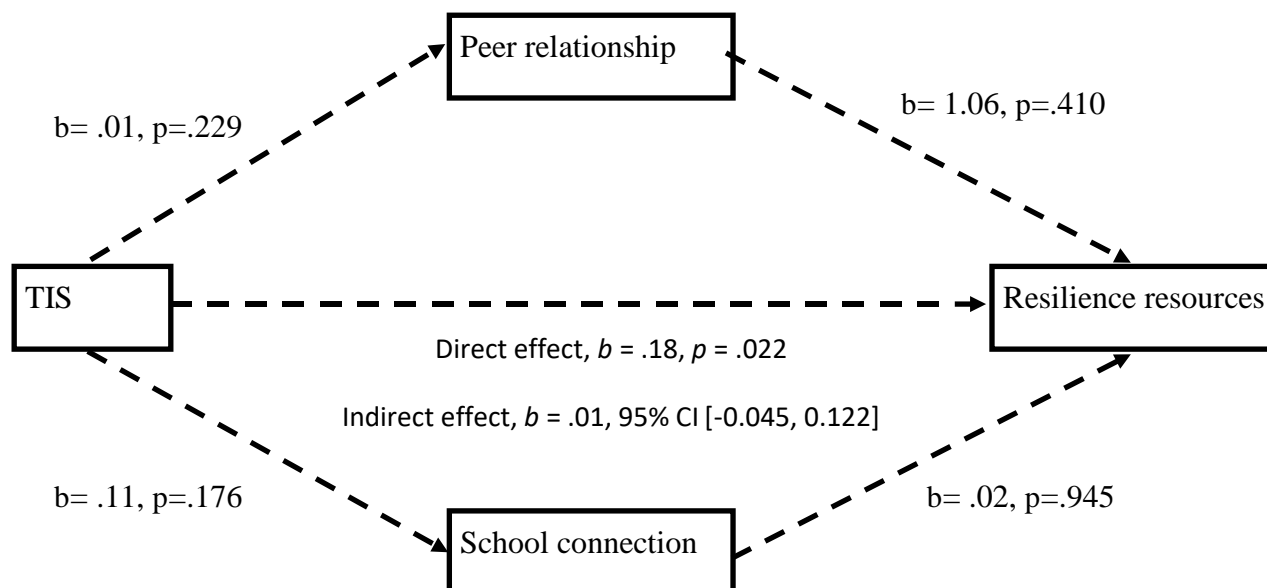Figure 7. Statistical model representing hypothesis 2b.

Hypothesis 3a. This hypothesis predicated that the association between the length of time in school and resilience resources would be mediated by having a peer relationship in school and a connection to the school. A parallel multiple mediator model was analysed to explore this hypothesis. Specifically, Hayes' PROCESS tool (Hayes, 2013) was used and model 4 was utilised (Hayes, 2013-15). The model coefficients from the analysis are illustrated in Table 9.

Table 9.

Model coefficients for the mediation analysis of hypothesis 3a.

	Outcome								
	Peer relationship (M1)			School connection (M2)			Resilience resources		
	b	SE	p	b	SE	P	b	SE	p
Constant	5.54	0.51	<.001	67.91	3.04	<.001	30.12	15.44	.060
TIS	0.01	0.01	.229	0.11	0.08	.176	0.18	0.09	.053
Peer rel (M1)	-	-	-	-	-	-	1.06	1.27	.410
Sch conn (M2)	-	-	-	-	-	-	0.02	0.25	.945
		R^2=.03			R^2=.05			R^2=.19	

The indirect effect of TIS on resilience resources through the mediator of peer relationship was found to not be significant (b= .02, BCa CI [-0.012, 0.080]) in addition to the mediator of school connection (b= .002, BCa CI [-0.059, 0.066]). The interaction between TIS and resilience resources is not mediated by having a peer relationship and school connection combined (b=. 01, BCa CI [-0.045, 0.122]), therefore this hypothesis is not substantiated. This is illustrated in a conceptual model in Figure 8.

Note. Dashed lines depict non-significant results. The confidence interval for the indirect effect is a BCa bootstrapped CI based on 5000 samples.

Figure 8. Model of TIS as a predictor of resilience resources, mediated by having both a peer relationship and school connection.

Hypothesis 3b. This hypothesis predicted that the association between the length of time in school and vulnerability would be mediated by having a peer relationship in school and a connection to the school. A parallel multiple mediator model was analysed to explore this hypothesis. Specifically, Hayes' PROCESS tool (Hayes, 2012) was used and model 4 was utilised (Hayes, 2013-15). The model coefficients from the analysis are illustrated in Table 10.

Table 10.

Model coefficients for the mediation analysis of hypothesis 3b.

	Outcome								
	Peer relationship (M1)			School connection (M2)			Vulnerability		
	b	SE	p	b	SE	P	b	SE	p
Constant	5.54	0.51	<.001	67.91	3.04	<.001	66.36	18.27	.001
TIS	0.01	0.01	.229	0.11	0.08	.176	-0.19	0.09	.033
Peer rel (M1)	-	-	-	-	-	-	-0.55	1.12	.630
Sch conn (M2)	-	-	-	-	-	-	0.01	0.09	.957
		R²=.03			R²=.05			R²=.15	

The indirect effect of TIS on vulnerability through the mediator of peer relationship was found to not be significant (b= -.01, BCa CI [-0.073, 0.013]) in addition to the mediator of school connection (b= -.002, BCa CI [-0.061, 0.086]). The interaction between TIS and vulnerability was not mediated by having a peer relationship and school connection combined (b=-.01, BCa CI [-0.130, 0.060]), therefore this hypothesis is not substantiated. This is illustrated in a conceptual model in Figure 9.

Note. Dotted lines depict non-significant results. The confidence interval for the indirect effect is a BCa bootstrapped CI based on 5000 samples.

Figure 9. Model of TIS as a predictor of vulnerability, mediated by having both a peer relationship and school connection.
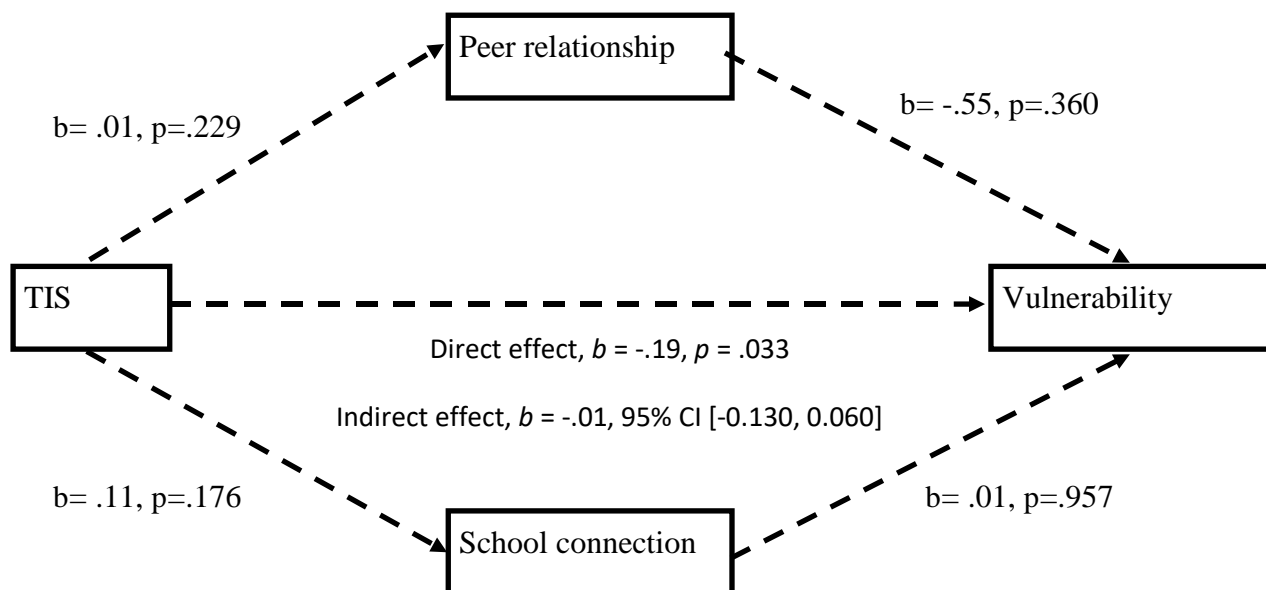
Hypothesis 4a. Hypothesis 4a predicted that having a positive peer relationship in school and a positive school connection will function as a mechanism through which TIS influences resilience resources and that the strength of this mechanism is contingent on individuals TEI. As hypothesis 3a was not substantiated, where peer relationship and school connection were not mediators of the relationship between TIS and resilience resources, this hypothesis has already been rejected, as there is not a relationship for TEI to be contingent upon. However, for the purpose of clarity, the analysis was carried out. Hayes' conditional process model 8 (Hayes, 2013-15) was used. See Table 11 for results.

Table 11.

Model coefficients for the Conditional Process Model where the mediatory effect of peer relationship and school connection on TIS and resilience resources was hypothesised to be contingent on TEI.

	Outcome								
	Peer relationship (M1)			School connection (M2)			Resilience resources		
	b	SE	p	b	SE	p	b	SE	p
Constant	5.90	0.32	<.000	70.39	2.13	<.001	42.69	17.16	.019
TIS	0.01	0.02	.588	0.08	0.09	.367	0.13	0.11	.235
Peer rel (M1)	-	-	-	-	-	-	0.26	1.25	.834
Sch conn (M2)	-	-	-	-	-	-	-0.04	0.24	.873
TEI (W)	0.81	0.34	.022	3.21	3.06	.303	6.74	3.77	.084
TIS x TEI	-.004	0.02	.808	0.03	0.13	.829	0.03	0.12	.827
	R²= .14			R²=.09			R²=.36		

There was no conditional significant indirect effect of TIS on resilience resources via the mediator of having a peer relationship in school (b= <.001, BCa CI [-.025, .062]). Similarly, there was no conditional significant indirect effect via the mediator of having a school connection (b=<.001, BCa CI [-.075, .026]). Therefore, this hypothesis cannot be substantiated. Figure 10 illustrates these results diagrammatically.
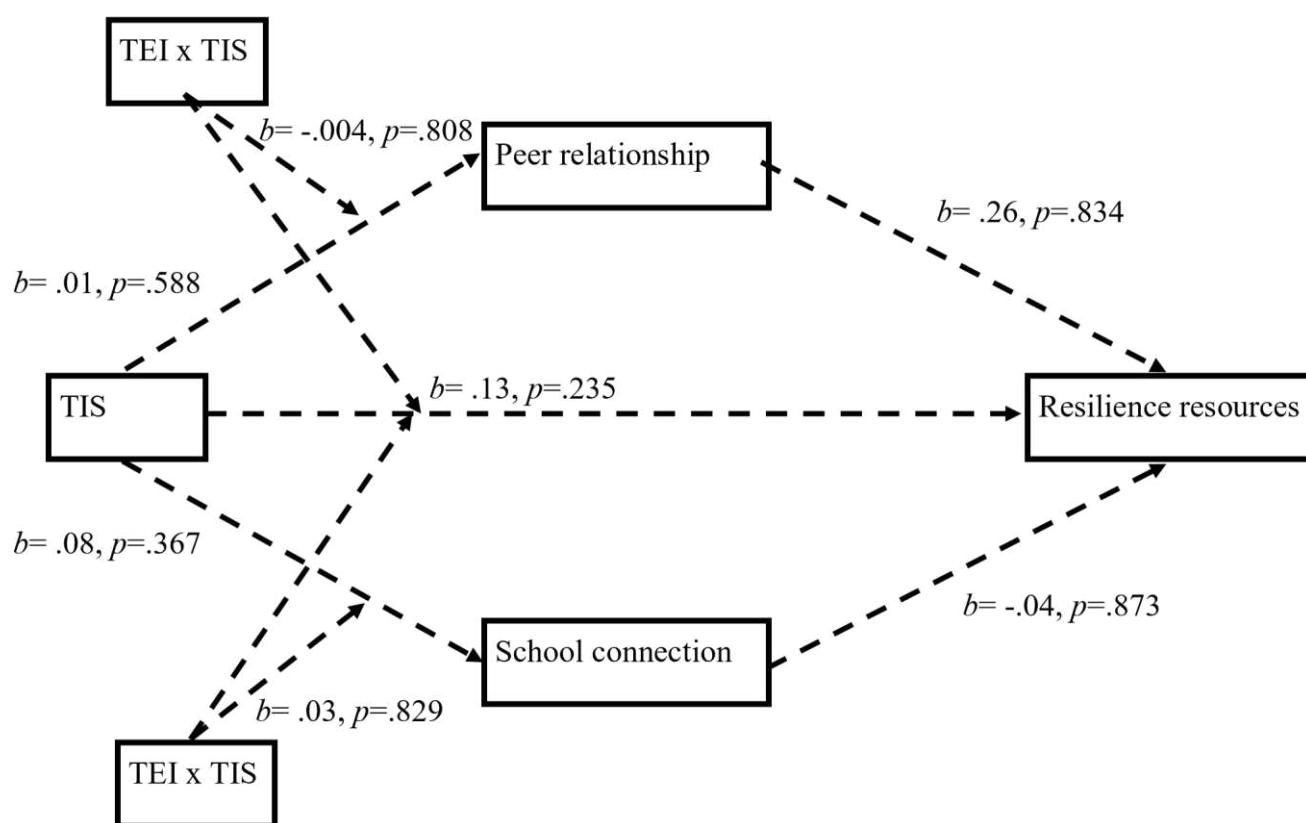
Note. Dotted lines depict non-significant results.

Figure 10. Diagram of conditional process model 8 for TIS predicting resilience resources.

Hypothesis 4b. Hypothesis 4b predicted that having a positive peer relationship in school and a positive school connection would function as a mechanism through which TIS influences vulnerability and that the strength of this mechanism is contingent on individuals TEI. As hypothesis 3b was not substantiated, this hypothesis has already been rejected. However, the analysis was carried out for clarity. Hayes' conditional process model 8 (Hayes, 2013) was used. See Table 12 for results.

Table 12.

Model coefficients for the Conditional Process Model where the mediatory effect of peer relationship and school connection on TIS and vulnerability was hypothesised to be contingent on TEI.

	Outcome								
	Peer relationship (M1)			School connection (M2)			Vulnerability		
	b	SE	p	b	SE	p	b	SE	p
Constant	5.90	0.32	<.001	70.39	2.13	<.000	49.45	17.88	.010
TIS	0.01	0.02	.588	0.08	0.09	.367	-0.12	0.08	.111
Peer rel (M1)	-	-	-	-	-	-	0.63	0.93	.504
Sch conn (M2)	-	-	-	-	-	-	0.10	0.08	.686
TEI (W)	0.81	0.34	.022	3.21	3.06	.303	-9.96	3.64	.010
TIS x TEI	<.001	0.01	.808	0.03	0.13	.829	-0.04	0.10	.680
		R^2= .14			R^2=.09			R^2=.47	

There was no conditional significant indirect effect of TIS on vulnerability via the mediator of having a peer relationship in school (b= <.001, BCa CI [-.019, .055]). Similarly, there was no conditional significant indirect effect via the mediator of having a school connection (b=<..001, BCa CI [-.017, .094]). Therefore, this hypothesis cannot be substantiated. Figure 11 illustrates the above results.

Note. Dotted lines depict non-significant results.

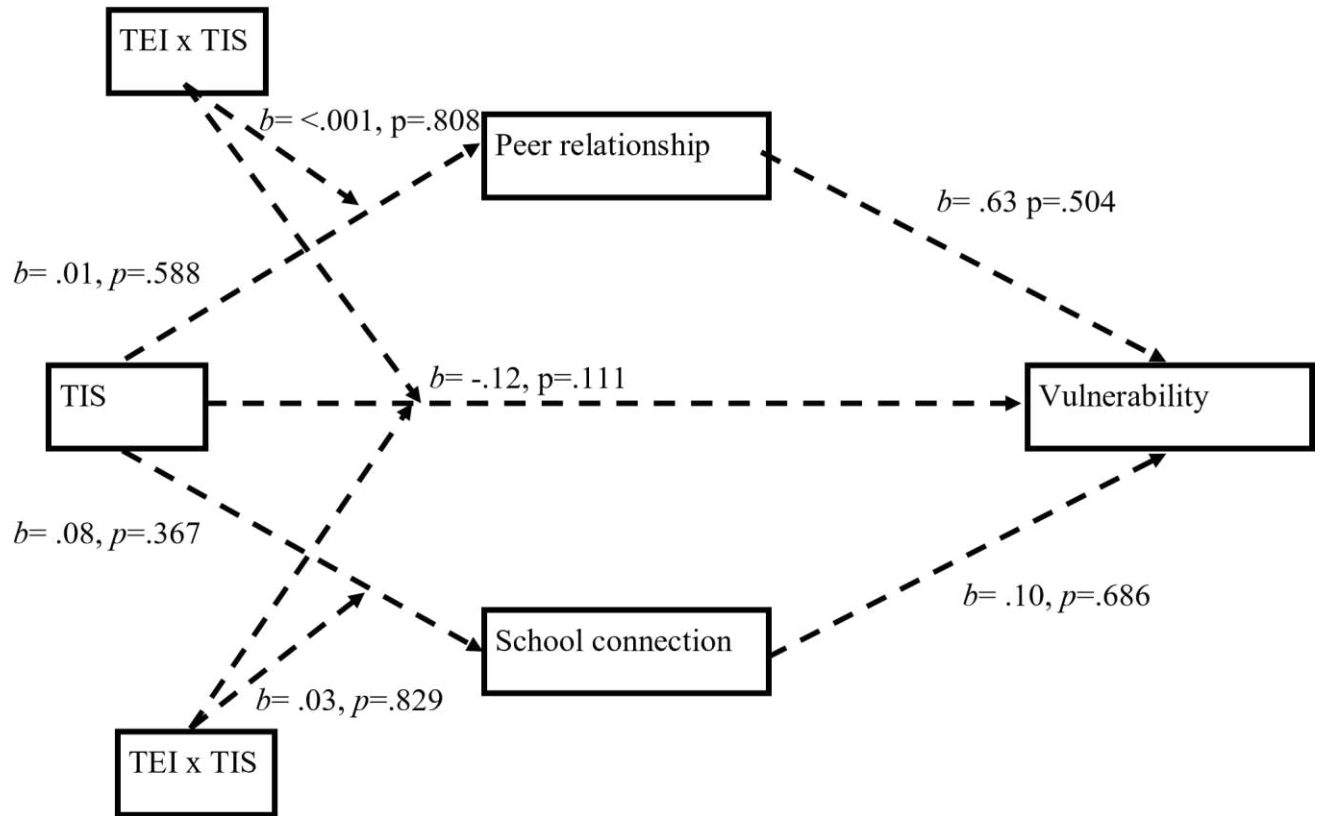Figure 11. Diagram of conditional process model 8 for TIS predicting vulnerability.

Hypothesis 5a. This hypothesis predicted that all variables (TIS, TEI, having a peer

relationship and a school connection) would all have relative importance in predicting

resilience resources. The results of the linear regression are found in Table 13.

Table 13.

Linear model of predictors of resilience resources with 95% bias corrected accelerated
confidence intervals reported in parentheses. Confidence intervals and standard errors are
based on 1000 bootstrap samples.

	b	SE B	ß	p
Constant	10.67	12.99		.437
	(-15.22, 34.83)			
TIS	0.14	0.14	.28	.115
	(-.02 .30)			
TEI	6.43	2.92	.45	.045
	(1.33, 12.69)			
Peer relationship	0.25	1.27	.04	.801
	(-1.41, 3.71)			
School connection	-.04	0.20	-.04	.844
	(-0.44, 0.34)			

Note. R^2= .36

Table 13 demonstrates, the only significant predictor is TEI (p =.045). Due to the lack

of significance of other variables, hypothesis 5a cannot be fully verified.

Hypothesis 5b. The analysis above was replicated with vulnerability as the outcome to

explore the hypothesis that all predictor variables would have relative importance in

predicting vulnerability. Table 14 shows the results of the linear regression.

Table 14.

Linear model of predictors of vulnerability with 95% bias corrected accelerated confidence intervals reported in parentheses. Confidence intervals and standard errors are based on 1000 bootstrap samples.

	b	SE B	ß	p
Constant	95.11 (68.89, 125.47)	14.67		.001
TIS	-.13 (-.27,.003)	0.07	-.25	.071
TEI	-9.82 (-15.92, -4.37)	2.96	-.63	.004
Peer relationship	.65 (-2.04, 2.05)	-0.15	.10	.429
School connection	.093 (-.321, .497)	0.20	.09	.649

Note. R^2= .46

With the exception of TEI, which significantly predicted vulnerability (p= .004), none of the other variables were significant predictors. Therefore, this hypothesis can only be partially substantiated.

The beta coefficient values depicted in both hypotheses 5a and 5b demonstrate that TEI has the strongest effect on both resilience outcomes. As the TEI measure had a number of subscales, exploratory analysis was therefore carried out to explore better understand which elements of TEI are predictive of resilience. Due to the other variables considered in this research not being found to be significant predictors, it is important to continue to explore what factors are contributing to fostering resilience in order for further research to understand more about schools for this population. More robust questionnaires can then study these factors in more detail. Firstly, the four TEI subscales (wellbeing, self-control, emotionality, sociability) were analysed to explore the extent to which they were significantly predictive of resilience resources. The results are presented in Table 15.

Table 15.

Linear model of TEI subscale predictors of resilience resources with 95% bias corrected accelerated confidence intervals reported in parentheses. Confidence intervals and standard errors are based on 1000 bootstrap samples.

	b	SE B	ß	p
Constant	19.40	10.89		.078
	(1.99, 40.82)			
Wellbeing	4.81	1.06	.65	.002**
	(2.85, 7.08)			
Self-control	.068	1.38	.01	.944
	(-2.62, 2.68)			
Emotionality	2.31	1.79	.18	.190
	(-1.16, 6.02)			
Sociability	-2.24	1.73	-.20	.200
	(-5.99, 0.81)			

$R^2 = .51$, *p <.05, **p < .01.

Analysis demonstrates that the well-being subscale of the TEI measure is a significant predictor of resilience resources (p = .002).

The same analysis was completed for the outcome of vulnerability. The results are presented in Table 16.

Table 16.

Linear model of TEI subscale predictors of vulnerability with 95% bias corrected accelerated confidence intervals reported in parentheses. Confidence intervals and standard errors are based on 1000 bootstrap samples.

	b	SE B	ß	p
Constant	84.06	10.76		.001
	(60.21, 103.02)			
Wellbeing	-3.87	0.92	-.49	.001**
	(-5.70, -2.10)			
Self-control	-3.00	1.07	-.31	.005**
	(-4.81, -0.65)			
Emotionality	-3.44	1.48	-.25	.027*
	(-6.10, -0.16)			
Sociability	3.91	1.50	.32	.017*
	(1.13, 7.01)			

$R^2 = .68$ *p <.05, **p < .01.

The beta coefficients above demonstrate that all subscales of the TEI measure have relative importance in predicting vulnerability and are all significant predictors. The results from the analysis are discussed below.

Discussion

As predicted, spending longer in an SEBD school was positively associated with resilience resources and negatively with vulnerability, suggesting school may have a positive influence on the promotion of resilience and reducing vulnerability. These associations are in line with findings of previous research in mainstream schools (Liebenberg et al., 2016; Poulou, 2015; Theron et al., 2014).

It was intended that this research would provide further insight into the processes through which schools promote resilience in their students. Contradictory to the hypotheses, having a positive peer relationship in school was not found to be significant in this process. This is inconsistent with the findings of Stewart and Sun (2004) and Graber et al. (2015) who found friendships an important factor in pupil's resilience.

The lack of correlation between school connection and both resilience resources and vulnerability contradicts previous research which indicated that having a sense of connection to school can have a positive effect (Bomber, 2007; Cafai, 2007). As Poulou (2015) argued, perhaps it is the teacher-student relationship that is important for children with complex difficulties, rather than the wider culture. Whilst the school connection measure did incorporate pupil-teacher relationships, this was not explicit.

When considering the range of responses to the questionnaires, pupils generally scored positively for the peer relationship and school connection measures. These outcomes therefore appear unlikely to be due to pupils not having friends or feeling disconnected to the

school. This may have led to a restriction of range effect. It is possible that the questionnaires used did not enable enough scope for subtleties to be identified.

The results of this study suggest that there may be other mediating factors that explain the mechanisms by which schools facilitate resilience. Also, the extent to which each pupil has experienced adversity may be an important confounding variable when considering how pupils engage in school, as well as how they can form relationships. Other possible mechanisms that could influence this process may include the stability in home life, the extent to which adversity has ended, previous school experiences and ratio of staff to pupils, for example. Similarly, school involvement has been found to be less predictive of resilience when pupils have other strengths (Jones & Lafreniere, 2014) and therefore the pupils in this research may have strengths that were not measured.

The results limited the extent to which the role of TEI could be explored. However, when all the variables were considered together, TEI was identified as an important predictor of both resilience resources and vulnerability which is in line with previous research where higher levels of TEI were associated with well-being (Urquijo et al., 2016), adapting more readily to stressors (Ramos, Fernandez-Berrocal & Extrenera, 2003) and managing low mood (Balluerka et al., 2013). This also supports Eisenburg et al.'s (2000) research which demonstrated the importance of emotion regulation skills on social adaption. When considering the resilience resources measure, it is possible that individuals with higher levels of TEI are better able to recognise and use available resources, as proposed by Lazarus and Folkman (1984).

The exploratory analysis demonstrated that the well-being subscale of the TEI measure was a significant predictor of resilience resources, and all subscales were negatively predictive of vulnerability. This may suggest that pupils who have a more positive

temperament are less vulnerable. The well-being subscale includes items which measure happiness, optimism and self-esteem. However, it is also possible that the well-being and resilience resources scales measure similar constructs and were thus correlated for these reasons. For example, the mastery subscale of the RSCA includes the statement 'my life will be happy' and the TEIQue-ASF includes 'I'm happy with my life'. The results of the exploratory analysis of individual subscale scores should also be treated with caution as the TEIQue-ASF subscales are less reliable than the full scale (Petrides et al., 2006).

Socio-ecological theory

Whilst the significant associations between the time spent in specialist provisions and resilience resources and vulnerability are supportive of the broad idea of socio-ecological approaches to resilience, the limitations of this study do not allow for support of this theory. This research does not demonstrate the processes that may be involved in this association and associations alone are not necessarily enough evidence to support theory. Socio-ecological approaches argue that resilience is fostered by the many systems surrounding children and young people (Ungar, 2005, 2011; Ungar, Ghazinour & Richter, 2013) and this research did not support this theory as resources such as school connection and friendships were not found to be significant in the model. This may be due to the limitations of the research.

Limitations

The characteristics noted by Masten (2001, 2007) and summarised in Table 1 reflect characteristics associated with resilience for children and adolescents, however the developmental tasks associated with resilience are argued to change over time (Masten & O'Dougherty Wright, 2010). Therefore, the extent to which these results can be generalised both beyond and within the ages of the participants involved is limited. Similarly, this

research included predominantly white British males and therefore the results should not be generalised beyond these groups.

The small sample size is an important limitation of these results, which would be improved by involving other schools. The cross-sectional design of this research elicits problems with generalising the results beyond this population, at this specific time. Due to this research not being longitudinal, there is potential for bias by specific time-based variables, such as time of year and members of staff working in the school, for example. Similarly, the absence of a longitudinal design means causality cannot be inferred.

This research considered several different psychological constructs and questions the extent to which these constructs are different from each other. For example, some of the items within the TEI measure consider relationships with other people and levels of satisfaction with life, which could be argued to replicate elements of the resources and friendship questionnaires.

The atmosphere within the schools was very changeable. For example, one day the staff and pupils would appear calm but on other days, a number of incidents may have occurred. Some pupils would not be willing to do the research one day, but be very willing another time. This questions the test-retest reliability of self-report questionnaires with this population. It may be possible that pupils that agreed to complete the research were more confident and may be with families or carers who have a good relationship with the school and therefore gave consent. This may have led to bias and the sample not being fully representative of the target population. Whilst the researcher was unknown to the pupils, completing the questionnaires with the researcher may have generated social desirability bias.

All questionnaires were self-report and required the ability for introspection as well as to understand the content which may have influenced the reliability of responses (Hoskin, 2012). Whilst most pupils asked when unsure of the meaning of an item, it is possible that some pupils did not feel able to. It could be helpful to include external measures of resilience or friendship quality, perhaps completed by staff or peers, in order to control for this. Whilst there were many similarities between the two schools included in this research, there were noticeable differences in the school environment and culture. It is possible that the factors which contribute towards the development of resilience are different for each school. This could not be explored in this research due to the low number of pupils taking part in school 2.

The RSCA includes a measure of vulnerability as an indication of individual's susceptibility to negative outcomes. When designing the measure, the authors demonstrated the correlation between this measure and measures of difficulties such as depression (Prince-Embury, 2011). However, resilience has been associated with other outcomes, not just the absence of specific mental health difficulties (Walsh, Dawson & Mattingly, 2010) and therefore this research only considers one possible type of outcome. The lack of vulnerability in the context of this research should not be generalised to other possible resilience outcomes.

Practice implications

This research demonstrates that schools may have an important role in the promotion of resilience in young people, but the processes involved in this are unclear. Given the high prevalence of mental health difficulties in this age group, it is important that schools are supported when considering their approach to this work. This has implications for Clinical Psychology, specifically those working in schools or in Tier 2 services. Clinical Psychologists in schools may use this information to identify pupils with lower levels of TEI and consider how they can be supported.

Future research

This research has demonstrated that research within SEBD schools is possible, despite many challenges. This population is underrepresented in the literature, therefore it is important that challenges do not prevent research being completed. Many young people in these provisions have faced numerous challenges and are being successfully supported within a school environment, therefore there is much to learn from the work that is taking place. This research considered adolescents only and further research may extend to include younger ages in addition to specific age groups in order to better control for developmental stages of resilience development (Masten & O'Dougherty Wright, 2010).

Many resilience measures focus on the presence of resources and the extent to which individuals can assess and use them. Whilst these measures are useful in understanding the potential for managing adversity, they do not appear to measure the outcome of 'bouncing back' as identified in many resilience definitions. For example, it might be possible to have good access to numerous resources but to struggle when facing significant trauma and stress. Post traumatic growth (PTG) is the term used to describe positive psychological change after a traumatic event (Calhorn & Tedeschi, 1999). This differs to resilience in that PTG considers positive changes after trauma, whereas resilience appears to refer more to the potential maintenance or recovery from trauma. Importantly, PTG suggests that young people may still be unhappy after trauma whilst at the same time making changes or feeling differently about themselves. It is possible, therefore, that measures of PTG more accurately refer to actual responses to trauma, rather than the resources that are potentially helpful in aiding recovery. Perhaps incorporating some of the elements of PTG literature could be useful in better understanding the responses involved in resilience. A mixed-methods

approach may be useful in substantiating quantitative findings and increasing understanding of the mechanisms involved in overcoming adversity.

The ongoing confusion between 'resilience' and 'resiliency', and the numerous ways both constructs have been measured generates much uncertainly within this field. Future researchers need to be clear about their theoretical stance, and their approach to measurement. Whilst the socio-ecological approach to resilience is helpful in considering the multiple processes involved in resilience, it is difficult to operationalise due to the numerous potential factors involved, and the potentially extensive interplay between these factors.

Conclusion

As hypothesised, the time spent in a specialist provision was found to be associated with resilience in this population of pupils attending a SEBD provision. However, the hypothesised mediation and moderation factors proposed to explain the processes involved in this association, were not substantiated in this research. TEI was found to be an effective predictor of resilience in this group. There may be other variables that are involved in this process that need to be considered. It is important to continue to explore the ways in which schools are supporting pupils and perhaps a mixed methods approach that involved both staff and pupils may be useful in eliciting this information. However, it is also important that the discussions regarding the definition and theory of resilience and how it is measured continue, to ensure the validity of resilience research.

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Part C

Appendix of supporting material

Appendix A. Ethics panel approval letter

This has been removed from the electronic copy.

Appendix B. Information sheet for parents.

Canterbury
Christ Church
University

Salomons Centre for Applied Psychology
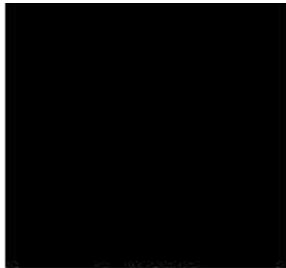
April 2016

Dear parents/guardians of pupils at

The relationship between emotional intelligence, significant school relationships, pro-social behaviour and resilience in adolescents with social, emotional and behavioural difficulties.

My name is Victoria and I am a trainee clinical psychologist at Canterbury Christ Church University. I am inviting all pupils of   to take part in a research study. In order for them to be able to take part, I would need permission from their legal guardian. Before you decide whether or not you agree to this, it is important that you understand why the research is being done and what it would involve for them.

What is the purpose of the study?
This study is designed to help us understand what factors in the lives of young people at school help them to be successful and enjoy elements of their lives despite any difficulties. We are interested in young people's understanding of emotions, their relationships with staff and pupils within school as well as behaviour, and how these factors impact resilience.

Why has my young person been invited?
All pupils from   who are over 11 years old have been invited to take part. This is because we feel that pupils from this school may have helpful information about what factors help to build resilience.

Do they have to take part?
It is up to you and individual pupils to decide whether they join the study or not. If you agree for them to take part, you would need to sign the attached consent form. The pupils will also need to sign a separate form. You are free to withdraw your permission at any time, without giving a reason. It is okay if you do not want them to take part.

What will happen if they take part?
Pupils will be invited to complete three questionnaires in school. School staff and I will be available to help pupils with this. They can choose whether they complete them on a computer or on paper.

What are the possible disadvantages and risks of taking part?
Some young people may not like to fill out questionnaires and may find this difficult or upsetting. We will advise pupils to speak to either myself or a member of staff from the school if they have any concerns.

What are the possible benefits of taking part?
We hope the research will help us to know whether this school is helping and supporting pupils in the way that pupils feel is best. Hopefully this would benefit your young person if it led to changes in the way pupils are supported. We hope this could then also help other schools.

Salomons Centre for Applied Psychology

It also might be an interesting experience for pupils to take part in some research. Pupils who take part will be entered into a raffle to win one of six £15 high street vouchers.

Will taking part in the study be kept confidential?
Each pupil will be given a participant number so their names are not used and their responses will remain anonymous. This will ensure that no one is able to identify who completed each questionnaire. The anonymous data will stored securely, with electronic data being encrypted and paper data being stored in locked cabinets. This information will be used in a report, which will also not have any names in it. The report will be given to the university to mark as part of my training programme.

What will happen to the results of the research study?
You will be invited to hear the results of the study in an optional presentation at the school. You will also be able to see a copy of the report if you would like, once it is finished. It is possible that the report might be published in a journal one day but again no names will be used.

Who is organising and funding the research?
Canterbury Christ Church University are organising and funding the research. ████████████ and ████████ have also been involved in organising this.

Who has reviewed the study?
All research is looked at by a group of people, called a Research Ethics Committee, to protect the interests of all who take part. This study has been reviewed and given favourable opinion by the Salomons Research Ethics Committee.

What will happen if I change my mind?
You can withdraw your permission at any time and the pupils data will be withdrawn from the study. Similarly, the pupils are able to leave at any time and this will not lead to any consequences from the school.

What if there is a problem?
If there is a problem during this process, you could either discuss this with myself or either of my supervisors; ████████████████████ and Dr Trish Joscelyne (Canterbury Christ Church University) or with ████████████ at school. If this hasn't solved your problem, you could also contact the university:

Professor Paul Camic
Research Director- Salomons Centre
David Salomons Estate
Broomhill Road
Tunbridge Wells, TN3 0TG
Tel: 03330117114

If you would like to find out more about the study, you can leave a message for me on a 24-hour voicemail phone line at 01892 507673. Please specify that the message is for Victoria and leave a contact number so that I can get back to you.
THANK YOU FOR YOUR TIME

Appendix C. Information sheet for pupils.

Canterbury
Christ Church
University

Salomons Centre for Applied Psychology

Dear pupil of

Victoria's research project: Emotions, relationships, friendships and behaviour-
what helps young people to have good outcomes?

Hello. My name is Victoria and I am a trainee clinical psychologist at Canterbury Christ Church University. I would like to invite you to take part in a research study.

What is this research about?
We want to find more about what schools do to helps pupils to have a good future.

Why me?
All pupils from School are invited. We're interested in hearing different experiences of being with school staff and with your peers and how this impacts your future.

What will happen?
You will be invited to fill out three questionnaires. You can do this on the computer or on paper. I will be around to help you with this.

Will everyone be able to know my answers in the questionnaires?
No, your name won't be used on any of the questionnaires and so we will not know which answers were yours.

Do I have to take part?
No, it is up to you to decide. If you agree to take part, I will ask you to sign a form. Your parents/guardians also need to agree for you to be able to take part. They are asked to sign a different form. Saying you do not want to take part is okay.

Department of Psychology, Politics and Sociology
Faculty of Social and Applied Sciences

Canterbury Christ Church University
Runcie Court David Salomons Estate
Broomhill Road Tunbridge Walls Kent TN3 0TF (UK)
Tel +44 (0)333 011 7102   Fax +44 (0)1892 520888
www.canterbury.ac.uk

Professor Rama Thirunamachandran, Vice-Chancellor and Principal

Canterbury
Christ Church
University

Salomons Centre for Applied Psychology

What are the pros and cons of taking part?
Some people might not like filling out questionnaires or thinking about some of the questions. It is really important that you either speak to me or someone in school if you find any of the questions upsetting.

We hope this will help us find out the most useful ways to help pupils in school.
It also might be interesting for you to take part in some research.

Every pupil who takes part in the research will be entered into a **raffle** to win one of

6 x £15

vouchers which can be spent in most high street shops.

What will you do with the information?
I will come to your school to let you know what I found out. I'll be writing a report too which you can see if you want to. When I write up my research, I won't be using anyone's names so no one will know you what you answered in the questionnaires.

Further information and contact details
If you have any further questions about the research, please feel free to contact me on the details below. Alternatively you could speak to ████████████████ in school.

Victoria Neville- *01892 507673 (please leave a message explaining the message is for Victoria and I will call you back)*

If you wanted to make a complaint, or speak to the university directly about the study, please contact:

Professor Paul Camic
Research Director- Salomons Centre
David Salomons Estate
Broomhill Road
Southborough
Tunbridge Wells, TN3 0TG
Tel: 03330117114
Please keep this information sheet for you to look at again if you would like to. You will also be given a copy of the consent form for you to keep too.
THANK YOU!

Appendix D. Consent form for parents.

Canterbury
Christ Church
University

Salomons, Centre for Applied Psychology
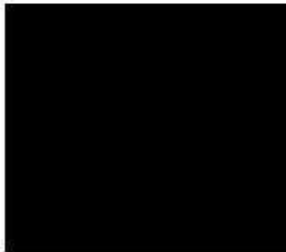
Dear parents/guardians, April 2016

The relationship between emotional intelligence, significant school relationships, pro-social behaviour and resilience in adolescents with social, emotional and behavioural difficulties.

Please ensure you have read and understood the attached information sheet. Pupils will not be able to take part without your permission.

Please initial box

1. I confirm that I have read and understood the information sheet dated April 2016 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2. I understand that participation is voluntary and that I am free to withdraw permission at any time without giving any reason.

3. I understand that the results from this research are going to be included in a report and that my young person's details (such as their name) will not be used.

4. I agree for the young person named below to take part in the above study.

5. I understand all data will be stored securely and will be kept for up to ten years in line with research protocols.

Name of Pupil_____

Name of Parent/Guardian/Carer_____

Date_____

Signature _____

Name of Researcher: Victoria Neville, Trainee Clinical Psychologist.

Appendix E. Consent form for pupils.

Canterbury
Christ Church
University

Salomons Centre for Applied Psychology

Dear pupil,   April 2016

For you to be able to take part in the research, you need to read and sign this form.

Emotions, relationships, friendships and behaviour- what helps young people to have good outcomes?

Name of Researcher: Victoria Neville

Please initial box

1. I confirm that I have read and understand the information sheet for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason. I understand that this is okay.

3. I understand that a report will be written about this study and know that my name will not be used.

4. I agree to take part in the above study.

5. I understand all data will be stored securely and will be kept for up to ten years in line with research protocols, and then destroyed.

Name of Participant_____ Date_____

Signature _____

Witnessed by _____

Thank you for considering taking part in this research.

Appendix F. The Resiliency Scale for Children and Adolescents (Prince-Embury, 2007)

This has been removed from the electronic copy.

Appendix G. The Trait Emotional Intelligence Questionnaire- Adolescent Short Form
(TEIQue-ASF; Petrides, Sangareau, Furnham, & Frederickson, 2006)

This has been removed from the electronic copy.

Appendix H. Psychological Sense of School Membership (Goodenow, 1993)

This has been removed from the electronic copy.

Appendix I. McGill Friendship Questionnaire- Friendship Function (MFQ-FF; Mendelson &

Aboud, 1999)

This has been removed from the electronic copy.

Appendix J. Questionnaire subscales.

Table K1.

All subscales for each questionnaire used.

Questionnaire	Subscales
The Resiliency Scale for Children and Adolescents (Prince-Embury, 2007)	Reactivity
	Relatedness
	Mastery
	Index score: Resilience resources
	Index score: Vulnerability
The Trait Emotional Intelligence Questionnaire- Adolescent Short Form (TEIQue-ASF; Petrides, Sangareau, Furnham, & Frederickson, 2006)	Emotional difficulties
	Behavioural difficulties
	Hyperactivity and concentration
	Social difficulties
	Helpful/prosocial behaviours
	Total distress
Psychological Sense of School Membership (Goodenow, 1993)	None
McGill Friendship Questionnaire-Friendship Function (MFQ-FF; Mendelson & Aboud, 1999)	Stimulating
	Helpful
	Intimate
	Reliable
	Self-validating
	Remorseful
	Friendship total

Appendix K. Histograms.
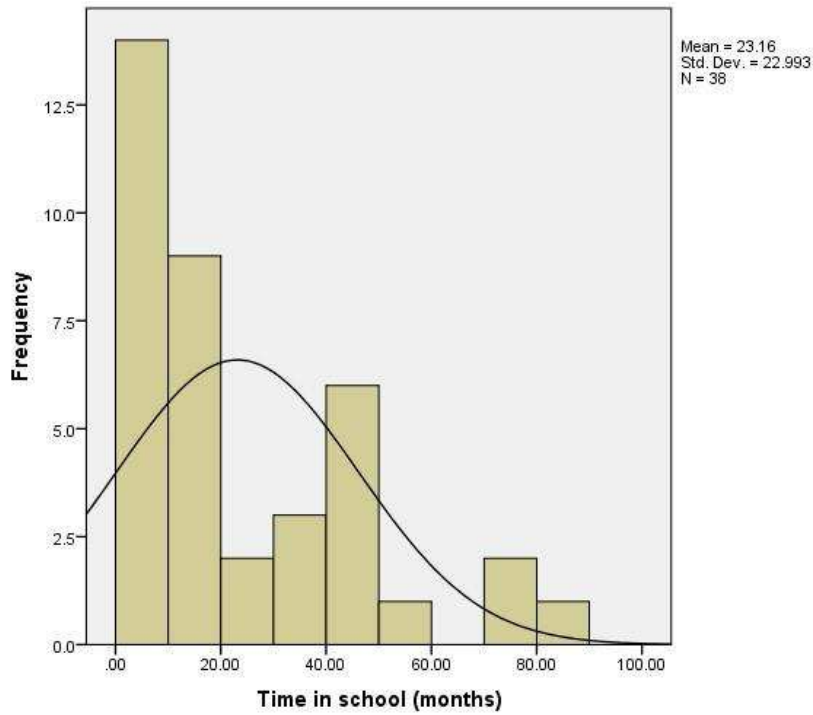
Figure K1. Histogram of distribution of length of time in specialist school.
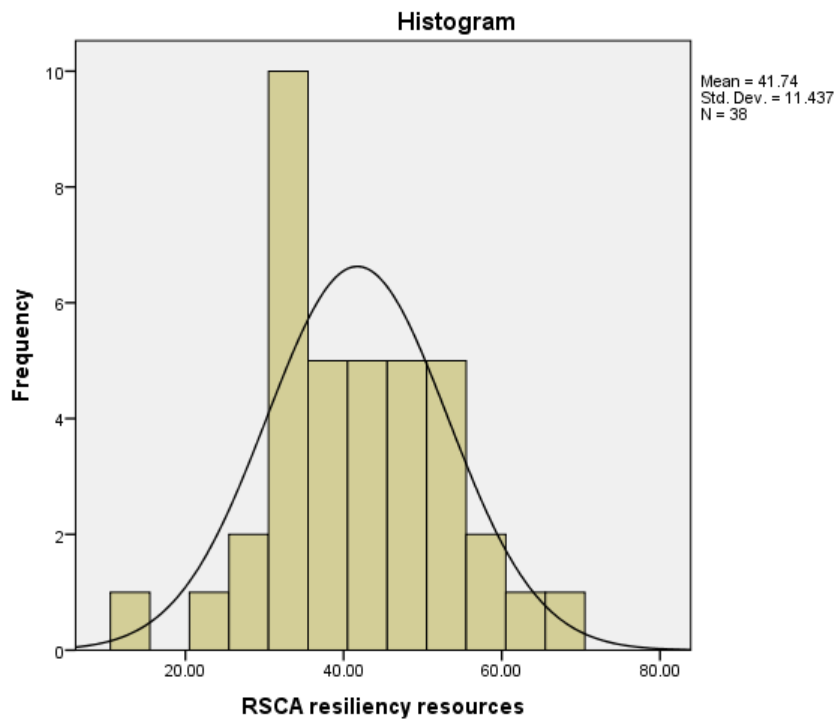
Figure K2. Histogram of distribution of resilience resources scores.
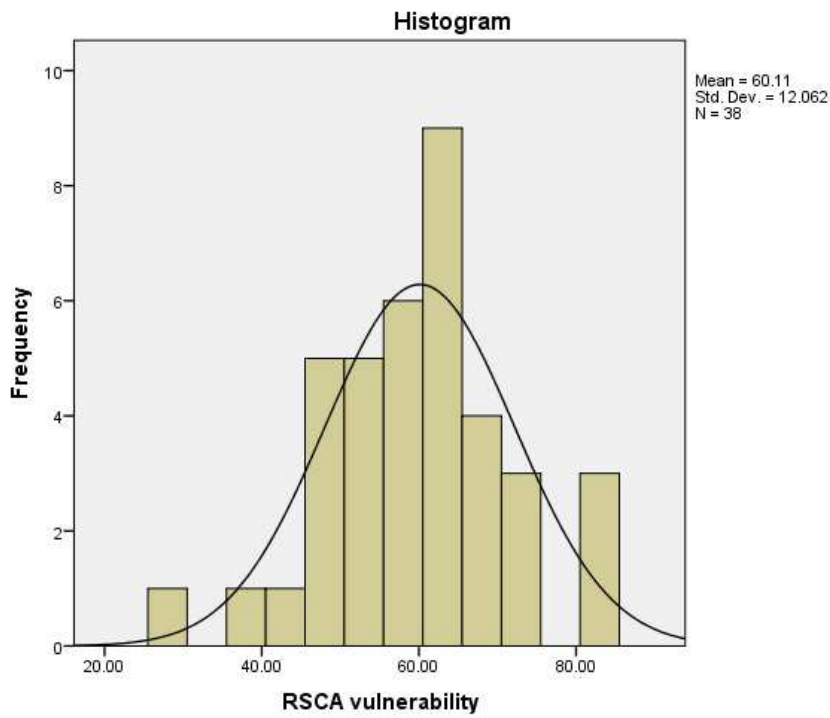
Figure K3. Histogram of distribution of vulnerability scores.
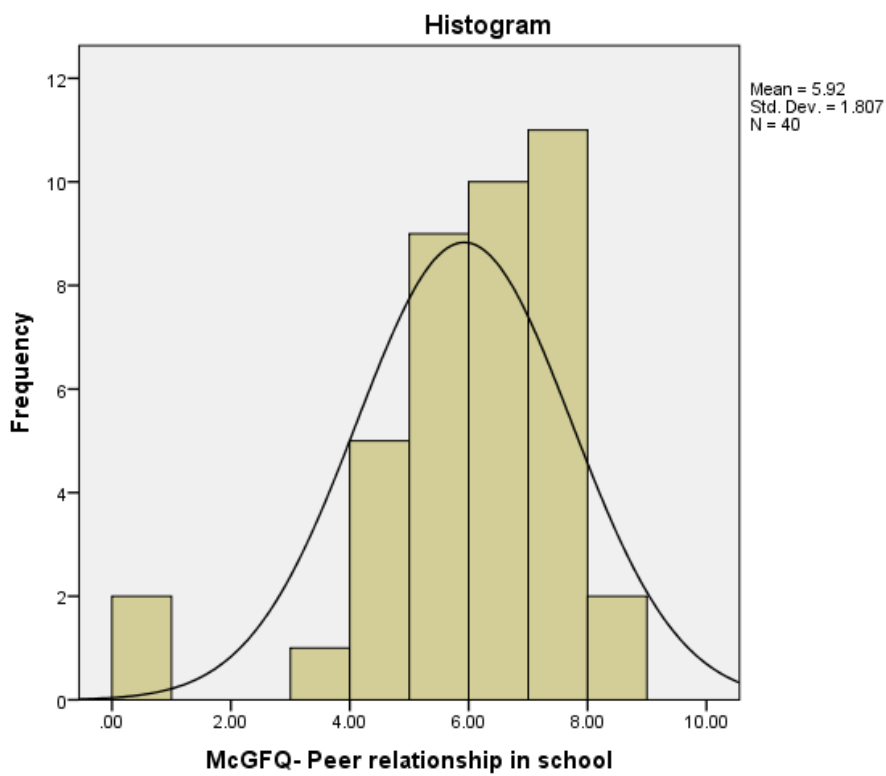
Figure K4. Histogram of distribution of peer relationship scores.
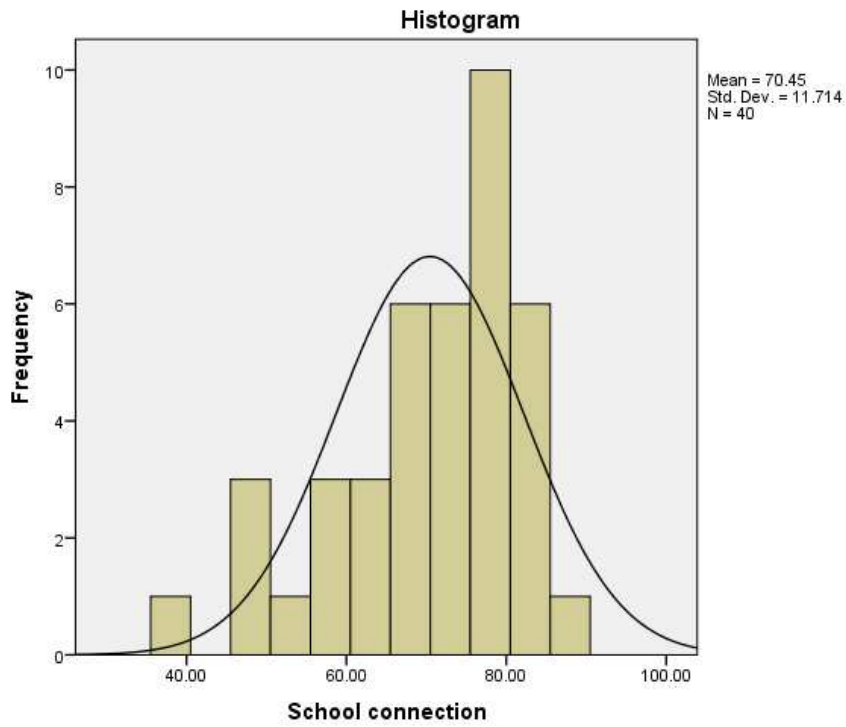
Figure K5. Histogram of distribution of school connection scores.
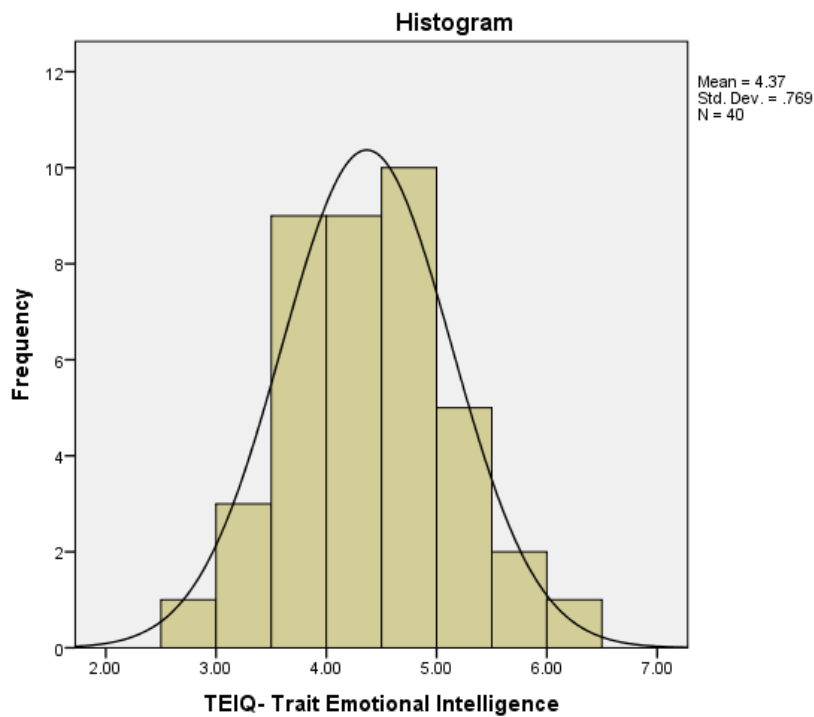
Figure K6. Histogram of distribution of trait emotional intelligence scores.

Table K1

Skewness and Kurtosis results for all variables

	TIS	TEI	Peer rel	Sch conn	Resources	Vulnerability
Skewness	1.05	0.17	-1.68	-1.01	0.08	-0.07
Kurtosis	0.18	-0.16	3.83	0.74	0.17	0.55

Table K2

Tests for normality

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
TIS	.21	38	.000	.85	38	.000
TEI	.08	38	.200	.99	38	.943
Peer rel	.14	38	.068	.85	38	.000
Sch conn	.13	38	.126	.93	38	.014
Resources	.10	36	.200	.98	36	.854
Vulnerability	.09	36	.200	.98	36	.702

Appendix L. Correlations.

Table A1.

Correlations of all subscale scores for each measure.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
RCSA	1. Resilience resources	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2. Vulnerability	-.849** .000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3. Mastery	.935** .000	-.766** .000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4. Relatedness	.809** .000	-.702** .000	.699** .000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5. Reactivity	-.547** .001	.892** .000	-.484** .003	-.431** .009	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6. Stimulating	.281 .097	-.188 .273	.298 .078	.319 .058	-.035 .841	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7. Helpful	.147 .391	-.053 .758	.083 .632	.243 .154	.033 .851	.704** .000	-	-	-	-	-	-	-	-	-	-	-	-	-
	8. Intimate	.216 .207	-.099 .564	.233 .172	.309 .067	-.017 .920	.561** .000	.651** .000	-	-	-	-	-	-	-	-	-	-	-	-

Scale	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	9. Reliable	.145 .399	-.057 .743	.136 .429	.269 .112	.012 .947	.782** .000	.690** .000	.734** .000	-	-	-	-	-	-	-	-	-	-
	10. Self-validating	.325 .053	-.286 .091	.274 .106	.413* .012	-.184 .283	.844** .000	.763** .000	.650** .000	.784** .000	-	-	-	-	-	-	-	-	-
McGFQ	11. Remorseful	.219 .199	-.118 .493	.193 .259	.345* .039	-.025 .887	.719** .000	.707** .000	.799** .000	.817** .000	.760** .000	-	-	-	-	-	-	-	-
	12. Friendship total	.245 .149	-.145 .398	.224 .188	.350* .036	-.038 .828	.865** .000	.854** .000	.844** .000	.909** .000	.902** .000	.910** .000	-	-	-	-	-	-	-
Schconn	13. School connection	.155 .365	-.096 .579	.164 .340	.313 .063	-.016 .926	.247 .134	.359* .027	.322* .049	.232 .162	.180 .279	.320 .050	.318 .052	-	-	-	-	-	-
	14. Well-being	.662** .000	-.628** .000	.589** .000	.570** .000	-.413* .012	.428** .007	.289 .079	.364* .024	.309 .059	.428** .007	.288 .080	.398* .013	.504** .001	-	-	-	-	-
	15. Self-control	.345 .039	-.595** .000	.279 .099	.217 .204	-.6611** .000	.104 .533	.036 .829	.069 .682	.191 .251	.150 .368	.166 .320	.133 .426	.181 .275	.459** .004	-	-	-	-
	16. Emotionality	.334* .047	-.483** .003	.222 .193	.450** .006	-.449** .006	.072 .669	.105 .531	.154 .356	.144 .387	.255 .123	.126 .450	.161 .333	-.058 .730	.236 .153	.401* .013	-	-	-
TEIQ-ASF	17. Sociability	-.091 .598	.219 .216	-.124 .471	.060 .729	.256 .132	.275 .094	.319 .051	.321* .050	.460** .004	.189 .255	.440** .006	.381* .018	.336* .039	.162 .3332	.069 .681	.006 .972	-	-
	18. TEI total	.530** .001	-.630** .000	.426** .010	.491** .002	-.546** .001	.328* .045	.206 .214	.284 .084	.382* .018	.389* .016	.312 .057	.358* .027	.280 .088	.737** .000	.777** .000	.642* .000	.358* .027	-
TIS	19. Time in school	.398* .016	-.376* .024	.422* .010	.328 .051	-.242 .155	.131 .432	.167 .317	.187 .262	.118 .479	.198 .233	.187 .261	.188 .259	.238 .143	.366* .024	.375* .020	.186 .264	-.271 .100	.283 .086

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	Mean	41.67	59.78	42.94	40.83	59.39	6.11	5.55	5.59	6.66	5.61	5.73	5.87	70.89	5.07	3.67	4.06	5.07	4.38	23.16
	SD	11.51	12.32	10.61	10.70	11.94	2.01	2.12	2.45	2.05	1.91	2.02	1.84	11.46	1.55	1.26	.91	.96	.78	22.99
	n	36	36	36	36	36	38	38	38	38	38	38	38	38	38	38	38	38	38	38

Note. N (listwise)= 38. SD = standard deviation.

*p <.05, **p < .01.

Appendix M. Feedback to ethics committee.

Resilience-promoting processes in SEBD schools.

Introduction: Resilience is often described as the ability to 'bounce back' in the face of adversity. It is now widely understood that resilience is dependent upon a number of factors, including the socio-ecological world in which an individual exists. With increasing numbers of children and young people experiencing mental health difficulties, it is important that we continue to develop our understanding of resilience, in order to guide the way in which we work with young people.

School is a very significant part of the lives of young people. School can provide an opportunity for pupils to make relationships with staff, form friendships, become more autonomous and develop a multitude of skills in addition to academic learning. Whilst there is some research which explores the ways that mainstream schools facilitate resilience development, less is known about specialist provisions. This research looked at whole-school factors, rather than individual resilience programmes which some school use for targeted pupils.

The study: This research aimed to investigate whether being in a specialist school for pupils with social, emotional and behavioural difficulties (SEBD) was associated with increased resilience. Having a connection to the school and having a friendship in school were explored as possible factors that could explain this association. Trait emotional intelligence (TEI) was also explored as a possible contributing factor to having the ability to form a connection to school and make friends.

Two SEBD schools were involved, and a total of 38 pupils took part. Pupils completed a series of self-report questionnaire with the research in school. Pupils were age 11-18 and needed to have been school for six weeks in order to take part.

Results: The length of time that pupils attended the school was found to be a significant predictor of resilience. Neither school connection or having a peer in school were found to be significant mediators of this association. Although TEI was not found to be a moderator, it was identified as a significant predictor of resilience.

It is hoped that this information could help schools to identify pupils who have lower TEI and also to think about the way in which these skills can be encouraged in school, despite EI being a trait ability. This research highlights the need for ongoing research into understanding what mechanisms enable resilience to be developed in school in order this to be capitalised.

Appendix N. Feedback to participants.

Thank you!

Thank you for meeting with me last year to complete some questionnaires together.

This was for some research I am doing at University.

From looking at everyone's answers to the different questionnaires, I found out some interesting things:

- People who go to schools like yours seem to have become more resilient (have better outcomes in life) the longer they go to the school.

- People who go to schools like yours seem to become less vulnerable (less likely to get upset, get into trouble, or to hurt themselves or other people) the longer they go to your school.

- I learnt that the skills pupils have which help them to understand emotions (like happiness, sadness, anger) are really important in helping them to have better outcomes and be less vulnerable.

This information is really helpful to people who work with pupils that attend schools like yours. I hope it can help them in their work when they are supporting you all in school.

I think some of this is a bit tricky to explain in writing, so I'm going to come to an assembly soon and explain it a bit better. I'm looking forward to coming to your school again.

Thank you so much for all of your hard work. Without your help, we would not have found out all the new information. You should feel very proud.

Victoria Neville
Trainee Clinical Psychologist

Appendix O. Author guideline notes for the Emotional and Behavioural Difficulties journal.

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About the journal

Emotional and Behavioural Difficulties is an international, peer reviewed journal, publishing high-quality, original research. Please see the journal's Aims & Scope for information about its focus and peer-review policy.

Please note that this journal only publishes manuscripts in English.

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