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Faculty of Environmental and Life Sciences

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A Way to Grow? An Exploration of the Impact of Different Types of Gratitude Diary and the Association Between Gratitude and Post Traumatic Growth

By

Stephanie Louise Bowen

Thesis for the degree of Doctorate in Educational Psychology

October 2023

ORCID ID: 0009-0006-9758-6846

University of Southampton**Abstract**

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Thesis for the degree of Doctorate in Educational Psychology**A Way to Grow? An Exploration of the Impact of Different Types of Gratitude Diary
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Gratitude is a trait which can be cultivated to help us become more satisfied with the past (Seligman, 2002). As such, it is plausible that gratitude could be associated with Posttraumatic Growth (PTG; a positive psychological change occurring in the aftermath of an adverse experience; Tedeschi & Calhoun, 2004) and this forms the focus of a systematic literature review. This review tentatively finds evidence of the association between gratitude and PTG and presents its findings in the context of gratitude being a correlate to PTG, predicting PTG and being a mediating and/or moderating variable in PTG's relationship with other variables (e.g., social support and deliberate rumination). By understanding how gratitude is associated with PTG we might better understand how to utilise gratitude interventions to facilitate positive psychological change. Limitations of the review are discussed along with proposals for future research and implications for educational psychology practice. It is hoped this review contributes to how we can best support young people in the context of current global adversities.

Gratitude diaries are a positive psychology intervention used with children and young people (CYP); the evidence regarding their effectiveness, however, is mixed. In an empirical study it is explored whether diaries presented in a positively reinforcing (i.e., writing to feel good) or negatively reinforcing (i.e., writing to avoid feeling bad) style, has an impact on children's gratitude and wellbeing scores in comparison to a control group. Children from three different year groups in a UK primary school were randomised at a class level to one of three groups

(intrinsic motivation , moral obligation , event diary) and filled out a daily diary at school for three weeks. Children completed four self-report measures which explored gratitude, positive affect, and sense of school belonging, across three time points (pre and post intervention and at a three week follow up). No significant effect of diary condition was found on gratitude or wellbeing scores across the whole study. There was mixed evidence regarding changes in participant gratitude scores, with one gratitude measure indicating a significant effect of time, such that gratitude scores increased over time in all three conditions. The findings are discussed considering the strengths and weaknesses of the research, and it is suggested that gratitude diaries may be more beneficial as a targeted intervention, rather than a universal one.

Keywords: Gratitude, Gratitude Diaries, Post Traumatic Growth, Children and Young People

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Research Thesis: Declaration of Authorship

Print name: Stephanie Louise Bowen

Title of thesis: A Way to Grow? An Exploration of the Impact of Different Types of Gratitude Diary and the Association Between Gratitude and Post Traumatic Growth

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

I confirm that:

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

Signature:

Date: 03.10.2023

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Definitions and Abbreviations

α	Cronbach's alpha coefficient
ACE(s)	Adverse Childhood Experience(s)
Amazon MTurk.....	Amazon Mechanical Turk
ANOVA	Analysis of Variance
B	Beta Standardised Coefficient
BBT	Broaden and Build Theory
CAMHS	Child and Adolescent Mental Health Service
CGS	Christian Gratitude Scale
COVID-19.....	Coronavirus Disease 2019
CYP	Children and Young People
DD.....	Developmental Disability
df	Degrees of Freedom
DR.....	Deliberate Rumination
DSM-5.....	Diagnostic and Statistical Manual of Mental Disorders – 5 th Edition
EBSCO.....	Elton B. Stephens Company
EP	Educational Psychologists
EPD	Early Parental Death
ERGO	Ethics and Research Governance Online
ERIC	Education Research Information Centre
F	ANOVA F Statistic
f	Cohen's f statistic for effect size in ANOVA
g	Hedge's g effect size
GDPR	General Data Protection Regulation
GQ-6.....	Gratitude Questionnaire – Six Item Form
ID	Identification
IR	Intrusive Rumination

<i>k</i>	Cohen's Kappa coefficient
<i>M</i>	Mean
MANOVA.....	Multivariate Analysis of Variance
Medline.....	Medical Literature Analysis and Retrieval System Online
MHST(s)	Mental Health Support Team(s)
<i>n</i>	Number
<i>np</i> ²	Partial Eta-Squared Effect Size
<i>p</i>	Probability (statistical significance)
PA.....	Positive Affect
PANAS	Positive and Negative Affect Subscale
PANAS-C.....	Positive and Negative Affect Subscale for Children
PP.20.....	Positive Psychology 2.0
PRISMA	Preferred Reporting Items for Systematic Reviews
PTG.....	Post Traumatic Growth
PTGI.....	Post Traumatic Growth Inventory
PTGI-SF.....	Post Traumatic Growth Inventory Short Form
PTGI-X	Post Traumatic Growth Inventory Expanded
PTS	Post Traumatic Stress
PTSD.....	Post Traumatic Stress Disorder
PWB	Psychological Wellbeing Scale
Q-SSP	Quality of Survey Studies in Psychology
QUAY.....	Questionnaire of Appreciation in Youth
<i>r</i>	Pearson's Correlation Coefficient
<i>SD</i>	Standard Deviation
SEM	Structural Equation Modelling
SENCo.....	Special Educational Needs Coordinator
SoSB	Sense of School Belonging

SPSS.....Statistical Package for Social Sciences

TEPTrainee Educational Psychologist

T1Time 1

T2Time 2

T3Time 3

USA.....United States of America

VIA.....Values In Action

VRA.....Voluntary Research Assistant

YPYoung People

χ^2 Chi Squared statistic

Chapter 1 - A Way to Grow? An Exploration of the Impact of Different Types of Gratitude Diary and the Association Between Gratitude and Post Traumatic Growth

This thesis is comprised of three chapters. Chapter one sets the context for the thesis, placing it within the current academic literature and providing a comprehensive rationale for the necessity of the research. Chapter two is a systematic literature review exploring if there is an association between gratitude and post traumatic growth (PTG). Finally, chapter three is an empirical study which employed a novel gratitude diary intervention to assess the impact of gratitude diary presentation on children's gratitude and wellbeing.

Both papers have been written with the possibility of submission to the international Journal of Positive Psychology and Wellbeing in mind (see Appendix A for journal descriptors). Both papers currently exceed the average word count for the journal because they contain the detail necessary to justify the research and provide the depth of understanding desirable for doctoral submission. It is intended, therefore, to reduce the word count post viva amendments to align with the average journal criteria.

1.1 Positive Psychology

This research sits within the broad research area of positive psychology. Positive psychology is described as "an umbrella term for the study of positive emotions, positive character traits, and enabling institutions" (Seligman et al., 2005, p. 410), which, unlike traditional psychological approaches, focuses on an individual's potential (Boniwell, 2012). Whilst the premise of positive psychology is not new (Linley et al., 2006), the introduction to positive psychology published by Seligman and Csikszentmihalyi (2000) appeared to rejuvenate the interest in studying this field within the academic literature, with Seligman et al. (2005) claiming that positive psychology had flourished in the five year timeframe.

Linley et al. (2006) describe positive psychology as the study of "optimal functioning" (p.8) and argue for an integrative understanding of an individual's positive and negative experiences within the field. More recently, a balanced model of positive psychology has been suggested and introduced ('Positive Psychology 2.0' (PP2.0); Wong, 2011) which seeks to bring together the study of one's positive and negative experiences.

Positive psychology interventions are those which seek to enhance an individual's positive thoughts, feelings, and behaviours (Sin & Lyubomirsky, 2009). A recent meta-analysis of positive psychology interventions (including practising gratitude and identifying and using signature strengths, amongst many other interventions), found these types of interventions to be effective

in both clinical and non-clinical samples for both preventing and treating individual needs, including anxiety and depressive symptoms (Carr et al., 2021). Specifically, practising gratitude had a medium effect size ($g = 0.30$) on increasing participant wellbeing.

Within Carr et al.'s review, some research took place within the school context; Waters(2011) argues that educational settings play an increasingly important role in developing the social and emotional skills of children and young people (CYP). This aligns with the positive education paradigm which calls for an equal value to be placed on children's academic skills and wellbeing (Kern & Wehmeyer, 2021). The context of the empirical study described in chapter three is an educational setting and, therefore, it is hoped that this thesis contributes to the academic literature on positive psychology interventions which demonstrates that educational settings can be a helpful environment within which to develop CYP's wellbeing.

1.2 Gratitude

Gratitude is claimed to be a "universal human attribute" (Emmons & Stern, 2013, p. 847) and has been identified as one of 24 human strengths, sitting within the virtue of transcendence (Peterson & Seligman, 2004). The definition of gratitude is debated within the literature with some researchers using a narrow definition (i.e., gratitude is experienced when a benefactor receives an unexpected gift from a benefactor) and others using a broad definition (i.e., a general appreciation for the good things in life) (Lambert et al., 2009). Gratitude has also been described as a moral motivator, whereby if a benefactor experiences gratitude from their beneficiary they are more likely to engage in this type of behaviour again (McCullough et al., 2001).

The knowledge base surrounding gratitude in the early literature mainly stems from research with adults and this is reflected in some of the early systematic literature reviews (e.g., Wood et al., 2010, which only contained three studies with children). Exploring gratitude with children, however, has increased in the academic literature and there have been more recent reviews which include a greater number of research studies with children (Renshaw & Olinger Steeves, 2016). Obeldobel and Kerns (2021) suggest that this increase in academic interest could stem from findings which suggest that gratitude interventions may have a beneficial impact on children's wellbeing. In addition to gratitude's impact on wellbeing, Wilson (2016) argues that gratitude practice can influence learning and resilience by increasing focus and creating a positive attitude towards academic challenges. As such, they suggest that gratitude practice is worth educational consideration.

Some of the current systematic reviews and meta-analyses available within the literature, however, produce mixed findings regarding the effectiveness of gratitude interventions.

Obeldobel and Kerns (2021) found a significant impact of gratitude interventions on children's wellbeing, particularly positive affect and life satisfaction, whilst Dickens (2017) concludes a need for caution when interpreting findings because of methodological challenges within individual studies. Likewise, Renshaw and Olinger Steeves (2016), in their meta-analysis, report ambiguous findings relating the impact of gratitude interventions and promote the necessity for further research.

Specifically, gratitude journaling is a positive psychology intervention which has been suggested to have a positive impact on enhancing gratitude (Emmons & McCullough, 2003). Journaling seeks to enhance gratitude at the emotional level, and it is claimed that the act of mindfully paying attention to daily experiences and systematically recording thoughts into words has more benefits than merely having the cognitions alone (Emmons & Stern, 2013).

1.3 Rationale

During the first year of being a Trainee Educational Psychologist (TEP), trainees were encouraged to complete the Values In Action (VIA) Character Strengths Survey (viacharacter.org, 2023). The outcome suggested that one of my top three character strengths was gratitude; this resonated with me as an accurate reflection of myself generally, and it was a strength being drawn upon a lot at the time given the context of training during the global covid-19 pandemic. During the pandemic, I found myself counting my blessings which centred around feeling grateful for my acceptance onto the course and the health of my family and friends.

This combination of gratitude as a character strength and living (and training) during a time which some may now describe as being a traumatic and stressful event led to wonderings about how individuals use their strengths during time of stress. More recently, the conflict in countries outside of the United Kingdom made this wondering grow, and when my placement experiences as a TEP started to involve children, young people, and their families who had been impacted by these conflicts, I decided to formulate my review research question around this.

1.3.1 Systematic Literature Review (Chapter Two)

The systematic literature review explores the evidence regarding the association between gratitude and PTG. In 2000, Seligman and Csikzentmihalyi predicted that positive psychology would help psychologists to better understand and "build those factors that allow individuals, communities and societies to flourish" (p.13). The value placed on exploring what enables individuals to flourish influenced the research question's focus on gratitude and PTG as opposed to gratitude and post-traumatic stress. In their article presenting gratitude as a psychotherapeutic

intervention, Emmons and Stern (2013) state that there had been an “explosive” rise in research on trauma-induced transformation (p. 853), yet, during initial scoping searches, it appeared that no such review of literature had been completed. Given the current global context, it was thought that this was a novel review which was appropriate and meaningful because it could elucidate whether gratitude is a mutable trait which may be cultivated to help individuals grow following adversity and trauma.

The review is set within the context of second wave positive psychology (PP2.0) which is described to value all human experience (Kern & Wehmeyer, 2021), whether positive or negative. Understanding one’s unpleasant/negative experiences can be important for valuing and understanding pleasant/positive experiences (Wong, 2011). The implications from the review are intended to inspire awareness and understanding for those working in educational settings regarding the helpfulness of gratitude and how this trait can be cultivated through interventions which may facilitate growth, and flourishing, for those who have experienced life-altering adversity.

1.3.2 Empirical Study (Chapter Three)

Given the challenges that CYP have faced with their school experience in recent years, the empirical study explores the impact of gratitude diaries on children’s wellbeing and gratitude in a school context. In 2004, Peterson and Seligman stated that gratitude has “largely been ignored in academic psychology” (p.555). Since this time there has been an increase in research, particularly thesis research, which has sought to explore the impact of gratitude interventions, particularly gratitude diaries, on a variety of populations including CYP.

The empirical study builds on previous theses which have explored gratitude diaries in relation to school belonging (Diebel, 2014), anxiety (Cripps, 2019), and in comparison to appreciation diaries (Shuttleworth, 2018). It is this previous thesis research – particularly Cripps (2019), which influenced the empirical study to distinguish between a diary designed to present gratitude as something that children would enjoy expressing (i.e., to be intrinsically motivating and rewarding) and one designed to present gratitude as something one ought to express because it is the right thing to do (i.e., it is a moral obligation and could be considered extrinsically motivating). This conceptualisation was formulated because of the pleasant imagery and the celebration of gratitude that was portrayed in Cripps’s gratitude diary condition and this inspired thinking about how important the presentation of gratitude diaries is to the success of the intervention for CYP. This led to the formulation of the moral obligation gratitude diary condition as being a replica of the gratitude diaries which had gone before which had not made such a

distinction, and the intrinsically motivating gratitude diary condition which encapsulated a more positive and celebratory rhetoric about gratitude and being thankful.

During the intervention the diaries were conceptualised as being either positively or negatively reinforcing with the positive reinforcement diary presenting gratitude as an enjoyable activity (i.e., intrinsically motivating) and the negative reinforcement diary presenting gratitude as something one ought to do to avoid aversive feelings, such as being perceived as ungrateful (i.e., extrinsically motivating). On reflection, the diary manipulation was unsuccessful during the study, and it therefore could be argued that the concept of the diaries as being reinforcing was an inaccurate description. As such, and following viva examination, the diary conditions have been reconceptualised to more accurately reflect the underlying theory upon which they were designed.

Measures of Gratitude. To measure gratitude within the empirical study the Gratitude Questionnaire – Six Item Form (GQ-6; McCullough et al., 2002) and the recently developed Questionnaire of Appreciation in Youth (QUAY; Smith, 2020) were used. The QUAY was developed and validated with children eight to 10 years old and was designed to be more sensitive, comprehensive, and accessible than other measures, including the GQ-6. The use of both measures, therefore, was deemed appropriate in this research to contribute to the evidence base of the QUAY, whilst capturing children’s gratitude with an already established self-report tool.

Measures of Wellbeing. The empirical study conceptualised wellbeing as being derived from two elements: children’s sense of school belonging and their positive affect. This construction is based on the formulation that subjective wellbeing is comprised of an individual’s life satisfaction and their affective state (Diener, 2000). School belonging is likened to the measure of school satisfaction used by Froh et al. (2008) as, whilst it is acknowledged that this is not a specific measure of life satisfaction, children spend a large proportion of their day at school and therefore it was considered that their sense of school belonging may impact their sense of satisfaction and, as such, wellbeing.

1.4 Psychological Theory

This thesis is underpinned by theories such as broaden and build (Fredrickson, 2001). Since its formation, broaden and build theory has been developed to specifically include gratitude and hypothesises that positive emotional experiences (such as gratitude) can lead to an upward spiral of behaviour that benefits both the individual and society (Fredrickson, 2004a). It theorises that by increasing an individual’s positive emotional experiences (e.g., gratitude) they can build greater social and personal resources which can be drawn upon in times of challenge or adversity.

1.5 Ontology and Epistemology

Both papers in this thesis have been conducted within a quantitative research paradigm. The empirical study is a randomised control experimental design which used quantitative measures to analyse intervention impact. Whilst participants wrote in gratitude diaries, these comments were not analysed beyond counting the length of comments (i.e., how many words) and how many entries participants had written during the intervention. Secondly, the findings of the systematic literature review are presented in a narrative synthesis style; this has allowed for a descriptive overview of the research in a narrative format to explain and describe the quantitative findings.

Overall, the philosophical position to this research has been that of critical realism (Bhaskar, 1975; 2008). This philosophy to research describes an ontological position of there being a reality in the world that is real (e.g., we can measure the concept of gratitude using quantitative tools), and the epistemological position that this reality can be subjective and that what is observed may be fallible.

Whilst this research assumes that variables such as gratitude and wellbeing are observable in the real world, it acknowledges the influence of the researcher and other factors on the findings. For example, the researcher went into school and read the questionnaire measures to all children and, as such, it is plausible that their tone of voice and general demeanour (e.g., enthusiasm for the research) may have had an impact on how children engaged with the activities. Consequentially, this may have affected how accurately children's answers reflected a true representation of their gratitude and wellbeing. Similarly, the class teacher was responsible for implementing the diary with the children during the intervention and, like the researcher, they too may have influenced how children participated in the diary activities, and thus impacted the extent to which children were motivated to engage in the activity.

Finally, in line with the critical realism framework the empirical study was based on *a priori* hypotheses and, therefore, was theory driven. Broaden and build theory (Fredrickson, 2001) has strongly influenced the formulation of hypotheses for the empirical study (outlined in chapter three) and the rationale for why gratitude may be associated with PTG (outlined in chapter two).

1.6 Contribution to the Literature

It is hoped that this thesis research contributes to the growing gratitude literature underpinned by positive psychology which supports calls for a positive curriculum in the education system (Kern & Wehmeyer, 2021). The implications outlined in chapter two and three

are designed with educational psychologists in mind in a bid to empower them to ethically recommend and implement gratitude interventions and understand the evidence base which underpins gratitude and its impact on wellbeing and PTG.

Chapter 2 – The Association Between Gratitude and Post Traumatic Growth: A Systematic Literature Review

2.1 Abstract

Gratitude is a trait which can be cultivated to help us become more satisfied with the past (Seligman, 2002). As such, it is plausible that gratitude could be associated with Posttraumatic Growth (PTG; a positive psychological change occurring in the aftermath of an adverse experience; (Tedeschi & Calhoun, 2004) and this forms the focus of this systematic literature review. Four databases were searched in December 2022 and yielded a variety of studies which shed light on the association between gratitude and PTG in the academic literature. This review tentatively finds evidence of the association between gratitude and PTG and presents its findings in the context of gratitude being a correlate to PTG, predicting PTG and being a mediating and/or moderating variable in PTG's relationship with other variables (e.g., social support and deliberate rumination). By understanding how gratitude is associated with PTG we might better understand how to utilise gratitude interventions to facilitate positive psychological change. Limitations of the review are discussed along with proposals for future research and implications for educational psychology practice. It is hoped this review contributes to how we can best support young people in the context of current global adversities.

2.2 Introduction

In the context of recent global events the exploration of how children and young people (CYP) are supported to overcome adverse and traumatic experiences is increasingly paramount. In recent years, the role of educational professionals in supporting CYP who have experienced adversity has been noted in projects such as the Alex Timpson Attachment and Trauma Awareness in School Programme (Oxford University Department of Education, 2023). This demonstrates the crucial role that schools can play in supporting CYP to cultivate the skills they need to overcome challenges and mitigate potential negative outcomes.

Despite this increasing focus on adversity and trauma, there is controversy regarding their definitions (Weathers & Keane, 2007) with not all researchers agreeing with the Diagnostic and Statistical Manual of Mental Disorders' (5th ed.; DSM-5; American Psychiatric Association, 2013) description of trauma. Krupnik (2019) summarises the definition debate, reporting that controversy resides around whether there should be an inclusive definition of trauma, which includes a broad range of experiences that may blur the boundary between trauma and adversity, or a categorical definition which clearly distinguishes the boundary between the two concepts.

This debate is still ongoing, despite previous calls from researchers like McLaughlin (2016) for a more consistent definition, particularly regarding childhood adversity. Notwithstanding the discrepancies in definition, the cumulative impact of adverse childhood experiences (ACEs) has been linked to poor health and psychological outcomes in adulthood (Felitti et al., 1998) making this an important area in which to continue targeted research.

In 2014, research by Bellis et al. concluded that almost half (47%) of children living in the UK had experienced at least one ACE (e.g., parental separation, domestic violence, parental incarceration, abuse). The COVID-19 pandemic may have exacerbated these adverse experiences for CYP. In 2020 the UK Trauma Council's coronavirus pandemic policy briefing highlighted that "the focus should now be on understanding the impact of trauma on children's development and wellbeing and responding appropriately" (p.2). This aligns with a view from Perry et al. (1995) which advocates for caution when considering children's resilience in the face of trauma and that overestimating this can be harmful since childhood is the time when children are most vulnerable.

The positive psychology paradigm can offer a foundation for how to support those who have encountered adversity. Whilst the first wave of positive psychology focuses on strengths and virtues (Seligman & Csikszentmihalyi, 2000), a second wave of positive psychology is now emerging: 'positive psychology 2.0,' (PP2.0) which seeks to bring balance to the positive psychology movement. It is suggested that negative experiences should not be disregarded as they are important to help understand positive experiences and may be beneficial for driving individuals towards positive change (Wong, 2011). This aligns with research which evidences the co-existence of positive and adverse experiences, particularly in childhood, and the importance of taking both into account when assessing need and implementing interventions (Bethell et al., 2019).

The phenomenon of Post Traumatic Growth (PTG; Tedeschi & Calhoun, 2004; Tedeschi & Calhoun, 1996) could be considered to understand the gap between positive and negative experiences that Wong proposes to bridge in PP2.0. PTG describes the "positive psychological changes experienced as a result of the struggle with traumatic or highly challenging life circumstances" (Tedeschi et al., 2018, p.3). With regards to the debate about the definition of trauma and adversity, Tedeschi et al. (2018) define trauma as a "highly stressful and challenging life-altering event" (p.4). They argue that this broader definition is warranted given the concept of growth because it is not the event itself which is important but how it impacts the individual's assumptive world (Tedeschi & Calhoun, 2004). This aligns with the argument that trauma is context-dependent and individual (Krupnik, 2019) which adds to the challenge of creating a

definitive definition of trauma and adversity because it means defining a subjective experience to an objective event.

Following an adverse or traumatic experience, it is the individual's struggle to understand and make sense of their experience which leads to growth (Tedeschi & Calhoun, 2004). This growth is suggested to reflect an increase in areas of psychological functioning that surpasses their level of functioning prior to their experience. This surpassing of baseline functioning is what distinguishes PTG from constructs such as resilience where an individual returns to their baseline level (Tedeschi et al., 2018, p.5). There are several factors which influence the growth process (i.e., characteristics of the event, personal characteristics, cognitive processing of the experience) and individuals may experience growth at different rates (Tedeschi & Calhoun, 2004).

Whilst the philosophy of PTG has benefited from existential views such as finding meaning in suffering (Frankl, 1959), Joseph (2009) highlights that it is important not to suggest that there is something inherently positive about trauma because an individual's experience must not be dismissed. There is, however, a possibility of finding new meaning from their experience.

The Posttraumatic Growth Inventory (PTGI) is a measurement tool to capture PTG in research (Tedeschi & Calhoun, 1996). It is comprised of five factors (relating to others, new possibility, personal strength, spiritual change, and appreciation of life) and validated with young people and adult samples who have experienced trauma.

This model of PTG, however, has been criticised for not being specific enough nor demonstrating the operationalisation of some of its core components (e.g., schema change; Maercker & Zoellner, 2003). Maercker and Zoellner describe a 'Janus-Face' of self-perceived growth suggesting that growth may be comprised of two parts, one which is illusionary (i.e., individuals use strategies such as avoidance or wishful thinking to create a 'positive illusion' of growth), which decreases over time and is then overtaken by one which is constructive (i.e., individuals use more adaptive strategies such as cognitive restructuring to work through their experience). What both Tedeschi and Calhoun's and Maercker and Zoellner's models of PTG have in common and consider being fundamental to growth is the constructive element of cognitive processing following the experience.

Within the discussion of these cognitive processes, Cann et al. (2011) state that not all rumination is negative, and distinguish between deliberate and intrusive rumination (DR/IR). IR is defined to be the "...invasions of one's cognitive world-thoughts about an experience that one does not choose to bring to mind" but DR is voluntary and "...focused purposefully on trying to understand events and their implications" (p.138). This definition of deliberate rumination might

strike psychologists as similar to the broad concept of 'reflection'. Treynor et al. (2003) define reflective rumination as "a purposeful turning inward to engage in cognitive problem solving to alleviate one's depressive symptoms" (Treynor et al., 2003, p. 256). García et al. (2017), however, concluded that whilst both DR and reflection are positively related ($r = .51, p < .001$), they are two distinct constructs with only DR being a significant predictor of PTG.

Research shows that finding meaning, but also experiencing positive affect, can help individuals during times of adversity (Folkman & Moskowitz, 2000). Broaden and Build Theory (BBT; Fredrickson, 2001) suggests that experiencing pleasant emotions can facilitate an individual's psychological wellbeing because positive emotional experiences do not induce a 'specific-action' response like some negative emotions (e.g., when experiencing fear there may be the urge to run). This, therefore, means that the individual is unrestricted in their experience of behaviours in response to the positive emotion (e.g., experiencing joy may motivate one to be more creative or explorative) which can build one's thought-action repertoire alongside their physical and social resources over time. The cumulative effect of positive emotional experiences creates a bank of physical and social resources that an individual can then later use during times of adversity to help them overcome their negative experiences more effectively, also known as the 'undoing hypothesis' (Fredrickson et al., 2000; Fredrickson & Levenson, 1998).

Furthermore, Fredrickson suggests that there is a reciprocal relationship between experiencing positive emotions and finding meaning in situations: as such, those who experience more positive emotions can use this to find meaning in adversity and vice versa (Fredrickson, 2004b). One of the positive emotions that has been researched and linked to BBT is gratitude (McCullough et al., 2001).

Peterson and Seligman (2004) define gratitude as "a sense of thankfulness and joy in response to receiving a gift, whether the gift be a tangible benefit from a specific other or a moment of peaceful bliss evoked by natural beauty" (p. 554). Lambert et al. (2009), however, highlight discrepancies in the definition of gratitude used by researchers, and conceptualise a broad and narrow definition. Indicative of a broad definition, Wood et al. (2010) proposes that "gratitude is part of a wider life orientation towards noticing and appreciating the positive in the world" (p. 891) and describe this orientation towards noticing the positives in life as a dispositional tendency. On the other hand, a narrower definition conceptualises gratitude as something that a beneficiary experiences in response to a moral behaviour, or to an unexpected intentional act, from a benefactor which has resulted in a positive outcome for the beneficiary (Emmons & McCullough, 2003; Froh et al., 2009; M. McCullough et al., 2001).

There is some evidence in the literature to suggest that there is a link between gratitude and PTG such as gratitude being a key predictor of PTG (Mead et al., 2022) and the effectiveness of grateful appraisal in promoting wellbeing when processing difficult memories or previous experiences (Watkins et al., 2008). This suggests that gratitude could help to facilitate the cognitive reappraisal of events and experiences which is identified as being a crucial component to PTG (Maercker & Zoellner, 2003; Tedeschi & Calhoun, 2004).

2.3 Rationale

During the COVID-19 pandemic, practising gratitude was suggested as a means to support psychological wellbeing (Fishman, 2020) and gratitude was found to be the most highly reported positive emotional state in comparison to others, such as hope and relief (Watkins et al., 2021). This advocates for gratitude being a positive emotional state that might be cultivated during times of adversity to support wellbeing. Whilst research indicates there is a relationship between gratitude and PTG (e.g., gratitude enables individuals to find benefits amongst adversity; Wood et al., 2010), the link between gratitude and PTG remains unclear (Zeligman et al., 2021).

Accordingly, the aim of this review is to explore if there is an association between gratitude and PTG in the literature and, if so, to report, where possible, on the nature of this relationship. Understanding the link between gratitude and PTG promotes a more informed approach to the use of gratitude practices (e.g., gratitude diaries) as a means of supporting individuals who have experienced adversity to promote wellbeing and growth.

Research exploring PTG tends to be focused on adolescent and adult populations rather than children because of the principle that individuals need to have established assumptive beliefs about the world (Tedeschi & Calhoun, 2004). Evidence suggests that the theoretical model of PTG as formulated in adults is applicable to adolescents (Meyerson et al., 2011). Whilst it might not be considered theoretically relevant for children, educational psychologists work with young people until they are aged 25, meaning they may work alongside a young person who has experienced adversity or a traumatic event where PTG may be a relevant factor. This review, therefore, is relevant and necessary in the educational psychology context, particularly given recent global events including the COVID-19 pandemic and the conflict in Eastern Europe, of which the impact is still uncertain.

2.4 Method

2.4.1 Search Strategy

In December 2022, a systematic search across four electronic databases including PsycINFO via EBSCO, Education Research Information Centre (ERIC), Web of Science and Medline via EBSCO was completed (see Appendix B for full search strategy). The search aimed to identify articles in line with the following research questions:

Primary Research Question. Is there an established association between gratitude and PTG within the literature?

Secondary Research Question. If there is a relationship suggested by the literature, what does this relationship look like?

The database results were entered into Rayyan Software (Mourad et al., 2016) where duplicate articles were removed.

2.4.2 Inclusion and Exclusion Criteria

The inclusion and exclusion criteria (Table 1) were applied throughout the title and abstract screening and full text eligibility checks. Due to a high volume of literature following the title and abstract screening, only quantitative research articles were included for full text eligibility checks.

Table 1.

Inclusion and Exclusion Criteria

Study Feature	Inclusion Criteria	Exclusion Criteria
Publication	Journal articles Dissertations	Books or chapters
Methodology	Quantitative and mixed method studies Separate quantitative measures of PTG and gratitude	Qualitative studies Articles which explore a phenomenon other than gratitude (e.g., awe)

Result reporting	To report on a statistical relationship between PTG and gratitude variables (either significant, or non-significant)	No explicit reporting of an association between gratitude and PTG (e.g., article exploring gratitude and PTG among other variables and not explicitly reporting a relationship between the two variables)
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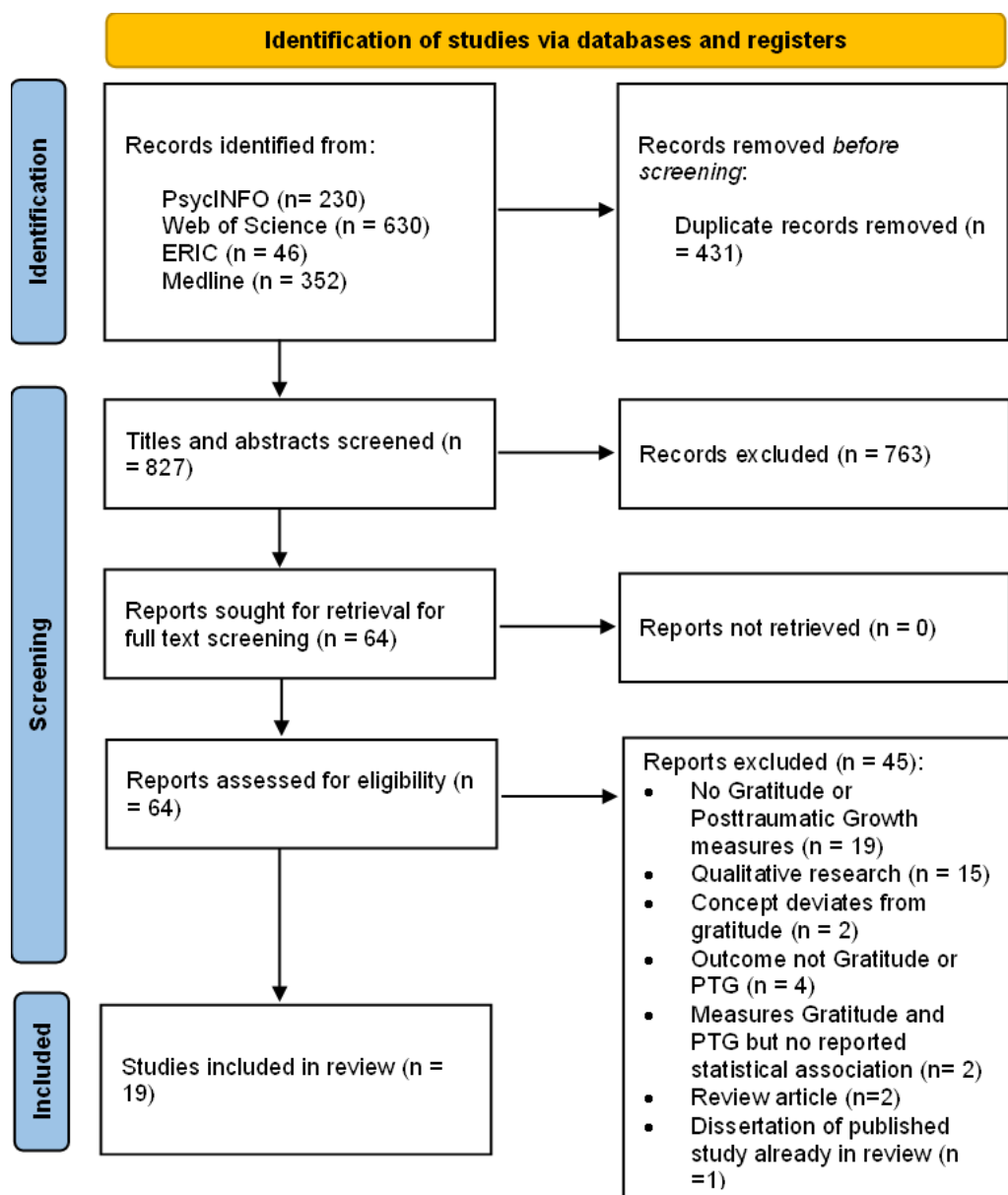
2.5 Results

2.5.1 *Search results*

Nineteen articles were included in the final review, the process of selection is outlined in the PRISMA chart in Figure 1.

Figure 1

PRISMA Chart



2.5.2 Data Extraction

A data extraction table was created to summarise the key characteristics of the studies (see Appendix D). The extracted data included authors, year of publication, participant characteristics, study design, methodology, analysis, and key findings in relation to the research questions. Wang and Wu (2020) reported the lowest sample age ($M = 14.07$) whereas Ruini and Vescovelli (2013)

reported the highest ($M = 56.6$). Eaves (2018), however, reported their oldest participant being 69 years old.

2.5.3 Quality Assessment

A quality assessment of included studies was carried out after data extraction to reduce bias (Greenhaig & Brown, 2017, p.110). All articles were assessed using the Quality of Survey Studies in Psychology (Q-SSP; Protogerou & Hagger, 2020) as they used survey-based methods to gather data. This relatively new tool appeared to have appropriate analytic questions to explore relevant areas including introduction, participants, data, and ethics. An advantage of this tool is that it was created systematically by expert consensus to provide the psychological field with a quality assessment checklist specifically aimed at evaluating research utilising survey-based methods. Protogerou and Hagger (2020) developed the Q-SSP in response to a gap in assessment tool literature for survey studies specifically in psychology. The tool consists of questions which are designed to elicit information regarding the transparency and reporting of methods and findings within the literature. The authors specially focused on these elements to contribute to solutions to resolve the difficulties of replication in psychological research due to lack of transparency. In addition, the authors developed the tool to improve the accuracy and quality of research syntheses and systematic reviews and reduce the need for researchers to use multiple tools to effectively evaluate the quality of survey-based methodological studies in their research.

This Q-SSP was an appropriate and pertinent quality assessment tool for this systematic review due to its focus on survey-based methods. The tool was helpful for providing an overall sense of the quality of the survey-based literature in this area by allowing studies to be as comparable as possible given the topic under review (i.e., the research is attempting to make objective sense of subjective experiences of individuals). Furthermore, the authors suggest that this tool can be applied in a variety of circumstances including research syntheses and when professionals are evaluating the quality of research which could inform practice.

With regards to reporting, over half of the studies did not report their participant inclusion criteria, an adequate level of participant demographics (e.g., age, gender, ethnicity, social economic status; Sifers et., 2002), or a justification for their sample size. Furthermore, most studies did not provide a copy of their outcome measures in full, comment on the context and duration of data collection, identify who collected the data or the study's attrition rate. Finally, over 50% of studies did not report whether participants had been debriefed or declare any conflicts of interest/funding.

Protogerou and Hagger (2019) state that assigning numerical scores and categorising studies is optional for this quality assessment tool, depending on the aims of the researcher. The authors suggest a cut-off point of 75% for a study to be deemed of acceptable quality, with studies with less than 75% being considered of questionable quality, but this system is malleable depending on the aims of the research. Protogerou and Hagger (2019) suggest that it may not be necessary to assign numerical scores for narrative reviews, however, it was decided to assign a numerical score in the interest of rigour for this review.

Given that this is a novel review, assigning a numerical value to the studies was important to provide an overview of the quality of the literature; this score could also enable the identification of reporting areas to be improved on to enhance transparency within the literature moving forwards. An advantage of assigning numerical scores is that the quality of studies is comparable since they are all scored against the same criteria. On the other hand, assigning a numerical value may underestimate the value of the research, particularly as this tool is heavily reliant on transparent and open reporting from researchers. Similarly, given the nature of the topic under review, it is important that the scores assigned to the research studies do not reflect on the experiences of participants. For example, if studies are of low quality, this does not imply that participants' experiences are not valid, only that the reporting quality of the research may not be adequate.

For this review, only three studies reached the suggested 75% cut-off point to be deemed acceptable quality (Lin et al., 2022; Miragall et al., 2021; Zhou & Wu, 2015), indicating poor quality research reporting on this topic (see Appendix C for quality assessment table). Despite this, all 19 articles have been included in the review to give an overview of the literature regarding the association between gratitude and PTG. The quality assessment rating of studies has not impacted how they are reported in the review or the weight the findings have been given; however, where it is thought to be appropriate, quality ratings have been mentioned in the findings write up to give the reader a better sense of the quality of research about the point being made. In future reviews, employing a more rigorous distinction regarding the quality of studies in the findings write up may benefit this topic area by providing a more nuanced understanding of the literature and what is needed to improve research in this area.

Therefore, in the findings write up of this review, the studies are described in a narrative format to provide an overview of the current literature. The lack of good quality research, however, means the review findings should be interpreted with caution because the quality of the research may not be robust enough to draw assertive conclusions.

2.6 Study Findings

2.6.1 Outcome Measures

Several articles report using the original Post Traumatic Growth Inventory (PTGI; Tedeschi & Calhoun, 1996) to measure participant growth. There are, however, a few studies that use an adapted version of the PTGI to make it relevant to their sample population. This includes a version developed by Zhou et al. (2014) which consists of 22 items across three subscales (perceived changes in self, a changed sense of relationship with others, and a changed philosophy of life), the PTGI-Short Form (Cann et al., 2010), the PTGI-Expanded (PTGI-X) which integrates spiritual and existential changes into the original spiritual change subscale (Tedeschi et al., 2017), and the Korean version of the PTGI (Song et al., 2009).

There is criticism of the PTGI in the literature regarding whether it measures real or perceived PTG (Frazier et al., 2009) and the need to consider the current situations of participants as an influence of their PTG scores. For example, Gunty et al. (2011) found that participants' perceived growth more accurately reflected their actual growth when they reported less distress and more life satisfaction following trauma. Therefore, the current circumstances of participants in this type of research need to be considered as an influential factor on their perceptions of growth as being measured in the study at that time.

To measure gratitude, most studies use the Gratitude Questionnaire Six Item Form (GQ-6; McCullough et al., 2002). The GQ-6 is a measure of dispositional gratitude (i.e., the tendency to recognise and notice the good things that happen) and explores an individual's gratitude in terms of its intensity, frequency, density (i.e., how many people/things one is grateful for), and span. Several studies, however, refer to using adapted versions developed by Wei et al. (2011) and Zhou et al. (2014) which modify the questionnaire wording in response to cultural and language differences, and a Korean version (Kwon et al., 2006).

2.6.2 Gratitude as a Correlate to PTG

Findings below have been presented so that those reflecting young people and those reflecting adult samples are reported separately to try and understand more specifically the relationship between gratitude and PTG in these populations. To reflect the age-related cut-off point for educational psychologists working with young people, the studies reported in the young people sections include those who report a mean age for their sample as being 25 or younger, unless otherwise stated.

Young People Population. Gratitude has been found to be positively correlated to PTG in samples of young people who had experienced natural disasters, such as earthquakes (Wang et al., 2018; Zhou & Wu, 2015), adults who had experienced early parental death and were young people when they became bereaved (EPD; participants were asked to reflect on events that happened prior to the age of 18 years old; Greene & McGovern, 2017), and young people who were burn survivors (Su et al., 2020). Similarly, gratitude has been positively correlated with PTG in samples of young people who were trauma survivors whose experiences included, car accidents, sudden loss and bereavement, physical and sexual abuse, abandonment, and witnessing a death (Zeligman et al., 2021). More specifically, Su et al. (2020) found dispositional gratitude to be the highest correlating positive personality trait with PTG ($r = .56, p < .001$) when compared to resilience ($r = .32, p < .01$) and dispositional forgiveness ($r = .40, p < .001$) in their study exploring PTG in burn survivors. Whilst being found to positively correlate with PTG, gratitude has been found to negatively correlate with depression (Green & McGovern, 2017), and Post Traumatic Stress (PTS; Zeligman et al., 2021; Wang et al. 2018), which suggests that gratitude may have a role in mitigating negative outcomes in times of adversity for young people.

Adult Population. Like young people, gratitude has been found to correlate with PTG in adult populations too. This included samples who participated in research at the beginning of the COVID-19 lockdown (Miragall et al., 2021), those who have experienced interpersonal trauma (e.g., physical abuse), impersonal trauma (e.g., accidents), interpersonal related trauma (e.g., death of partner) (Kim & Bae, 2019), those who have been, or who are currently, diagnosed with cancer (Eaves, 2018; Ruini & Vescovelli, 2013; Strack et al., 2010), those in the police force (Harnett et al., 2021; Leppma et al., 2018), and in mothers of young people who have a developmental disability (Manor-Binyamini, 2014).

In addition to gratitude, other variables such as spiritual transcendence, resilience (Eaves, 2018), cognitive re-appraisal, (Strack et al., 2010) and specifically deliberate rumination (DR; Kim & Bae, 2019) have been found to be positively correlated with PTG in adult samples. These findings, particularly regarding cognitive re-appraisal and DR, align with PTG theory which hypothesises that growth happens in the attempts one makes to understand and make sense of their traumatic experiences (Tedeschi & Calhoun, 2004). This aligns with Strack's (2010) finding that following a cancer diagnosis, the priorities of an individual change such that they engage in new activities and take more time for themselves, suggesting that the shattering of their known world propels individuals to reflect and reappraise their experience to forge a new life experience that is more robust to future adversity.

Adding to this, Greene and McGovern (2017) found that of those who could remember their EPD experience, 79% reported an increase in gratitude because of the event. This suggests that individuals can use gratitude (e.g., their new appreciation for life and loved ones) to facilitate their growth journey. This aligns with PP2.0 (Wong, 2011), which positions unpleasant experiences as being important to help us understand pleasant ones.

Summary. Whilst findings suggest that gratitude and PTG are positively correlated, correlation does not mean causation (Aggarwal & Ranganathan, 2016). Most studies cited in this section are cross-sectional in design and this type of study does not lend itself to inferring anything more than the variables being associated. Two studies (Miragall et al., 2021; Zhou & Wu, 2015), however, used a longitudinal design and Zhou and Wu found a significant and positive correlation between gratitude and PTG over time, suggesting a stable association between gratitude and PTG in young people. Miragall et al., however, found that whilst gratitude and PTG were correlated at the beginning of their study, the relationship between the changes in gratitude and PTG scores over time (a five-week lockdown period) were not significantly correlated. This suggests that during the COVID-19 lockdown, gratitude and PTG did not change in the same way, and, therefore, the relationship inferred between them at the beginning should be interpreted with caution. It is important to acknowledge, however, that lockdown was a new experience for the world, and therefore this lack of covariance between gratitude and PTG overtime might be reflective of the uncertainty brought about by individuals trying to understand and navigate a new virus and changed way of life. Both Miragall et al. and Zhou and Wu (2015) were acceptable quality studies suggesting that their findings may be considered more robust than others. Whilst both studies found a positive correlation between gratitude and PTG, their findings over time were mixed, which could be due to the context in which the research was set (e.g., Miragall et al. was conducted during COVID 19).

Overall, gratitude and PTG were found to be correlated across a number of sample populations; this is the first step to understanding the relationship between the two variables. The finding from Miragall et al., however, implies that the relationship between gratitude and PTG in both adult and young people populations cannot be fully understood through simple correlation.

2.6.3 *Gratitude as a Predictor of PTG*

Young People Population. Moving from correlation, longitudinal research has found gratitude to be a predictor of PTG in samples of young people who have been affected by earthquakes (Wang & Wu, 2020; Zhou & Wu, 2016; Zhou & Wu, 2015). Zhou and Wu (2015)

explored bi-directional relationships between gratitude, deliberate rumination (DR) and PTG, and found that gratitude significantly predicted PTG across the study suggesting a stable relationship between gratitude and PTG over time. Similarly, Wang and Wu (2020), and Zhou and Wu (2016), also found gratitude to predict PTG over time.

Conversely, Zeligman et al. (2021) found that hope, rather than gratitude or optimism, significantly predicted PTG when they explored these variables in college students who had experienced a traumatic event. This research used a hierarchical multiple regression (controlling for gender) to assess the influence of the variables on PTG, however, as this research was cross-sectional in design, no accurate predictions can be made and the findings may be misleading (Hanis & Mansori, 2017). Furthermore, Zeligman et al.'s sample differed from Zhou and Wu's in that many of their participants reported to hold Christian beliefs. In addition, Zhou and Wu's sample had experienced a specific type of trauma - earthquakes - whereas in Zeligman et al. participant trauma appeared to reflect a variety of adverse experiences including, natural disasters, abuse, death of a family member. The diversity of experience, alongside participant beliefs, could have impacted the results.

Whilst Zhou and Wu (2015) found that gratitude predicted PTG over time, this relationship did not appear to be bi-directional as PTG did not predict gratitude, suggesting that for young people who have experienced impersonal trauma, gratitude might predict PTG, but not vice versa. This indicates the possibility of gratitude being important to the development of PTG in this context.

As well as the direct links between gratitude and PTG, Zhou and Wu (2015) also found that gratitude indirectly predicted PTG through DR, suggesting that gratitude affects the extent of PTG through an individual's attempts to make sense of their experiences, which, as previously mentioned, is an important component of the PTG model.

Additionally, in their study exploring empathy and prosocial behaviours, Wang and Wu (2020) found that gratitude and its relationship with PTG predicted prosocial behaviours, suggesting that the relationship between gratitude and PTG can transcend the individual and encourages engagement in behaviours that benefit others – a suggestion which aligns with BBT (Fredrickson, 2001).

Adult Population. Gratitude has been found to predict PTG in adult populations too. Eaves (2018) found that, in a sample of cancer survivors, gratitude was the most significant predictor of PTG in comparison to resilience and spiritual transcendence (although resilience was a significant predictor too). Lin et al. (2022) found that both gratitude and resilience were significant predictors of PTG, but that it was resilience which had the most influence. Whilst both

samples could be considered to have experienced a similar type of trauma (i.e., they were both related to illness), the impact of gratitude in relation to PTG was different. Participants in Eaves's research were measured on gratitude relating to adversity that impacted themselves directly, whereas Lin explored it in relation to participants' adversity relating to someone close to them. This may suggest that the focus of the adversity might influence the predictive power of gratitude; whilst gratitude might be important to PTG, it may not always be the most influential factor, depending on the specific nature of the adversity.

These findings, however, must be interpreted with caution as, like Zeligman et al., both Lin et al. and Eaves used cross-sectional study designs and entered PTG as the dependent variable (i.e., the variable being predicted) in their regression analysis. Therefore, their findings may be misleading and not accurately capture predictors of PTG because they have only collected data at one time point.

As in samples of young people, research with adults finds that gratitude can indirectly impact PTG. In their longitudinal study, Miragall et al. (2021) created a structural equation model of the variables in their study and found that gratitude indirectly affected PTG through life satisfaction. They discovered that gratitude was the biggest predictor of life satisfaction and life satisfaction led to a decrease in emotional distress which led to an increase in PTG. This finding demonstrates the complexity in the relationship between gratitude and PTG.

Summary. In summary, evidence suggests that gratitude can predict PTG in certain samples (e.g., those who have survived impersonal traumas such as natural disasters), but in circumstances where gratitude is compared to other variables (e.g., hope, resilience) it may not have as much predictive power (Zeligman et al., 2021; Lin et al., 2022), and does not always directly predict PTG (Miragall et al., 2021). The design of some of the studies in the section, however, means their findings should be interpreted with caution. Most studies cited in this section are longitudinal (Wang & Wu, 2020; Zhou & Wu, 2016; Zhou & Wu, 2015; Miragall et al., 2021), but Zeligman et al. (2021), Lin et al. (2022) and Eaves (2018) are cross-sectional in design. The use of regression analysis within cross-sectional study designs makes the interpretation of findings difficult because the methodology does not lend itself well to the analysis. Hanis and Mansori (2017) state that "longitudinal studies are essential for making assumptions for clinical prediction models" and therefore the studies using cross-sectional designs may be drawing conclusions from analyses that the study methodology does not accurately support. Furthermore, Tedeschi and Calhoun postulate that time is needed following a traumatic event to engage with the process of PTG and these findings may suggest that longitudinal research is more reflective of

the PTG process as participants will have had longer to accommodate to their new life following their experience.

The type of adversity or trauma experienced by an individual may also impact the relationship between gratitude and PTG. If an individual has been directly impacted by an event, gratitude may have a stronger relationship with PTG than when the experience has been indirect or in relation to someone else (e.g., when a relative is in hospital).

Overall, findings appear mixed in both young people and adult populations with regards to gratitude predicting PTG. The research by Zhou and Wu (2015) is an acceptable quality study and finds a stable relationship between gratitude and PTG whereas, Lin et al. (2022) and Miragall et al. (2021) also have acceptable quality research but find that gratitude may not always be the most important contributor to PTG and the relationship between the two variables is not always direct.

2.6.4 Gratitude as a Mediating or Moderating Variable

A moderating variable impacts the strength and direction of a relationship between two variables and is useful for identifying the limitations of a relationship. On the other hand, a mediating variable is part of the causal pathway between two variables and explains how or why two variables are related (e.g., how the independent variable influences an outcome; Gunzler et al., 2013). By including moderating and mediating variables, we can better understand the relationship between two variables and understand how they are linked in the real world (Bhandari, 2022). The following studies place gratitude in the role as either a mediator or moderator in the relationship between PTG and another variable.

Young People Population. In their longitudinal study, Zhou and Wu (2016) found that gratitude partially mediated the relationship between social support and PTG in samples of young people who had experienced a natural disaster, suggesting that experiencing gratitude is part of the process through which social support influences PTG.

In a sample who had experienced the same disaster, Wang et al. (2018) discovered that gratitude partially mediated the relationships between survivors' guilt, post-traumatic stress disorder (PTSD) and PTG. They found that gratitude had a negative effect on the relationship between survivors' guilt and PTSD (i.e., individuals experienced less PTSD) and had a positive effect on the relationship between survivors' guilt and PTG (i.e., individuals experienced greater PTG).

Furthermore, Vieselmeyer et al. (2017) found, in a sample which included young people (M age = 27.26, SD = 12.61) who had experienced a campus shooting in the United States, that

gratitude significantly moderated the effect of post-traumatic stress (PTS) on PTG whereby gratitude strengthened the relationship between PTS and PTG suggesting that participants who reported higher levels of gratitude could use this to transform or process PTS into PTG.

Additionally, they explored the effect of resilience and found that resilience moderated the relationship between trauma exposure and PTS with increased resilience reducing the strength of the relationship between trauma exposure and PTS. The highest rates of PTG were seen in participants who were low in resilience (so this did not buffer against PTS), high in PTS and high in gratitude (Vieselmeyer et al., 2017). This presents gratitude as a protective factor that may help mitigate the effects of a trauma, particularly when an individual is low in other protective mechanisms such as resilience.

Adult Population. Gratitude has also been found to moderate relationships between variables in the adult population. Leppma et al. (2018) found that gratitude significantly moderated the relationship between life stress and PTG in a sample of police officers, with those who reported higher life stress and higher gratitude reporting higher levels of PTG. In addition to gratitude, social support and life satisfaction also significantly moderated this relationship.

Kim and Bae (2019) investigated the role of gratitude in the relationships between IR, DR, and PTG in a sample of adults who had experienced a traumatic event. They discovered that gratitude moderated the mediating role that DR had in the relationship between IR and PTG, and that the impact of DR varied depending on the level of gratitude. Their findings suggest that the effect of DR on PTG can be enhanced and reinforced through gratitude, again presenting gratitude as a potentially important element to strengthen an individual's ability to grow after trauma.

Similarly, Vazquez et al. (2022) explored the relationship between rumination and PTG but in a sample of Christian adults who had experienced trauma. They investigated the mediating roles of Christian gratitude and attachment to God between DR and PTG and used a specific definition and measure of Christian gratitude (The Christian Gratitude Scale, (Knabb et al., 2021). Christian gratitude is defined as:

A psychological and spiritual response of faithful praise, made up of thankful thoughts, feelings, attitudes, and behaviors, to the undeserved blessings of the Triune God, acknowledging him as the benevolent, gracious source of all of life's experiences, whether perceived as positive or negative. (Knabb et al., 2021, p. 3)

They discovered that neither gratitude nor avoidant attachment mediated the relationship between DR and PTG, but anxious attachment did. The researchers rationalise this in the context of research which suggests that individuals in distress are likely to seek proximity to an attachment figure (Dewitte et al., 2008). Vazquez et al. also ran post hoc analyses to explore the mediating roles of Christian gratitude and attachment style between intrusive rumination (IR) and PTG. Some findings were unclear, for example they ran two post hoc analyses and found Christian gratitude to mediate the relationship between IR and PTG in one but not the other. In the analysis which found gratitude to mediate the relationship the indirect effect of IR on PTG through Christian gratitude was negative and significant suggesting that when experiencing IR, Christian gratitude led to lower expressions of PTG. They also found that an anxious attachment style mediated the relationship between IR and PTG, whereas an avoidant attachment style did not.

Vazquez et al.'s findings regarding the relationship between DR and PTG contradict those from Kim and Bae. Both studies had a sample who had experienced a variety of adverse events, which makes it difficult to identify whether the type of trauma could have influenced the findings. However, both studies used a distinct measure of gratitude (specific gratitude towards a God and general grateful disposition), and it could be this variance in the measure of gratitude that accounts for the different findings. In support of this hypothesis, Lee and Kim (2021) discovered that gratitude mediated the relationship between religiosity and PTG (those reporting higher levels of gratitude also reported higher levels of PTG) in a sample of Christian adults when measuring gratitude via the Korean translation of the GQ6. This suggests that it is important to identify specific types of gratitude (i.e., gratitude towards a deity) as this could impact the findings. In addition, the populations of the studies may have affected the findings too, as both Lee and Kim and Vazquez et al. used samples with religious beliefs.

Summary. Overall, there is evidence to suggest that gratitude can act as a mediating or moderating variable in both adult and young people populations. Gratitude impacts the relationship between a variety of variables and PTG, either through being part of the causal pathway or by strengthening a variable's impact on PTG. The findings from Vazquez, however, demonstrate the importance of clarity in defining the variable of gratitude because their specific measure exploring gratitude towards a deity, had different findings to studies who have used dispositional measures of gratitude.

In addition, most studies within this section (except Zhou & Wu, 2016) are cross-sectional in design and therefore only measured participant gratitude and its relationship with PTG at a single point in time. Similarly, all studies in this segment are of questionable quality meaning that their findings should be considered with caution. This suggests that there is a lack of

good quality research which can adequately support the findings of gratitude as a third variable in relation to PTG and other variables. Furthermore, Kim and Bae, and Vasquez et al. acknowledge that they do not distinguish between different types of traumas in their studies and do not account for the time that has passed since the traumatic event and their research taking place. This validates the earlier stated need to interpret findings with caution as there may be a variety of traumatic experiences that have been captured in these findings, and potential factors, such as intensity and frequency of experience, which have not been measured, may have confounded findings.

2.7 Discussion

2.7.1 Summary of Findings

The aim of this review was to explore if there is an established link between gratitude and PTG in the academic literature and, if so, what the research tells us about this relationship, with a view to better understanding how gratitude can support people to grow following adversity and trauma. This information would help to illuminate the mechanisms through which targeted gratitude interventions might work to elicit PTG and in what circumstances we can best utilise and implement this type of intervention to support individuals following trauma and adversity. Bringing together the findings across the 19 studies included in this review, it was possible to explore how gratitude was correlated to PTG, the circumstances under which gratitude predicted PTG and how gratitude has acted as a mediating and moderating variable in the pathway between PTG and other variables, including social support (Zhou & Wu, 2016), DR (Kim & Bae, 2019; Vasquez et al., 2022), PTS (Vieselmeier et al., 2017), life-stress (Leppma et al., 2018), and survivors' guilt (Wang et al., 2018). The studies took place in a variety of countries across both adult and young people populations who had experienced a variety of adversity, and used a similar methodology (i.e., surveys). Whilst most studies in this review are of questionable quality, acceptable quality studies indicate that there is an association between gratitude and PTG to some extent. Therefore, whilst it is not possible to draw firm conclusions as to what this relationship looks like, gratitude and PTG have an established link in the literature.

2.7.2 How do the findings fit with current research?

Zhou and Wu (2016) found that gratitude partially mediated the relationship between PTG and social support. Placing gratitude in the causal pathway between social support and PTG aligns with BBT (Fredrickson, 2001) as it suggests that gratitude may be facilitating an individual to recognise the benevolent acts of another and how they have benefitted, which then broadens

their social resources. Furthermore, Wang and Wu (2020) found that gratitude, social support and PTG can work together through a chain mediating effect to encourage prosocial behaviours. So, whilst gratitude can work to help individuals recognise and value the support they receive from others, it can also work alongside other variables, including PTG, to encourage the individual to pass on the benevolent behaviours which they have been the beneficiary to. This aligns with the notion of upward reciprocity (Nowak & Roch, 2007) and the theory of gratitude as a moral reinforcer (McCullough et al., 2001) and suggests that gratitude may play an important role in propelling the upward spiral which can ensue following the experience of pleasant emotions (Fredrickson, 2001).

Given the role that social support plays in the PTG process, it is important to acknowledge the confounding impact of this in studies that have not controlled for it. Green and McGovern (2017) highlight one of the limiting factors of their study being their self-selected recruitment method which took place through several bereavement organisations. This indicates that participants were experiencing a level of social support which was not controlled for in their study. All samples in this review had experienced adversity and it was not always clear to what extent people were accessing social support in the research, and to what extent this was controlled for. If participants were receiving social support, it would be difficult to understand whether any reported increases in PTG were aligned with gratitude alone, or whether this was confounded by social support.

Gratitude was also found to moderate the relationship between rumination, particularly DR (Kim & Bae, 2019), and PTG showing it could be a key influencer in the process of cognitive restructuring following growth. These findings suggest that gratitude can strengthen the relationship between DR and PTG and implicate gratitude as being an experience that can be harnessed as part of a thinking style to help individuals to make sense of their experiences and change their perspective. This is further supported by Strack et al. (2010), who found that following a cancer diagnosis people changed their life priorities. Strack et al. align this with the theory of action growth (Hobfoll et al., 2007) which suggests that real PTG is only achieved when individuals put cognitions into action.

When exploring a more specific concept of gratitude, however, (e.g., Christian Gratitude) in relation to DR and PTG, there are not the same results (Vazquez et al., 2022). This suggests that gratitude towards a deity may not have the same impact as dispositional gratitude on PTG and therefore the definition of gratitude being used in research is important to identify. The restricted measurement of gratitude towards one person may have meant that participants' wider experiences of gratitude were not captured. There does appear, however, to be a spiritual

element in the association between PTG and gratitude (Vazquez et al., 2022; Lee & Kim, 2021; Zeligman et al., 2021) and further exploration of how these relationships work would be beneficial to understand better how to support religious communities following adversity. By cultivating gratitude, in some circumstances, individuals may then be able to move beyond traumatic events and experience personal growth (Lee & Kim, 2021).

The findings from Vasquez et al. regarding IR and PTG are interesting and are claimed to warrant future research (Vasquez et al., 2022, p. 768). They speculate that exploring IR may provide a better understanding of the outcomes on PTG when exploring Christian gratitude and attachment to God. Their findings suggest that IR may restrict the experience of Christian gratitude and therefore result in a lower PTG outcomes (as demonstrated by the negative significant effect of IR on PTG through Christian gratitude) and trigger insecure attachment styles (particularly anxious attachment) which they found to increase an individual's development of PTG.

Gratitude does not appear to prevent the negative effects of trauma but may provide a means through which those experiencing adversity can overcome their difficulties and grow. This is supported by findings which present gratitude as being a moderator between PTS and PTG (Vieselmeyer et al., 2017) and a partial mediator between survivor guilt and PTG (Wang et al., 2018). Both studies place gratitude as an emotional state that supported individuals to cultivate more PTG which implies gratitude can be an adaptive protective mechanism.

2.7.3 Strengths and Limitations of Included Studies

This review brings together a number of studies across a variety of countries to explore the relationship between gratitude and PTG. This cross-cultural exploration is helpful to demonstrate that gratitude and PTG are being considered in a variety of cultures.

There are, however, a few limitations to these studies that need to be considered for a full picture of the research. There are several studies which acknowledge their lack of control for adverse experiences that happened outside of those being measured in the research (Lee & Kim, 2021; Wang & Wu, 2020; Zhou & Wu, 2015) which makes it difficult to ascertain the effect of gratitude on PTG when the events that people are processing may not yet be sufficiently distant in the past. This is important to acknowledge because the Janus-Face model of gratitude proposes that there is an illusory side of growth after trauma which decreases as time goes on (Maercker & Zoellner, 2003). This implies that self-reported PTG that is elicited close to the time of trauma may be an illusory coping mechanism, rather than an actual reflection of an individual's growth.

All the studies used self-report measures and were therefore reliant on participants accurately recalling and introspectively reflecting on their experiences. This poses several challenges, including social desirability bias where participants might be reporting what they think they should be experiencing or what researchers may expect them to report, and accurate retrospective reporting. This is particularly relevant for studies like Green and McGovern (2017) who asked participants to reflect on events that happened prior to the age of 18. This challenge of measuring baseline functioning (i.e., the level of functioning before the event) aligns with the critique that the PTGI more accurately measures perceived PTG rather than actual growth (Frazier et al., 2009).

In addition, the unique samples of the research make it challenging to generalise the findings to a wider audience as their experiences (i.e., earthquakes, campus shootings) are highly specific. Zeligman et al. (2021) questioned the appropriateness of the outcome measures used in their study to accurately capture how their sample expressed certain emotional states such as gratitude and optimism. They found that hope was the biggest predictor of PTG in comparison to gratitude and optimism, and hypothesised that this was because the measures did not reflect differences in expression of these states amongst different generations of people (i.e., the generation of people on which the measures were validated may express gratitude and optimism differently to those who participated in the study). Whilst the measures have been validated within the general population, it is wondered to what extent they have been validated on samples who have experienced adverse and traumatic events. This potentially calls into question the accuracy of the measures in samples with these experiences.

Adding to this, four studies included an item level analysis of PTG scores as well as an overall PTG score; this is arguably a strength because it is more likely to capture PTG than only calculating an overall score since some participants may have grown significantly in some areas, but not others (Tedeschi et al., 2018). Despite this, if researchers were not able to accurately capture a participant's baseline functioning, the growth detected (even on an individual item scale) may not accurately reflect PTG as it would not be possible to calculate whether this growth surpassed participants' baseline functioning, which is an important element of PTG (Tedeschi & Calhoun, 2004).

In addition, most research was cross-sectional in design which makes the data descriptive and means that it is limited in what it can tell us about the relationship between gratitude and PTG. Tedeschi and Calhoun hypothesise that PTG takes time; the scarcity of longitudinal data in this review reflects the difficulty with assessing whether participants were reporting real or perceived PTG. Maercker and Zoellner (2003) argue that the illusionary side of growth is most prominent post-trauma and it is over time that this illusion decreases and constructive strategies

evolve to promote actual PTG. With no specific timeline of PTG and the lack of control for other adverse events in the research it is therefore difficult to ascertain whether the findings reflect gratitude's relationship to perceived or actual PTG.

Finally, most of the studies included in this review were of questionable quality. Given that the quality assessment tool considers issues with transparency and reporting specifically, this suggests that there is a lack of transparency from researchers in reporting their survey-based studies. More generally, the lack of acceptable quality research could be attributable to the definitional discrepancies outlined in section 2.1. Given that there is not yet a consensus on how best to define adversity and trauma, it is perhaps difficult to measure these experiences objectively and with accuracy. Similarly, the subjectivity of peoples' experience could impact research results to such an extent that it becomes difficult to summarise the findings as there may not be a consistent narrative. This could impact the reporting of research and therefore result in the questionable quality studies as found in this review.

2.7.4 Strengths and Limitations of Review and Future Research

The current review is novel in the academic literature of PTG and gratitude as no previous systematic literature reviews have been cited as exploring this topic. A further strength of this review is that all included studies were quality assessed and, whilst this was not used as a criterion for excluding studies, it evidences a level of transparency to ensure that this review does not overstate its findings.

Whilst having acknowledged the limitations of the included studies, there are also some limitations of this review. Firstly, due to time constraints, this review does not include grey literature (e.g., unpublished theses). When considering biases, therefore, this review could be perpetuating publication bias by having only reported on literature found via academic databases that report finding an association between gratitude and PTG. Having said this, one study (Harnett et al., 2021), did not include gratitude in their final model when exploring the effects of PTSD on psychological distress, positivity and well-being in a sample of police officers despite reporting gratitude being correlated with PTG (the reason for this is not explained in the study).

Secondly, this review mainly included studies which elicited quantitative data via a survey design. The lack of qualitative data resulted from the volume of literature found in the initial search process and the time constraint of completing the review.

Thirdly, there is the possibility that different search terms from those used in this review might have yielded different results. For example, when exploring the included studies, one referred to 'adversarial growth', a term not included in the systematic search for this review. The

search terms used in this review, however, were developed from the initial scoping searches and the fact that the term adversarial growth appeared in one of the articles found using these terms, suggests that the terms captured a good range of research.

Finally, all but three studies were of questionable quality which means that this review is restricted in the conclusions that can be made regarding the association between gratitude and PTG. Conclusions made by researchers other than Miragall et al., Lin et al., and Zhou and Wu (2015) should be interpreted with caution because of challenges in the quality of their research reporting. This review is considered to be a representative sample of the quantitative literature available at the time the search was conducted, however, it is acknowledged that research is consistently evolving, and these findings may now not be the most recent.

2.7.5 Future Research

When exploring the relationship between gratitude and PTG in the future, it will be beneficial to include qualitative literature as some of the included studies used some open-ended questions in their survey methodology to elicit deeper responses from participants. This gave a glimpse into how participants perceived gratitude to have impacted their growth and life priorities (Greene & McGovern, 2017; Strack et al., 2010) which add value to understanding the relationship between gratitude and PTG.

Furthermore, future research may benefit from using experimental, longitudinal designs to continue to build the picture of how gratitude and PTG are related which has been started in this amalgamation of the evidence. The use of experimental designs over time which implement some form of gratitude intervention will enable researchers to further understand the relationship between gratitude and PTG by manipulating variables (e.g., the type of intervention and outcome measures used) and rigorously evaluating under which conditions gratitude can best facilitated PTG. Particularly focusing on young people, where appropriate, will contribute to the increasing literature focusing on their experiences of PTG and how gratitude can support them in the future.

Finally,, researchers conducting future systematic literature reviews should continue to include quality assessments of their included studies to ensure that the quality of research is being reported on consistently in the literature. This will enable a more accurate picture of the literature on this topic to be formulated and, as such, inform future studies of how to improve the quality of the literature base.

2.7.6 Implications for Educational Psychology Practice

This review has tentatively shed light on the association between gratitude and PTG. When working at a systemic level with schools it will be important to gain a sense of their understanding

of trauma and adversity and the impact this can have on young people. This is particularly pertinent now because of the implications from the COVID-19 pandemic, where many families have experienced loss, and the current global context of conflict and refugees seeking shelter in the United Kingdom and joining school communities. Teaching, and building awareness of trauma and adversity, can encourage conversations about growth and appropriate interventions that can be put into place to support young people and their families.

Gratitude is a mutable trait (Green and McGovern, 2017) and therefore working with educational professionals to develop their understanding of how to sensitively use gratitude during times of adversity could help them to know how to harness positive emotional states to support their young people effectively. This aligns with the national trauma informed practices that have been implemented (e.g., the Alex Timpson project), but it is important not to insinuate that there is something positive about trauma (Joseph, 2009), only that people can use the processing of their struggle to grow.

Furthermore, at an individual level, this research indicates that gratitude may be a protective mechanism which can be used to promote PTG, particularly in young people who may be low in resilience (Wang et al., 2018). This indicates that gratitude interventions may be better targeted to individuals who have not yet developed their resilience skills to a level which can buffer against the negative outcomes of adversity.

Adding to this, recognising how gratitude works alongside other positive emotional experiences such as social support, can enable educators to provide opportunities for young people to access this type of support to facilitate PTG. This may include liaising with other agencies and support groups or perhaps setting up a circle of trusted peers. Understanding the trauma and adversity the young person has experienced, however, is essential because their comfortableness to engage in certain support mechanisms may vary depending on the type of trauma they have experienced (Jang & Kim, 2017; this article was translated and interpreted from its original language (Korean) using ChatGPT (OpenAI, 2023) with the instruction 'Translate [inserted text] into English' and also Google Translate). Therefore, a closely monitored approach including the young person and their family is needed to ensure that the young person is being supported in a way which aligns with what they would value at that current time.

Furthermore, the research relating to DR suggests that educators can guide young people to process their experiences and explain the impact this can have on transforming their perception of the experience and start their journey to adjusting to new beliefs. DR is consistently found to be an important process following trauma. The findings of the relationship between DR,

PTG and gratitude is reported on in acceptable quality research (e.g., Zhou & Wu, 2015) which adds weight to similar findings in poorer quality research. It is speculated that the event specific nature of DR is what makes it a distinct concept from that of the stable tendency for reflection (Cann et al., 2011). This is an important distinction to make to ensure that individuals are engaging in DR (e.g., seeking meaning and understanding from the event) and not just reflecting on it. Whilst this type of direct work might be out of the remit of an educational psychologist to deliver, knowledge of interventions such as manualised Cognitive Behavioural Therapy programmes (e.g., Thinking good, feeling better by Paul Stallard), exploring support from other agencies such as Child and Adolescent Mental Health Service (CAMHS) and Mental Health Support Teams (MHSTs), might help facilitate a discussion about DR with young people and those involved in supporting them post-trauma.

2.7.7 Conclusion

In conclusion, gratitude has received relatively little attention in the post trauma research (Vieselmeyer et al., 2017) and therefore this review has attempted to bring together evidence to understand how gratitude and PTG might be associated. Despite the unique sample populations and the heterogeneity of some study characteristics (e.g., the variety of outcome measures involved) there appears to be a consistent thread of gratitude being associated with PTG and as an emotional state which can be used to help those who have experienced adversity to begin a journey towards PTG.

The acceptable quality research in this review indicates that gratitude and PTG are correlated (e.g., Zhou & Wu, 2015; Miragall et al., 2020) and gratitude is a predictor of PTG (Lin et al., 2022; Zhou & Wu, 2015). Similarly, it also implicates gratitude and PTG's relationship with DR (Zhou & Wu, 2015). This suggests that the evidence regarding gratitude as a third variable (i.e., a mediator or moderator variable) is more tentative as all the studies that explored this depth of association between gratitude and PTG was of questionable quality.

Whilst their research was considered of questionable quality, Leppma et al. (2018) suggest that gratitude can still facilitate PTG even after stress habituation. Whilst their study included police officers who have had prolonged and repeated exposure to trauma, this could imply that for CYP who have experienced repeated trauma exposure, gratitude is also something that could be drawn upon to help them flourish. This is a tentative link, however given the finding that the association between gratitude and PTG in young people is not bi-directional (i.e., gratitude predicts PTG, but PTG does not predict gratitude; Zhou & Wu, 2015) this could suggest that by harnessing gratitude CYP can use it to facilitate their journey of growth.

As mentioned, however, the relationship between gratitude and PTG, is tentative (given the previously detailed limitations) and therefore robust future research using more explorative and experimental designs with samples of young people are needed to get a more detailed account of how gratitude and PTG link together to further distinguish the most conducive environments for young people to grow following adversity.

Chapter 3 – An Exploration into the Impact of Different Types of Gratitude Diary on Children’s Gratitude and Wellbeing.

3.1 Abstract

Gratitude diaries are a positive psychology intervention used with children and young people (CYP); the evidence regarding their effectiveness, however, is mixed. This study explores whether diaries presented in a positively reinforcing (i.e., writing to feel good) or negatively reinforcing (i.e., writing to avoid feeling bad) style, have an impact on children’s gratitude and wellbeing scores in comparison to a control group. Children from three different year groups in a UK primary school were randomised at a class level to one of three groups (intrinsic motivation, moral obligation, event diary) and filled out a daily diary at school for three weeks. Children completed four self-report measures which explored gratitude, positive affect, and sense of school belonging, across three time points (pre and post intervention and at a three week follow up). No significant effect of diary condition was found on gratitude or wellbeing scores across the whole study. There was mixed evidence regarding changes in participant gratitude scores, with one gratitude measure indicating a significant effect of time, such that gratitude scores increased over time in all three conditions. The findings are discussed considering the strengths and weaknesses of the research, and it is suggested that gratitude diaries may be more beneficial as a targeted intervention, rather than a universal one.

3.2 Introduction

The positive psychology paradigm highlights the benefits of focusing on one’s strengths and virtues, rather than their pathology (Seligman & Csikszentmihalyi, 2000). In 2004, Peterson and Seligman identified gratitude as one of the 24 character strengths in their cross-cultural research of character strengths and virtues.

Peterson and Seligman (2004) define gratitude as “a sense of thankfulness and joy in response to receiving a gift, whether the gift be a tangible benefit from a specific other or a moment of peaceful bliss evoked by natural beauty” (p. 554). Lambert et al. (2009) draws attention to the discrepancies in the definitions of gratitude used by researchers and conceptualises a broad and narrow definition. Wood et al. (2010) proposes that “gratitude is part of a wider life orientation towards noticing and appreciating the positive in the world” (p. 891) and describe this orientation towards noticing the positives in life as a dispositional tendency, this could be considered indicative of a broad definition of gratitude. On the other hand, using a

narrower definition, gratitude has been identified as something that a beneficiary experiences in response to a moral behaviour, or to an unexpected intentional act, from a benefactor which has resulted in a positive outcome for the beneficiary (McCullough et al., 2001; Emmons & McCullough, 2003; Froh et al., 2009).

Navarro and Tudge (2020) argue that gratitude can be defined as a moral virtue when one seeks to repay a benefactor without seeking to gain something in return. McCullough et al. (2001) further suggest that gratitude is a moral motivator, whereby the benefactor may be more likely to continue their positive intentional acts when they recognise the impact they have had on others. This suggests that the positive outcomes of gratitude may go beyond the individual and benefit society.

Fredrickson (2004a) provides a rationale through Broaden and Build Theory (BBT; Fredrickson, 2001) for how gratitude benefits society by transcending the individual. BBT postulates that the experience of pleasant emotions (e.g., gratitude) enables one to broaden their perceptions, and their thought-action repertoire, meaning one can seek more creative solutions and ideas to build both their physical and social resources, when necessary. This makes the experience of pleasant emotions an adaptive process which benefits not only the individual, but society as well, because the individual's actions may go on to benefit others.

Froh et al. (2009) state that "of the positive psychology interventions targeting well-being enhancement, gratitude interventions demonstrate the largest effects" (p. 408). One such intervention is the use of gratitude diaries. Daily gratitude practice has been found to have a significant effect on an individual's positive affect and prosocial motivation (Emmons & McCullough, 2003) as well as school satisfaction (Froh et al., 2008). Despite these positive findings, a recent meta-analysis by Dickens (2017) advocates caution when evaluating the effectiveness of such gratitude interventions because of methodological challenges in the research. For example, some studies, such as Emmons and McCullough (2003), included a 'hassles diary' as one of the experimental groups. This potentially dilutes the significant impact of gratitude in the study's findings because it is not clear whether it was the power of gratitude or negative affect (induced by the negative bias focus of the condition) that influenced scores.

Furthermore, Dickens (2017) found that participant age had an impact on the effectiveness of interventions, with adults yielding greater benefits than children. From this, they hypothesise that the interventions might have been too advanced for the young participants, however there were only three studies that included CYP. Conversely, Froh et al. (2009) suggest gratitude develops between the ages of seven and ten, when children start to become less ego-centric and

more empathic towards others. Additionally, there have been several more recent studies evaluating the impact of gratitude diaries on children specifically, which found that gratitude diaries seemed to increase children's gratitude and sense of school belonging (Diebel, 2014), and reduce anxiety (Cripps, 2019).

Despite these positive findings with younger participants, the evidence is still not consistent, with some studies finding no impact of gratitude diaries in this population (Shuttleworth, 2018). A possible explanation for lack of findings is gratitude fatigue (Emmons, 2013) which happens when one becomes so accustomed to daily gratitude practice, that it no longer has a beneficial impact. Another possibility concerning the inconsistency in findings might be that the way in which a gratitude diary is presented to children might influence the way they experience and engage with it, with a positive presentation leading to children experiencing the diary as an enjoyable activity they choose willingly to participate in, and a more neutral presentation leading to children experiencing the diary as a chore which they feel obliged to engage with.

What drives children's motivation to engage in a gratitude diary, then, may be an important factor to consider. Psychological theories of motivation such as Self Determination Theory (Deci & Ryan, 2000) hypothesise that individuals engage with activities either because they value them or because of social coercion. The concept of motivation could be applied to understand the success of gratitude diary interventions. Some children may engage in gratitude diaries because they find them an enjoyable and valuable activity (i.e., intrinsically motivating), whereas others may engage to fulfil a societal expectation that expressing gratitude is virtuous and therefore something they ought to do (i.e., extrinsic motivation).

Gordon et al. (2004) highlight that a challenge in gratitude research is capturing whether children are expressing 'felt gratitude' (p. 543) or conforming to politeness norms. Similarly, given the social desirability to express positive emotional experiences such as gratitude, Hussong et al. (2019) suggest that future measures of gratitude should move beyond assessing one's perception of their gratitude. It could be argued, therefore, that understanding children's motivation to engage in gratitude diaries could help researchers to understand how to ensure the intervention has the most beneficial impact. Layous et al. (2014) suggest that individuals who find an activity enjoyable are more likely to have prolonged engagement in the activity due to finding it intrinsically motivating (Deci & Ryan, 2000). In addition, activities completed out of obligation can hinder intrinsic motivation (Ryan & Deci, 2000).

Shuttleworth (2018) took a neutral approach to presenting gratitude diaries to children (e.g., children were asked to “please write about somebody you are thankful to in school today” or “please write about something you are thankful for in school today”) which found no significant effect of gratitude diaries for participants; however, Cripps (2019) modified their gratitude diary to intentionally create a more positive conceptualisation of gratitude: this found significant results, such that the diary had a positive effect on children’s gratitude. The language used in Cripps’ gratitude diary had a positive rhetoric, with wording such as “treasure chest”, “jewels” and “precious” used as metaphors for grateful thoughts and their personal value. They also used coloured visuals which may have helped capture children’s interest and promote engagement.

Given that Cripps (2019) had significant findings when gratitude diaries were presented as an enjoyable and positive activity, a distinction could perhaps be made in how children conceptualise gratitude diaries between those which are intrinsically motivating and those that are extrinsically motivating. Intrinsic motivation is defined as: “an incentive to engage in a specific activity that derives from pleasure in the activity itself...rather than because of any external benefits that might be obtained...” (American psychological association, 2023) and extrinsic motivation as “an external incentive to engage in a specific activity, especially motivation arising from the expectation of punishment or reward...” (American psychological association, 2023).

We might conceptualise an intrinsically motivating diary experience, then, as one in which children write in their diaries because they find it a pleasant thing to do. Contrastingly, we might conceptualise an extrinsically motivating diary experience as one in which children write in their diaries to meet an external motivation or reward (e.g., meeting the social expectation that one has a moral obligation to express gratitude because it is the right thing to do and it is important not to be seen as ‘ungrateful’). Understanding which of these conditions has the most impact on children can inform how to best present gratitude diaries to children to promote optimal impact.

3.2.1 The current study

This study seeks to explore further this issue, with the research question “does the way in which a gratitude diary is presented have an impact on children’s gratitude and subjective wellbeing?”. To address this question, two styles of gratitude diary are used. The first, an extrinsically motivating ‘moral obligation diary’ presents the task of recording things the child is thankful for in a neutral manner reflecting many previous gratitude diary studies (e.g., Shuttleworth, 2018; Emmons & McCullough, 2003), with amended wording to try and represent the societal expectation and moral obligation of gratitude (e.g., being grateful can help us to

become better people) . The second, an ‘intrinsic motivation diary’, draws upon thesis research by Cripps (2019) who tentatively offers some insight into the positive impact of gratitude diaries when they are seen as a pleasure. See Appendix E for diary templates.

3.2.2 Hypotheses

Two sets of hypotheses have been formulated to answer the above research question, one based specifically on gratitude, the other on subjective wellbeing. In this research, the wellbeing variable has been constructed using measures of positive affect and school belonging. This is based on research by Diener (2000) which proposed that subjective wellbeing can be represented as the accumulation of an individual’s cognitive (life satisfaction) and affective evaluations of their life. For this study, life satisfaction is intended to reflect the participants’ sense of school belonging because research suggests that gratitude influences school satisfaction (Froh et al., 2008). Life satisfaction and positive affect have been found to be robustly correlated to children’s gratitude (Obeldobel & Kerns, 2021).

Hypothesis 1. Children in the intrinsic motivation group will make more gains on gratitude measures than those in the extrinsically motivating, moral obligation and control group.

Hypothesis 2. Children in the intrinsic motivation group will make more gains on wellbeing measures than those in the extrinsically motivating, moral obligation and control group.

3.3 Method

3.3.1 Ethics

This study received ethical approval in May 2022 from the University of Southampton’s Ethics and Research Governance Online (ERGO II), number 70859.

3.3.2 Design

A randomised control experimental design was used to measure the impact of a three-week diary intervention on participants’ gratitude, Positive Affect (PA) and Sense of School Belonging (SoSB). To measure this impact, participants were asked to complete four self-report questionnaire measures across three time points.

Participants were randomly assigned at a class level to one of three conditions. These included a control group, where children were asked to complete an event diary and write factually about three events that had happened during their school day, and two experimental

conditions, as described in 3.2.1, where children were asked to write about three things from their school day which they were thankful for.

It should be noted that the data collection for this study preceded data collection for a second, qualitative study conducted by a different researcher, which explored the thoughts of a small number of children about their experience of completing their gratitude diaries.

3.3.3 Participants

Prior to the study a G Power analysis (Version 3.1; Faul et al., 2007) estimated the need for 63 participants for the study to detect a difference between three groups at post-intervention with a power of 0.8 and a probability level of 0.05, if there was a large effect size of Cohen's $f = 0.40$. This was based on a repeated measures ANOVA with a within-between interaction for three groups across two time points incorporating an effect size $\eta^2 = .14$ (Diebel, 2014). The estimated number of participants rose to 78 when detecting for a difference at follow up.

Two hundred and sixty seven children from 11 classes across Years 3, 4, and 5 in one primary school in the South-East of England were invited to take part in the study. 181 children took part due to 1 parent opting their child out, and a further 85 children opting out across the study. A further 29 participants were removed from the final analysis due to reasons listed in section 3.4.4. Therefore, the data of 152 participants (84 females, 67 males, 1 other) who completed the intervention and outcome measures pre intervention (T1) and post intervention (T2) (M age = 8.83, $SD = .907$), were analysed. This sample reduced to 115 participants at a three week follow up (T3) due to some participants having their follow up data removed following participation in the aforementioned qualitative study ($n = 8$) and high levels of school absence caused by the extreme temperatures in July 2022 ($n = 29$). The extreme heat resulted in the school providing children with optional attendance for the two days on which the follow up visits were scheduled.

3.3.4 Consent

Parents/carers of participants were sent an opt-out consent form along with information about the study (see appendix F) the day before T1. The participating children themselves could also withdraw from the study at any stage and were given an opt-out form to indicate this (see appendix F). If participants withdrew during the study, their data (i.e., questionnaires or diaries) were destroyed.

3.3.5 Measures

Participants were asked to complete four outcome measures (self-report questionnaires) at three time points. Two questionnaires measured gratitude, one measured PA (i.e., pleasant emotions) and one explored SoSB (see appendix G for full measures). At each time point, participants were asked to provide their age and gender.

Gratitude. The Questionnaire of Appreciation in Youth (QUAY; Smith, 2020) was used to measure gratitude. This is a new measure designed specifically for children and has subscales which explore gratitude, appreciation, and sense of privilege. Participants chose from five responses ('never', 'not very often', 'sometimes', 'very often' and 'always') to identify how often each statement was true for them. Participants were each given an overall scaled score for the QUAY using the steps outlined by Smith (2020) alongside a scaled score for each subscale (gratitude, appreciation, and sense of privilege).

In the current study, the items on the gratitude subscale had questionable reliability at T1 ($\alpha = .6$) and satisfactory reliability at T2 ($\alpha = .73$) and T3 ($\alpha = .71$). The appreciation subscale had questionable reliability across T1 ($\alpha = .39$), T2 ($\alpha = .56$), and T3 ($\alpha = .62$), as did the sense of privilege subscale (T1: $\alpha = .50$; T2: $\alpha = .40$; T3: $\alpha = .44$). The overall QUAY scale had satisfactory reliability at T1 ($\alpha = .72$), T2 ($\alpha = .80$), and T3 ($\alpha = .79$), so only this score is reported.

Due to the novelty of the QUAY, the well-established Gratitude Questionnaire-Six (GQ-6; McCullough et al., 2002) was also used to measure gratitude. This is a six-item, self-report measure of gratitude and participants identify their answers on a 7-point rating scale (1 = strongly disagree, 7 = strongly agree). Like previous theses (Diebel, 2014 and Shuttleworth, 2018), an adapted version of the measure was used which added the word 'school' to each question and reworded item 6 to make it more accessible for children. Participants were provided with a GQ-6 score (between 6-42) by adding together their responses, with the necessary items (3 and 6) reverse scored. For the current study the items on the GQ6 had satisfactory reliability across T1 ($\alpha = .74$), T2 ($\alpha = .8$), and T3 ($\alpha = .77$).

Positive Affect. The positive affect (PA) scale from the Positive and Negative Affect Scale for Children (PANAS-C; Laurent et al., 1999) was used to measure participants' pleasant emotions. This scale is adapted from the original PANAS developed by Watson et al. (1988) which is one of the prominent measures of emotion. This scale consists of 12 items and participants rate on a 5-point scale (1 = very slightly or not at all, 5 = extremely) how often they have felt each emotion during the past few weeks at school. Participants were provided with an overall PA score

(between 12-60) by summing together their answers. In the current study, items on this scale had good reliability across T1 ($\alpha = .83$), T2 ($\alpha = .86$), and T3 ($\alpha = .89$).

Sense of School Belonging. To explore participants' Sense of School Belonging (SoSB), the researcher used the Belonging Scale published by Frederickson and Dunsmuir (2009). This scale was adapted by Frederickson et al. (2007) from the Psychological Sense of School Membership Scale (Goodenow, 2003). Participants answer 'yes', 'no' or 'not sure' to 12-items and are provided with an overall SoSB score by following the scoring method outlined in Frederickson and Cameron (1999). In the current study, items on this scale had satisfactory reliability at T1 ($\alpha = .76$), and good reliability at T2 ($\alpha = .82$) and T3 ($\alpha = .83$).

3.3.6 Procedure

A primary school in the South-East of England was contacted to explore their interest in participating in this research and a meeting with the school's Special Educational Needs Co-ordinator (SENCo) to discuss the whole project took place. Once written consent had been obtained from the Headteacher to carry out the study in the school, a date was arranged for the quantitative study to begin and for the participant information sheets and parental consent forms to be distributed.

On the initial researcher visit to school, 11 classes of children across seven sessions were invited to participate: Year 5 classes were visited individually but, due to time pressures, Year 3 and Year 4 classes were merged where possible. In these sessions, the researcher explained the study and gained participant assent. Subsequently, children were randomly assigned at a class level to their diary condition.

Prior to this school visit, a digital spreadsheet was created and printed containing a list of unique identification (ID) numbers, the experimental condition each ID number was assigned to, and a class ID code. Each diary, and a set of questionnaire measures, had been pre-assigned an ID number which corresponded to the printed digital spreadsheet.

The class teacher distributed the diaries to the participating children, who were asked to write their names on them and to remove the inserted questionnaires to answer the questions. The diaries were then collected in, and the researcher administered the questionnaire measures whilst the class teacher added participant names from the diaries next to the corresponding ID number on the printed spreadsheet. This 'identifiable spreadsheet,' which was stored securely at the school (no copy was taken by the researcher), allowed participants to be identifiable based on their ID number. Using this approach meant that all questionnaire data taken from the school was

immediately quasi-anonymised whilst maintaining child identification where necessary: first, to make the distribution of T2 and T3 questionnaires easier as the researcher could call out the name of the participant associated with that ID number (rather than relying on participants to remember their ID); second, this allowed participants to be identified if a safeguarding concern arose.

Once the measures had been completed and collected in, the researcher called participants outside of their classroom (grouped according to diary condition based on the spreadsheet the teacher had populated) to introduce them to their diary and check their assent to participate (see appendix H for the scripts used).

The process for keeping the diary for each condition was the same, (e.g., writing three small things), however, the introductory blurb printed in the diary and what they were asked to write about were different. The event diary group were asked to write about three small things that had happened during their school day and had the following introduction “It can be really helpful to keep a record of things that have happened during the day...”. The moral obligation group were asked to write about three small things that happened during their school day which they were thankful for and had the following instruction “It is important to be thankful. Being thankful may help us to become better people. Let’s see what you are thankful for today...”. The intrinsic motivation group were asked to write about three small things that happened during their school day which they were thankful for and had the following instruction “Sometimes it is good to think about things that make you feel thankful. These thoughts are like jewels in a treasure chest. Even the smallest jewels are precious.”

After the introductory session, class teachers were asked to implement the diary activity daily at school over the next three weeks. In case of staff absence, a pack was left with each class teacher which included instructions for task completion to support the covering adult (see appendix H). If a child was absent from the initial introductory session their name was added to a diary and the identifiable spreadsheet. The researcher compiled a list of children who were absent and asked the setting to organise an adult to sit with the children and show them an introductory video to the study (<https://youtu.be/w3zt6feMLO8>) and a more specific video for their diary condition (event diary: <https://youtu.be/gx66Qi5PPCQ>; moral obligation diary: <https://youtu.be/KYLtqrKqQHo>; intrinsic motivation diary: <https://youtu.be/j8DrASyzW1Q>) which had been created by the researcher. Questionnaires completed by absent children were kept securely at school until the researcher returned for the next visit. If children chose to opt-out they were asked to complete the opt-out form.

After three weeks, T2 measures were completed by retrieving the identifiable spreadsheet to facilitate the distribution of the correct questionnaires to each participant. The researcher administered the measures and then collected the completed diaries (participant names were removed from these before taking them from the school). The data of any participants who had withdrawn since the initial visit was destroyed. For absent participants, the school was again asked to organise for an adult to sit with the participant and complete the post-intervention measures.

Following a further three weeks, T3 measures were completed. The same methods for distributing questionnaires, absent participants and destroying data of participants that had chosen to withdraw, were applied. At the end of the follow-up visit, participants were given debriefing documents for themselves and their parents/carers and provided with a new gratitude diary as a token of thanks for taking part in the project. For absent participants, the setting was asked to send the debriefing documents home (see Appendix I for debriefing documents).

Diary Condition Fidelity. Following the completion of data collection, the researcher coded a small sample of diaries ($n = 21$), to check participants had stayed true to their diary condition and had a minimum of 10 diary entries. This was necessary because participants were in one of three conditions within their individual classes and may have noticed their diary was different from those of their peers, and this might have influenced the content of their entries. The process involved providing each diary entry with two codes, one relating to diary condition (i.e., is it a 'neutral' or 'gratitude' comment), the second relating to the comment's length (i.e., short, medium, or long).

Once this initial sample had been coded by the researcher, all diaries were then coded by a Voluntary Research Assistant (VRA). The researcher and VRA met following the VRA's coding of the initial 21 diaries coded by the researcher to discuss discrepancies. Following adjustments, a Cohen's Kappa analysis showed a good level of consistency between the coding of the researcher and VRA. It identified 'substantial agreement' regarding the fidelity of the control group to their diary condition ($k = .800, p < .001$), and 'perfect agreement' for the experimental groups to their diary conditions ($k = 1.0$) a 'near perfect agreement' for the number of long comments that were present across diary conditions ($k = .843, p < .001$), a 'substantial agreement' for the number of medium comments ($k = .698, p < .001$) and a 'near perfect agreement' for the number of short comments ($k = .840, p < .001$). The VRA then went onto code the rest of the diaries and check they had the minimum number of diary entries.

Overall, three (1.7%) of the diaries did not have the minimum number of entries and 17 (9.5%) had comments which deviated from their condition. Nine of the 17 diaries were unfaithful to their diary condition 10% or more of the time and therefore their data was removed from the analysis alongside the three participants who had less than 10 diary entries.

In addition to checking diary condition fidelity, this procedure allowed for any safeguarding concerns to be raised with the school. One diary had a small number of entries that raised concerns which were shared with the safeguarding lead for the school.

Confidentiality and Data Storage. The researcher stored all quasi-anonymised (later fully anonymised) paper data (i.e., questionnaires and diaries) in a locked cabinet away from school to which only they possessed the key. Digital files were stored on an encrypted USB device, the researcher's university network and OneDrive account. The printed identifiable spreadsheet and quasi-anonymised data were kept at separate locations throughout the study.

Prior to the exchange of diaries, the VRA and researcher met to discuss the coding procedure alongside confidentiality and safe data storage. When in possession of the quasi-anonymised diaries it was agreed that the VRA would keep them stored in a locked room in their residence. Diaries were counted before and after they were shared with/returned by the VRA to ensure that none were lost.

3.4 Results

3.4.1 Participant Flow

Data from 152 participants was analysed across T1 and T2 to assess the impact of the diary intervention, and 115 participants at T3 to see if any effects persisted into the follow up period. All data was analysed using SPSS (Version 28).

3.4.2 Group Demographics

Group demographics at T1 can be found in Table 2. A one-way ANOVA revealed that at T1 there were no significant differences between groups regarding age $F(2,150) = 1.214, p = .300, \eta^2 = .016$. Similarly, a chi-square test indicated no significant differences between gender $\chi^2(4, N = 152) = 2.0, p = .736$.

Table 2.*Demographic statistics for each group at T1.*

Diary Condition	Participants (<i>n</i>)	Age	Gender		
		(years)	Female	Male	Other
		<i>M</i> (<i>SD</i>)			
Event	48	8.98 (.863)	26	22	0
Intrinsic motivation	50	8.82 (.919)	29	22	0
Moral obligation	54	8.70 (.932)	29	24	1

^a One participant did not report their age in this condition.

3.4.3 Data Analysis

Firstly, four 3 (diary condition) x 2 (time points) mixed model ANOVAs were conducted to analyse the impact of diary condition on participants' GQ6, QUAY (gratitude), PA and SoSB (wellbeing) scores across the intervention. Secondly, four 3 (diary condition) x 3 (time points) mixed model ANOVAs were conducted to explore if any changes between T1 and T2 were maintained after a three week follow up period. The mean scores for each measure across T1, T2 and T3 are presented in Table 3.

Table 3.*Descriptive statistics for GQ6, QUAY, PANAS, and BS.*

Time point	Outcome measure	Condition		
		Event	Intrinsic Motivation	Moral Obligation
		Mean (SD)	Mean (SD)	Mean (SD)
T1	GQ6	34.56 (5.56)	33.96 (5.37)	32.45 (5.77)
	QUAY Overall	22.98 (2.96)	23.00 (3.06)	22.25 (3.22)
	QUAY Grat ^a	26.90 (2.67)	26.75 (2.51)	26.28 (3.03)
	QUAY App ^b	20.46 (3.38)	20.96 (4.22)	19.63 (4.42)
	QUAY Priv ^c	21.56 (5.42)	21.30 (4.82)	20.83 (5.23)
	Positive affect	45.81 (7.68)	44.01 (7.54)	43.37 (7.70)
	SoSB	2.60 (0.32)	2.60 (0.30)	2.45 (0.33)
T2	GQ6	33.96 (5.42)	32.63 (5.84)	32.89 (6.59)
	QUAY Overall	23.57 (3.37)	23.41 (3.17)	22.86 (3.88)

	QUAY Grat	26.70 (3.07)	27.03 (2.46)	26.70 (3.29)
	QUAY App	21.21 (4.28)	20.52 (4.74)	21.43 (4.75)
	QUAY Priv	22.81 (4.74)	22.68 (4.38)	20.22 (6.14)
	Positive affect	43.15 (8.56)	42.87 (7.87)	44.14 (8.74)
	SoSB	2.57 (0.33)	2.54 (0.35)	2.50 (0.37)
T3	GQ6	34.23 (5.48)	33.72 (5.78)	33.14 (5.55)
	QUAY Overall	23.76 (3.41)	23.45 (3.48)	22.84 (2.78)
	QUAY Grat	26.72 (2.91)	26.96 (2.86)	26.50 (2.70)
	QUAY App	21.74 (4.20)	20.97 (5.26)	21.61 (4.05)
	QUAY Priv	22.81 (5.71)	22.41 (4.51)	20.42 (4.53)
	Positive affect	44.73 (9.06)	44.35 (9.73)	43.82 (7.47)
	SosB	2.59 (0.30)	2.64 (0.31)	2.49 (0.40)

^a Gratitude subscale. ^b Appreciation subscale. ^c Sense of privilege subscale.

3.4.4 Data preparation

The data from 29 participants were removed from the final analysis because they had not completed T1 and T2 measures ($n = 8$), their diary did not have at least 10 entries ($n = 3$), their diary was not handed in at the end of the intervention ($n = 2$), their diary entries deviated from the diary condition they were assigned by 10% or more ($n = 9$) or they had more than 20% of missing data on a measure ($n = 7$). Several participants had missing questionnaire data across various timepoints. If participants had missing data for more than 20% of a questionnaire, their data was removed from the final analysis. For participants who had missing data, but it accounted for less than 20% of the questionnaire items, their scores were pro-rated (Mazza et al., 2015).

The exploration of histograms suggested that not all data was normally distributed and that there were three extreme outliers. These included one participant scoring significantly lower than their peers on the GQ6 at T1, the second scoring significantly lower than their peers on the sense of privilege scale from the QUAY at T2, and the third scoring similarly to the second but at T3. Given that these scores did not appear to significantly reduce the mean scores of the overall variable (see Table 2) it was decided to not remove the outliers. Furthermore, although all data was not normally distributed, due to the large sample size (central limit theorem; Field, 2018) and the robustness of ANOVA, it was decided to continue with the analysis and promote caution with any findings. The Greenhouse-Geisser correction has been reported for all repeated measures ANOVAs.

3.4.5 Pre and Post Measure Results

The following sections report the results for analyses conducted on 152 participants data across T1 and T2 to assess change between the groups across the three-week intervention period.

Gratitude. The following section refers to the manipulation checks completed to assess if the diaries had been successful in inducing gratitude. To explore the gratitude hypotheses across T1 and T2, a 3x2 mixed model ANOVA was conducted to assess the impact of diary condition on participant's GQ6 scores. There was no significant main effect of time $F(1, 149) = 1.436, p = .233, \eta^2 = .010$ or diary condition $F(2, 149) = 1.197, p = .305, \eta^2 = .016$, and no interaction effect between the diary condition and time $F(2, 149) = 1.587, p = .208, \eta^2 = .021$. Therefore, the gratitude hypothesis was rejected for the GQ6 across T1 and T2.

Similarly, to explore the gratitude hypothesis with participants' QUAY scores, a 3x2 mixed model ANOVA was conducted. There was no significant effect of diary condition $F(2, 149) = .986, p = .375, \eta^2 = .013$ and no significant interaction effect $F(2, 149) = .067, p = .935, \eta^2 = .001$, but there was a significant main effect of time $F(1,149) = 4.467, p = .036, \eta^2 = .029$.

Wellbeing. To explore the wellbeing hypothesis, two 3x2 mixed model ANOVAs were conducted to assess the impact of diary condition on participant's SoSB and PA scores across T1 and T2. Results are presented in Table 4.

Table 4.

Results from 3x2 mixed model ANOVAs for SoSB and PA.

Scale	Data Output from SPSS											
	Effect of Time				Effect of Diary Condition				Interaction Effect			
	<i>df</i>	<i>F</i>	<i>P</i>	<i>np²</i>	<i>df</i>	<i>F</i>	<i>P</i>	<i>np²</i>	<i>df</i>	<i>F</i>	<i>P</i>	<i>np²</i>
Belonging	1, 149	1.396	.239	.009	2, 149	1.496	.227	.020	2, 149	1.105	.334	.015
Positive Affect	1, 149	2.355	.127	.016	2, 149	.293	.747	.004	2, 149	2.305	.103	.030

There was no significant interaction effect or main effects of time or diary condition on participants' SoSB and PA scores. Therefore, the wellbeing hypothesis was rejected across T1 and T2.

3.4.6 Follow Up

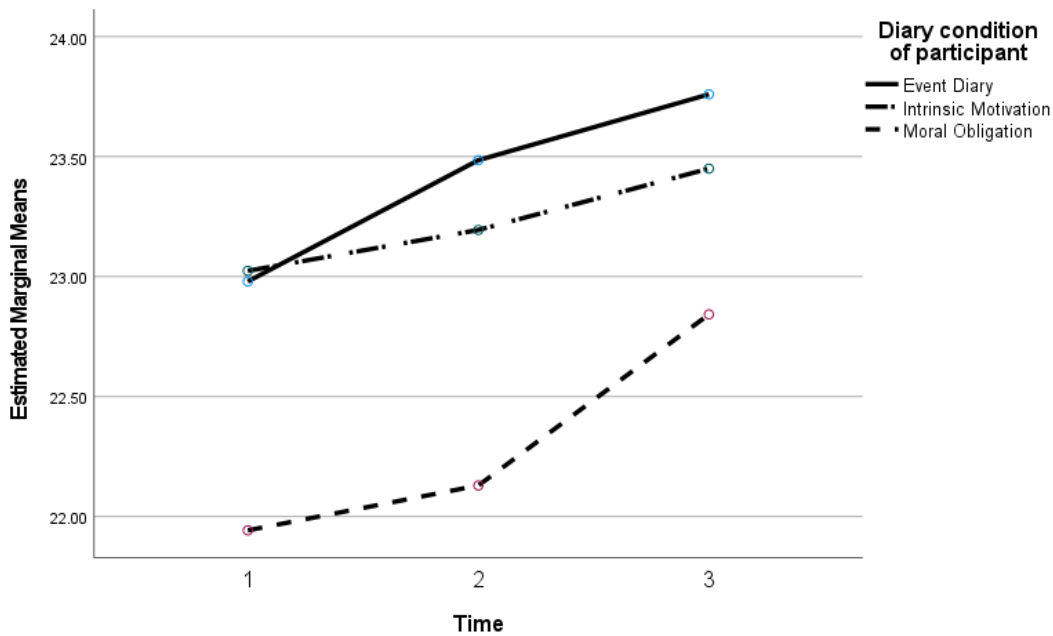
The following sections report the results for analysis conducted on 115 participants across T1, T2 and T3. The follow up took place three weeks after post intervention data collection.

Gratitude. To explore the gratitude hypothesis across T1, T2, and T3, a 3x3 mixed model ANOVA was conducted to assess the impact of diary condition on participant's GQ6 scores. The assumptions of Equality of Covariance and Mauchly's Test of Sphericity were both violated for this analysis ($p = .014$; $p = .010$, respectively). There was no significant main effect of time $F(1.85, 207.34) = .682$, $p = .496$, $\eta^2 = .006$, or diary condition $F(2, 112) = .849$, $p = .431$, $\eta^2 = .015$, and no interaction effect between the diary condition and time $F(3.70, 207.34) = .510$, $p = .714$, $\eta^2 = .009$. Therefore, the gratitude hypothesis when measured by the GQ6 was rejected for the whole study.

Similarly, to explore the gratitude hypothesis across T1, T2, and T3, a 3x3 mixed model ANOVA was conducted to assess the impact of diary condition on participant's QUAY scores. Mauchly's Test of Sphericity was violated for this analysis ($p = .007$). There was no significant interaction effect between time and diary condition $F(3.68, 206.27) = .300$, $p = .863$, $\eta^2 = .005$, or a main effect of diary condition $F(2, 112) = 1.63$, $p = .200$, $\eta^2 = 0.28$, but there was a main effect of time $F(1.84, 206.27) = 4.186$, $p = .019$, $\eta^2 = .036$. Inspection of the plot in Figure 1 suggests that all participant's gratitude scores, as measured by the QUAY, increased across the study.

Figure 2.

Participants' overall QUAY Scores Across T1, T2, and T3.



Wellbeing. To explore the wellbeing hypothesis across T1, T2, and T3, two 3x3 mixed model ANOVAs were conducted to assess the impact of diary condition on participant’s SoSB and PA scores. Results are presented in Table 5.

Table 5.

Results from 3x3 mixed model ANOVAs for SoSB and PA.

Scale	Data Output from SPSS											
	Effect of Time				Effect of Diary Condition				Interaction Effect			
	<i>df</i>	<i>F</i>	<i>P</i>	<i>np²</i>	<i>df</i>	<i>F</i>	<i>P</i>	<i>np²</i>	<i>df</i>	<i>F</i>	<i>P</i>	<i>np²</i>
Belonging	1.89,	.697	.491	.006	2, 112	1.985	.142	.034	3.77,	1.44	.223	.025
	211.19 ^a								211.19 ^a			
Positive Affect	1.80,	1.438	.240	.013	2, 112	.439	.646	.008	3.60,	.853	.484	.015
	201.79 ^b								201.79 ^b			

^a Greenhouse-Geisser corrected (.943), ^b Greenhouse-Geisser corrected (.901)

For both the SoSB and PA analyses Mauchly's test of sphericity was violated ($p = .031$; $p = .002$, respectively). Additionally, the assumption of Equality of Covariance was also violated for the PA analyses ($p = .030$). There was no significant interaction effect, or main effects of time or diary condition on participants' SoSB and PA scores. Therefore, the wellbeing hypothesis was rejected across T1, T2, and T3.

3.5 Discussion

This study was designed to explore whether the way in which gratitude diaries are presented to children influenced their levels of gratitude and wellbeing. The diaries in the experimental conditions were conceptualised as being intrinsically motivating or presenting a moral obligation, where the intrinsic motivation diary had a celebratory rhetoric around gratitude (i.e., writing to feel good) and the moral obligation diary had a neutral tone about gratitude but with amended wording to try and reflect gratitude as something one ought to express.

In summary, no significant differences between the diary conditions were found across the study for participants' gratitude or wellbeing. There was a significant effect of time on gratitude levels as measured by the QUAY with participants' scores increasing over time, however, this was not attributable to the diary condition participants were allocated to. There are several factors that might have led to this increase in scores, including that this research was carried out in the last half of the summer term where participants were preparing to break for their summer holidays.

This study has built upon previous thesis research which has found mixed results regarding gratitude diary interventions with children. The most recent study that used a similar methodology is Shuttleworth (2018), who found no impact of diary condition on children's gratitude, PA or SoSB. Whilst their research focused on the distinction between a gratitude and an appreciation diary in comparison to a control group, they wondered whether their lack of specificity for how children wrote in their diaries (e.g., they asked children to write 'some things' rather than a specific number of things) contributed to their lack of findings. This study, however, did ask children to specifically identify three small things, (like Diebel, 2014 and Cripps, 2019) and yet still found no significant result of diary condition. Several factors could have contributed to these findings, which will now be discussed.

Firstly, it appeared that most children scored highly in gratitude at baseline, suggesting a ceiling effect whereby children had already reached a sufficiently high threshold that there was little capacity remaining for improvement. This aligns with the resistance hypothesis (McCullough et al., 2004) which postulates that those presenting highly in trait gratitude are less susceptible to

the benefits of gratitude inducing experiences because “the amount of gratitude in their daily moods is determined so thoroughly by personality processes” (p.297). The QUAY measure, however, was developed in response to the critical point that gratitude measures might not be sensitive enough to capture the changes in all expressions of trait gratitude (e.g., cognitive, affective, behavioural; Smith, 2020) – and, interestingly, it was on the QUAY that a significant effect of time was found. Whilst this suggests the QUAY may be more sensitive to changes in gratitude than the GQ6, this finding may have been confounded by the timing of the study within the school year.

It could be suggested that gratitude fatigue induced by diary writing (Emmons, 2013) might conceivably be experienced more rapidly by children already measuring high in gratitude, since this daily exercise might represent for them additional work on top of a habit to which they are already accustomed. Froh et al. (2008) reflect that motivation is important when practising gratitude; it is possible, then, that children might have seen the activity as more of a chore than joyful choice and therefore may have been less motivated to engage.

3.5.1 Strengths and Limitations

There are several strengths to this study which are important to highlight. Firstly, this research makes a novel distinction between an intrinsically motivating gratitude diary and an extrinsically motivating, moral obligation gratitude diary to conceptualise the difference in how gratitude diaries are presented to (and experienced by) children. Whilst this study did not find a significant impact of diary condition, this conceptualisation warrants further investigation because how children experience gratitude diaries is important to understand so that they can be better designed to meet children’s needs.

Secondly, it is the first study to use the QUAY as an outcome variable which means that it has contributed to the measure’s emerging evidence base. There was a significant effect of time detected across the study for participants’ QUAY scores in comparison to the GQ6, suggesting the possibility that the measure is more sensitive to changes in gratitude, as it was designed to be. Given the limitations of this study, however, further research is needed to explore this.

A final strength of this research is its commitment to child assent as demonstrated by the number of children who chose to opt out of this study. This implies that children felt safe enough to withdraw their participation and their wishes were respected.

Despite these strengths, there are some limitations to the research which should be noted. Firstly, the lack of group differences suggests that either (a) the manipulation (i.e., to present gratitude as either an enjoyable activity or a moral obligation) was unsuccessful, or (b) that the manipulation was successful but that it had no impact on the dependent variable of

reported gratitude. Further research should explore which of these possible explanations is most likely. Secondly, only one school was recruited to participate in the research; this, it could be argued, might have biased the sample as it was restricted to one school's culture and ethos. Thirdly, the follow-up sample was significantly smaller than the sample that participated in the intervention. The follow up visit was scheduled for the last week of the summer term in July 2022, and this coincided with extreme weather conditions (Press Office, 2022). This may have impacted the findings of the follow up data as it does not reflect the entire sample.

Finally, due to time constraints, it was not possible to introduce the study to teaching staff at the school prior to the initial visit. Given that class teachers and adults at the school were then asked to implement the daily intervention in the researcher's absence, it would have been beneficial to have introduced the research to them beforehand, so that they had a greater understanding of its purpose and their role within it. The implementation framework (Chidley & Stringer, 2020) informs of the importance of attitudes and the transfer climate when embedding learning. This framework could have been a helpful process by which to establish a mutual understanding of the research with school staff and facilitate a positive transfer climate where they valued the purpose of the research and understood their importance in the research process. Whilst the level of teacher engagement in the study was not measured, it is speculated that by giving teaching staff prior knowledge of the study this might have facilitated better engagement as they would have known what to expect and in turn this may have fostered more participant engagement (Cardwell, 2011).

3.5.2 Future Research

When considered in comparison to the thesis research conducted by Cripps (2019), this study did not have as specific a population. Cripps, who found gratitude diaries to be impactful, explored their use with children specifically in Year 6, as a means of reducing their anxiety. It is suggested, therefore, that further research into the effectiveness of different types of gratitude diary is done in the context of a targeted intervention rather than a universal one (as was the case in this study). This ties in with the recommendations of previous researchers such as Dickens (2017), who highlight that individual differences need to be considered when implementing gratitude based interventions. This also aligns with previous research findings that the impact of gratitude based interventions has been greater for particular children, for example those lower in trait gratitude (Harbaugh & Vasey, 2014) and those lower in positive affect (Froh et al., 2009).

In addition, findings from Obeldobel and Kerns (2021) suggest that weekly rather than daily interventions may yield better results and therefore, completing a diary less frequently for a

longer duration may overcome some of the challenges posed by gratitude fatigue (Emmons, 2013). Future researchers, then, may benefit from designing their gratitude diary intervention in this way to further explore the benefits of this approach.

Given the implications of gratitude fatigue, a possible reason for the lack of group findings in this research is that the intrinsic motivation and moral obligation conditions may not have been distinct enough. Ethically, however, it was important that the conceptualisation of the moral obligation diary did not induce feelings of unpleasantness. Moving forwards, exploring how to make the intrinsically motivating gratitude diary more pleasant and celebratory may offer a viable way for making these two conceptualisations more distinct.

One way of exploring the manipulation further might be through a 'choice' and 'requirement' conceptualisation. It may be beneficial to create an experimental study which explores whether having an element of choice over the activity has an impact on gratitude and wellbeing scores. It could perhaps be argued, for example, that if children have a sense of choice over whether or not they complete a gratitude diary entry this would suggest that the activity is more intrinsically rewarding for them.

Finally, research into gratitude diaries would benefit from the use of a qualitative paradigm. Quantitative research, such as this study, is unable to capture the experiences of those for whom gratitude diaries are designed to benefit, and a qualitative methodology would enable the elicitation of such views. Gathering children's views on their experience of gratitude diaries is essential given the previously mentioned point of the impact this can have on diary development to meet children's needs. On this note, there is a study that has been recently carried out to this effect and obtains children's views on completing gratitude diaries.

3.5.3 Implications for Educational Psychology Practice and Conclusion

Due to the value that schools place on the advice given by educational psychologists (EPs; Ashton & Roberts, 2007), it is important that EPs are aware of the benefits of gratitude diary interventions, such as increases in positive affect (Froh et al., 2009), sense of school belonging (Diebel, 2014), and the reduction of anxiety (Cripps, 2019).

Despite the benefits of the intervention, there are circumstances which need to be considered when recommending it. Firstly, EPs should consider establishing the child's baseline level of gratitude (i.e., via the GQ6 or the QUAY) as this could determine how likely the intervention is to be successful (Froh et al., 2009; Harbaugh & Vasey, 2014).

Secondly, identifying the outcome of interest for the intervention is important because findings are mixed with regards to the effectiveness of gratitude diaries on specific wellbeing measures. The effectiveness of the intervention, therefore, may be determined by the outcome of interest (e.g., increasing PA; Obeldobel & Kerns, 2021).

Thirdly, is it plausible that how children experience a gratitude diary impacts how likely they are to engage in the intervention. When recommending gratitude diaries, it will be important to consider the type of motivation driving the child to engage in the activity; for example would their engagement be based on their enjoyment of the activity and therefore indicative of them finding the activity intrinsically rewarding and motivating, or would it be considered an obligation, and therefore perhaps more reflective of the child engaging in the activity to meet the expectations of others and to avoid being perceived as ungrateful. Therefore, how they are designed and presented to children should be considered with the tentative hypothesis that diaries which are presented in a more celebratory and pleasant way, and therefore perceived as more intrinsically motivating for children, may have better outcomes (Cripps, 2019). Research that specifically elicits children's view on gratitude diaries will be useful to draw upon in these conversations.

Finally, EPs have an ethical duty to ensure that when recommending gratitude interventions, they do so with the intention of supporting children to develop positive psychological functioning and not to imply that children are ungrateful.

In conclusion, this study has contributed to the gratitude diary literature with primary school children by making a novel distinction in the conceptualisation of gratitude diaries based on the underlying motivation for their completion. This study attempted to create diary manipulations based on intrinsic motivation (i.e., the children completed it because they found it an enjoyable activity) and extrinsic motivation (i.e., the children completed it because they felt obliged to express gratitude as it is the right thing to do). This research also adds to the evidence base for the QUAY measure. Whilst only a significant effect of time emerged, this study adds to the evidence base refining the literature to help practitioners understand under which circumstances gratitude diaries produce the most successful results. This research is the first step to empirically evaluating the impact of gratitude diary presentation on children's gratitude and wellbeing.

Appendix A Instruction to Authors for Journal

Journal of Positive Psychology and Wellbeing (<https://journalppw.com/index.php/jppw/>)

- ISSN: 2587-0130
- Frequency: 4 issues/year
- Indexing: *Scopus* , *EBSCO*

Word count: Average 7500; articles to be no shorter than 5000 words and no longer than 10,000 words.

Appendix B Search Strategy

Database	Searches (December 2022)	Results (n)
PsycINFO	S1: TI (gratitude OR grateful* OR thankful* OR "benefit finding" OR appreciat* OR "count* your blessings") OR AB (gratitude OR grateful* OR thankful* OR "benefit finding" OR appreciat* OR "count* your blessings")	6,621
	S2: DE "Gratitude"	1,730
	S3: S1 OR S2	6,688
	S4: TI ("posttraumatic growth" OR "post traumatic growth" OR "PTG" OR "stress related growth" OR "positive psychological growth" OR "Psychological growth" OR Flourish*) OR AB ("posttraumatic growth" OR "post traumatic growth" OR "PTG" OR "stress related growth" OR "positive psychological growth" OR "Psychological growth" OR Flourish*)	9,938
	S5: DE "Posttraumatic Growth"	2,162
	S6: S4 OR S5	10,157
	S7: S3 AND S6	230
Web of Science	S1: (TI=(gratitude OR grateful* OR thankful* OR "benefit finding" OR appreciat* OR "count* your blessings")) OR AB=(gratitude OR grateful* OR thankful* OR "benefit finding" OR appreciat* OR "count* your blessings")	111,752
	S2: (TI=("posttraumatic growth" OR "post traumatic growth" OR PTG OR "stress related growth" OR "positive psychological growth" OR "Psychological growth" OR Flourish*)) OR AB=("posttraumatic growth" OR "post traumatic growth" OR PTG OR "stress related growth" OR "positive psychological growth" OR "Psychological growth" OR Flourish*)	23,819
	S1 AND S2	630
ERIC	S1: title(gratitude OR grateful* OR thankful* OR "benefit finding" OR appreciat* OR "count* your blessings") OR abstract(gratitude OR grateful* OR thankful* OR "benefit finding" OR appreciat* OR "count* your blessings")	13,047
	S2: abstract("posttraumatic growth" OR "post traumatic growth" OR "PTG" OR "stress related growth" OR "positive psychological growth" OR "Psychological growth" OR Flourish*) OR title("posttraumatic growth" OR "post traumatic growth" OR "PTG" OR "stress related growth" OR "positive psychological growth" OR "Psychological growth" OR Flourish*)	2,057
	1 AND 2	46

Medline	S1: AB (gratitude OR grateful* OR thankful* OR "benefit finding" OR appreciat* OR "count* your blessings") OR TI (gratitude OR grateful* OR thankful* OR "benefit finding" OR appreciat* OR "count* your blessings")	65,674
	S2: AB ("posttraumatic growth" OR "post traumatic growth" OR "PTG" OR "stress related growth" OR "positive psychological growth" OR "Psychological growth" OR Flourish*) OR TI ("posttraumatic growth" OR "post traumatic growth" OR "PTG" OR "stress related growth" OR "positive psychological growth" OR "Psychological growth" OR Flourish*)	8,295
	S3: (MH "Posttraumatic Growth, Psychological")	570
	S4: S2 OR S3	8,329
	S5: S1 AND S4	352
<hr/>		
Total		1, 247

Appendix C Quality Assessment

Y = Yes; N = No; NC = Not clear

Domain	Item	Authors (Table 1 of 3)							
		Wang & Wu (2020)	Wang et al. (2018)	Zhou & Wu (2015)	Zhou & Wu (2016)	Greene & McGovern (2017)	Lin et al. (2022)	Zeligman et al. (2021)	Lee & Kim (2021)
Introduction	Was the problem or phenomenon under investigation defined, described, and justified?	Y	Y	Y	Y	NC	Y	Y	Y
	Was the population under investigation defined, described, and justified?	Y	NC	Y	Y	Y	Y	Y	NC
	Were specific research questions or hypotheses stated?	N	Y	Y	Y	Y	N	Y	Y
	Were operational definitions of all study variables provided?	Y	Y	Y	Y	Y	Y	Y	Y
	Domain Quality Score	3/4	3/4	4/4	4/4	3/4	3/4	4/4	3/4
Participants	Were participant inclusion criteria stated?	N	N	N	N	Y	Y	Y	N
	Was the participant recruitment strategy described?	N	Y	Y	Y	Y	Y	Y	Y
	Was a justification/rationale for the sample size provided?	N	N	N	N	N	Y	Y	N
	Domain Quality Score	0/3	1/3	1/3	1/3	2/3	3/3	3/3	1/3
Data	Was the attrition rate provided? (Applies to cross-sectional and prospective studies)	NC	N	Y	NC	N	NC	NC	NC
	Was a method of treating attrition provided?	Y	N	Y	Y	Y	Y	Y	Y
	Were the data analysis techniques justified (i.e., was the link between hypotheses/aims/research questions and data analyses explained)?	NC	Y	Y	Y	NC	NC	Y	Y

Domain	Item	Authors (Table 1 of 3)							
		Wang & Wu (2020)	Wang et al. (2018)	Zhou & Wu (2015)	Zhou & Wu (2016)	Greene & McGovern (2017)	Lin et al. (2022)	Zeligman et al. (2021)	Lee & Kim (2021)
	Were the measures provided in the report (or in a supplement) in full?	N	N	N	N	N	N	N	N
	Was evidence provided for the validity of all the measures (or instrument) used?	Y	Y	Y	Y	Y	Y	Y	Y
	Was information provided about the person(s) who collected the data? (e.g., training, expertise, other demographic characteristics)?	N	Y	Y	Y	N	Y	N	Y
	Was information provided about the context (e.g., place) of data collection?	N	N	Y	Y	Y	Y	Y	NC
	Was information provided about the duration (or start and end date) of data collection?	N	Y	N	N	N	Y	N	Y
	Was the study sample described in terms of key demographic characteristics?	N	N	N	N	Y	Y	N	N
	Was discussion of findings confined to the population from which the sample drawn?	Y	Y	Y	Y	Y	Y	Y	Y
	Domain Quality Score	3/10	5/10	7/10	6/10	5/10	7/10	5/10	6/10
Ethics	Were participants asked to provide (informed) consent or assent?	Y	Y	Y	Y	NC	Y	Y	NC
	Were participants debriefed at the end of data collection?	NC	NC	Y	Y	NC	NC	NC	NC
	Were funding sources or conflicts of interests disclosed?	N	Y	Y	N	N	Y	N	Y
	Domain Quality Score	1/3	2/3	3/3	2/3	0/3	2/3	1/3	1/3

Domain	Item	Authors (Table 1 of 3)							
		Wang & Wu (2020)	Wang et al. (2018)	Zhou & Wu (2015)	Zhou & Wu (2016)	Greene & McGovern (2017)	Lin et al. (2022)	Zeligman et al. (2021)	Lee & Kim (2021)
Total	Overall quality score	35%	55%	75%	65%	50%	75%	65%	55%

Domain	Item	Authors (Table 2 of 3)						
		Ruini & Vescolvelli (2013)	Strack et al. (2010)	Manor-Binyamini (2014)	Harnett et al. (2021)	Vazquez et al. (2022)	Su et al. (2019)	Miragal et al. (2021)
Introduction	Was the problem or phenomenon under investigation defined, described, and justified?	NC	Y	Y	Y	Y	Y	Y
	Was the population under investigation defined, described, and justified?	Y	Y	Y	Y	N	Y	Y
	Were specific research questions or hypotheses stated?	Y	Y	Y	Y	Y	Y	Y
	Were operational definitions of all study variables provided?	Y	Y	Y	Y	Y	Y	Y
	Domain Quality Score	3/4	4/4	4/4	4/4	3/4	4/4	4/4
Participants	Were participant inclusion criteria stated?	Y	N	N	N	Y	N	Y
	Was the participant recruitment strategy described?	NC	N	N	Y	Y	Y	Y
	Was a justification/rationale for the sample size provided?	N	N	N	N	N	N	N
	Domain Quality Score	1/3	0/3	0/3	1/3	2/3	1/3	2/3
Data	Was the attrition rate provided? (Applies to cross-sectional and prospective studies)	N	N	N	Y	Y	N	NC
	Was a method of treating attrition provided?	N/A	N/A	N/A	N	Y	NA	Y

Domain	Item	Authors (Table 2 of 3)						
		Ruini & Vescolvelli (2013)	Strack et al. (2010)	Manor-Binyamini (2014)	Harnett et al. (2021)	Vazquez et al. (2022)	Su et al. (2019)	Miragal et al. (2021)
	Were the data analysis techniques justified (i.e., was the link between hypotheses/aims/research questions and data analyses explained)?	Y	Y	Y	Y	Y	Y	Y
	Were the measures provided in the report (or in a supplement) in full?	N	N	N	N	N	N	N
	Was evidence provided for the validity of all the measures (or instrument) used?	Y	Y	Y	Y	Y	Y	Y
	Was information provided about the person(s) who collected the data? (e.g., training, expertise, other demographic characteristics)?	N	N	Y	N	N	N	Y
	Was information provided about the context (e.g., place) of data collection?	N	N	N	N	N	N	Y
	Was information provided about the duration (or start and end date) of data collection?	N	N	N	N	N	N	Y
	Was the study sample described in terms of key demographic characteristics?	N	N	N	N	Y	N	N
	Was discussion of findings confined to the population from which the sample drawn?	Y	Y	Y	N	Y	Y	Y
	Domain Quality Score	3/9	3/9	4/9	3/10	6/10	3/9	7/10
Ethics	Were participants asked to provide (informed) consent or assent?	Y	NC	NC	Y	NC	Y	Y

Domain	Item	Authors (Table 2 of 3)						
		Ruini & Vescolvelli (2013)	Strack et al. (2010)	Manor-Binyamini (2014)	Harnett et al. (2021)	Vazquez et al. (2022)	Su et al. (2019)	Miragal et al. (2021)
	Were participants debriefed at the end of data collection?	NC	NC	NC	NC	NC	NC	NC
	Were funding sources or conflicts of interests disclosed?	N	Y	N	N	Y	N	Y
	Domain Quality Score	1/3	1/3	0/3	1/3	1/3	1/3	2/3
Total	Overall quality score	42%	42%	42%	45%	60%	47%	75%

Domain	Item	Authors (Table 3 of 3)			
		Eaves (2018)	Kim & Bae (2019)	Viesel-meyer et al. (2017)	Leppma et al. (2018)
Introduction	Was the problem or phenomenon under investigation defined, described, and justified?	Y	Y	Y	Y
	Was the population under investigation defined, described, and justified?	Y	NC	NC	Y
	Were specific research questions or hypotheses stated?	Y	Y	Y	Y
	Were operational definitions of all study variables provided?	Y	Y	Y	Y
	Domain Quality Score	4/4	3/4	3/4	4/4
Participants	Were participant inclusion criteria stated?	Y	N	Y	Y
	Was the participant recruitment strategy described?	Y	Y	Y	Y
	Was a justification/rationale for the sample size provided?	N	N	N	N
	Domain Quality Score	2/3	1/3	2/3	2/3
Data	Was the attrition rate provided? (Applies to cross-sectional and prospective studies)	N	N	N	NC
	Was a method of treating attrition provided?	Y	NA	NA	Y
	Were the data analysis techniques justified (i.e., was the link between hypotheses/aims/research questions and data analyses explained)?	Y	Y	Y	Y

Domain	Item	Authors (Table 3 of 3)			
		Eaves (2018)	Kim & Bae (2019)	Viesel-meyer et al. (2017)	Leppma et al. (2018)
	Were the measures provided in the report (or in a supplement) in full?	N	N	N	N
	Was evidence provided for the validity of all the measures (or instrument) used?	Y	Y	Y	Y
	Was information provided about the person(s) who collected the data? (e.g., training, expertise, other demographic characteristics)?	N	Y	N	N
	Was information provided about the context (e.g., place) of data collection?	Y	N	Y	N
	Was information provided about the duration (or start and end date) of data collection?	N	N	N	N
	Was the study sample described in terms of key demographic characteristics?	N	N	N	Y
	Was discussion of findings confined to the population from which the sample drawn?	Y	Y	Y	Y
	Domain Quality Score	5/10	4/9	4/9	5/10
Ethics	Were participants asked to provide (informed) consent or assent?	Y	Y	Y	Y
	Were participants debriefed at the end of data collection?	Y	NC	NC	NC
	Were funding sources or conflicts of interests disclosed?	N	N	N	Y
	Domain Quality Score	2/3	1/3	1/3	2/3
Total	Overall quality score	65%	45%	53%	65%

Appendix D Data Extraction Table

Author(s)	Participant Characteristics	Adverse Experience	Design/Method/Analysis	Outcome Measures	Main Findings (as relating to the research questions)
(Eaves, 2018)	<ul style="list-style-type: none"> • <i>N</i> = 61 • <i>Recruited from</i>: social media and various online support groups • <i>Mean age (SD)</i>: 54.7, age range 40-69 • <i>Gender</i>: 60 female; 1 unreported gender 	Patients had received a diagnosis of cancer and received treatment	<ul style="list-style-type: none"> • <i>Design</i>: cross-sectional, nonexperimental • <i>Method</i>: online survey via Google forms • <i>Analysis</i>: hierarchical regression 	<ul style="list-style-type: none"> • PTGI • General humanity scale • Connor-Davidson resilience scale • GQ6 • Spiritual transcendence index 	<ul style="list-style-type: none"> • Gratitude was a significant predictor of PTG ($\beta = .483, p < .001$), and positively correlated with PTG ($r = .510$) • Resilience was also a significant predictor ($\beta = .428, p < .05$) • Resilience and spiritual transcendence were also positively correlated to PTG • Only gratitude and resilience added statistical significance to the prediction of PTG
(Greene & McGovern, 2017)	<ul style="list-style-type: none"> • <i>N</i> = 350 • <i>Recruited from</i>: Primarily social media sites such as online bereavement programmes) across 21 counties, with the majority being in the USA (83.9% of sample) • <i>Mean age (SD)</i>: 40.05 (12.23) • <i>Gender</i>: 314 (89%) female; 34 (10%) male; 2 (1%) not reported 	Bereavement of a parent prior to 18 years old	<ul style="list-style-type: none"> • <i>Design</i>: cross sectional, nonexperimental • <i>Method</i>: survey via online survey (majority quantitative scales, with 1 open question). Partially retrospective as one question related to trauma in childhood • <i>Analysis</i>: Correlation, MANOVA, ANOVA, Chi-squared, Qualitative themes 	<ul style="list-style-type: none"> • GQ6 (McCullough, et al. 2002) • PTGI-SF (Tedeschi & Calhoun, 1996) • Flourishing Scale (FS; Diener et al. 2009) • Patient Health Questionnaire-9 (Kroenke et al. 2001) • Other childhood trauma item (assessed by a single question) • Adult trauma item (adult trauma assessed by a single question) • Perceived change in gratitude items (asked a fixed-choice question about the impact of parental death on gratitude, then asked a follow up open-ended question to elaborate on their responses) 	<ul style="list-style-type: none"> • Gratitude was positively correlated with flourishing ($r = .654, p < .001$) and PTG ($r = .325, p < .001$). Gratitude negatively correlated with depression ($r = -.374, p < .001$). Those reporting higher gratitude scores, tended to higher levels of wellbeing (flourishing) and PTG • Childhood trauma was not associated with change in gratitude responses, gratitude, flourishing, PTG or depression. Those who reported little adult trauma had higher flourishing scores than those who reported quite a bit. Adulthood traumas were related to current functioning, but childhood traumas were not

Author(s)	Participant Characteristics	Adverse Experience	Design/Method/Analysis	Outcome Measures	Main Findings (as relating to the research questions)
(Harnett et al., 2021)	<ul style="list-style-type: none"> • <i>N</i> = 506 • <i>Recruited from</i>: current or former police officers in Australia • <i>Mean age (SD)</i>: Not reported, but ages 	<p>Assumption that there was prolonged exposure to traumatic events</p>	<ul style="list-style-type: none"> • <i>Design</i>: cross sectional, nonexperimental • <i>Method</i>: online survey • <i>Analysis</i>: Path analysis 	<ul style="list-style-type: none"> • Demographic statistics • GQ6 • Self-compassion scale (Raes et al., 2011) • PTGI • Revised life orientation test (Scheier et al., 1994) 	<ul style="list-style-type: none"> • Those who could remember their parents' death had higher gratitude, flourishing and PTG scores • MANOVAs (change in gratitude (3) x measures (4)) and ANOVAs revealed significant differences among the change in gratitude groups (increase, decrease, no change) on individual measures • Of those that could remember their EPD experience 79% reported an increase in gratitude and appreciation as a result (life is precious, appreciate loved ones) • Age at time of death had a small positive association with gratitude (older people at time of EPD reported higher levels of PTG) • Small positive association between years since death, gratitude, and flourishing (longer = higher gratitude and well-being and less PTG and depression) • Gratitude significantly correlated with PTG ($r = .37, p < .01$) and other variables • Gratitude was not included in the final path model as part of the positivity construct and the authors did not report why. The final model included

Author(s)	Participant Characteristics	Adverse Experience	Design/Method/Analysis	Outcome Measures	Main Findings (as relating to the research questions)
	ranged from 20-60+ with the most common age bracket being 41-50 • <i>Gender</i> : 258 (51%) male; 248 (48%) female			<ul style="list-style-type: none"> • Multidimensional scale of perceived social support (Zimet et al., 1998) • Activity level • Posttraumatic stress disorder checklist (Weathers et al., 2013) • Depression and anxiety scale (Lovibond & Lovibond, 1995) • Mental health continuum short form (Keyes, 2002) • Mindful attention awareness scale (Brown & Ryan, 2003) 	optimism and self-compassion, and excluded gratitude and mindfulness
(Kim & Bae, 2019)	<ul style="list-style-type: none"> • <i>N</i> = 450 • <i>Recruited from</i>: community centres in major cities and regions across South Korea • <i>Mean age (SD)</i>: 39.73 (SD = 13.73) with a range from 19-68 • <i>Gender</i>: 245 (59.6%) female; 166 (40.4%) males. 	143 experienced interpersonal traumas (e.g., physical abuse) 146 experienced impersonal traumas (e.g., accidents and natural disasters) 122 experienced interpersonal related traumas (e.g., death of a partner)	<ul style="list-style-type: none"> • <i>Design</i>: Cross-sectional, nonexperimental • <i>Method</i>: Survey • <i>Analysis</i>: Pearson's correlation, mediation/moderation analysis using PROCESS 	<ul style="list-style-type: none"> • Trauma experience questionnaire (Song et al., 2009; Shin & Chung, 2012) • Korean version of the event-related rumination inventory (Cann et al., 2011; Ahn et al., 2013) • Korean version of the PTGI (Tedeschi & Calhoun, 1996; Song et al., 2009) • Korean version of the GQ6 (McCullough et al., 2002; Kwon et al., 2006) 	<ul style="list-style-type: none"> • IR positively correlated with DR ($r = 0.36, p < 0.01$) and negatively correlated with gratitude ($r = -0.29, p < 0.01$) • DR positively correlated with PTG ($r = 0.36, p < 0.01$) but was unrelated to gratitude • Positive correlation between gratitude and PTG ($r = 0.45, p < 0.01$) • DR mediated the relationship between IR and PTG (IR and PTG did not have a direct relationship) • Gratitude moderated the mediating relationship between DR and PTG • There was a difference in the effect of DR on PTG between participants who reported high/low levels of gratitude.

Author(s)	Participant Characteristics	Adverse Experience	Design/Method/Analysis	Outcome Measures	Main Findings (as relating to the research questions)
(Lee & Kim, 2021)	<ul style="list-style-type: none"> • <i>N</i> = 296 • <i>Recruited from</i>: young adults who were Christian Protestant who participated in church clubs, living in South Korea • <i>Mean age (SD)</i>: 27.08 (4.81) • <i>Gender</i>: 132 (44.6%) males; 164 (55.4%) females 	Data not collected regarding adverse experiences	<ul style="list-style-type: none"> • <i>Design</i>: cross-sectional, nonexperimental design • <i>Method</i>: Surveys completed in a face to face scenario with researchers administering the questionnaires • <i>Analysis</i>: correlation, SEM 	<ul style="list-style-type: none"> • Intrinsic religious orientation scale (Allport and Ross, 1967, translated into Korean by Kim (1992)) • Enright forgiveness inventory (Enright, 2001, translated into Korean by Oh 2008) • GQ6 (McCullough et al. 2002 translated into Korean by Kwon et al., 2006) • PTGI (Tedeschi & Calhoun, 1996, translated into Korean by Song, 2007) 	<p>The effect of deliberate rumination on PTG is reinforced through gratitude</p> <ul style="list-style-type: none"> • Positive associations between religiosity, forgiveness, gratitude and PTG. Specifically, gratitude significantly and positively correlated with PTG ($r = .52, p < .01$) • As well as a direct link between religiosity and PTG, forgiveness ($p < .01$) and gratitude ($p < .01$) both independently mediated the association between religiosity and post traumatic growth. The researchers suggested that we need to encourage these to aspects to enable religious people to overcome adversity • Researchers surmise that gratitude provides tools (e.g., coping strategies, social support, positive reinterpretation, proactive handling, and planning) and this needs to be cultivated to transcend traumatic events and facilitate personal growth.
(Leppma et al., 2018)	<ul style="list-style-type: none"> • <i>N</i> = 111 • <i>Recruited from</i>: police force in New Orleans, USA. • <i>Mean age (SD)</i>: 43.1 (9.1) 	Involvement in Hurricane Katrina	<ul style="list-style-type: none"> • <i>Design</i>: cross-sectional, nonexperimental • <i>Method</i>: Survey • <i>Analysis</i>: Pearson correlation analysis, hierarchical multiple regression 	<ul style="list-style-type: none"> • Demographic variables • Involvement in hurricane Katrina • The recent life changes questionnaire (Miller & Rahe, 1997) • PTGI (Tedeschi & Calhoun, 1996) 	<ul style="list-style-type: none"> • Gratitude was positively correlated with PTG ($r = 0.20, p < .05$). • Satisfaction with life scores correlated with gratitude ($r = 0.64, p < .001$). • Social support correlated with gratitude ($r = 0.69, p < .001$) and satisfaction with life ($r = 0.58, p < .001$).

Author(s)	Participant Characteristics	Adverse Experience	Design/Method/Analysis	Outcome Measures	Main Findings (as relating to the research questions)
	<ul style="list-style-type: none"> Gender: 84 male; 27 female 			<ul style="list-style-type: none"> Interpersonal support evaluation list (Cohen & Hoberman, 1983) – measuring social support The satisfaction with life scale (Diener et al., 1985) GQ6 (McCullough et al., 2002) 	<ul style="list-style-type: none"> Regression model: neither gratitude or total life stress scores were independently associated with PTG, but their interaction was significant indicating that gratitude moderated the relationship between life stress scores and PTG. This was also found for social support and satisfaction with life variables. This account for 21% of the variance in PTG Those who presented with increased scores in gratitude, life satisfaction and social support in turn had higher PTG The higher the life stress scores and the higher the gratitude, life satisfaction and social support scores, the higher the PTG. Contradictory to other findings. Habituation to stress over time might explain why higher scores predicted PTG as they have habituated to stress over time and therefore, whilst reporting high levels of stress, this may reflect moderate levels of stress in the general population
(Lin et al., 2022)	<ul style="list-style-type: none"> N = 340 Recruited from: family members of patients in a neurosurgical 	Family members had a family member who was a patient in the neurosurgical intensive care unit	<ul style="list-style-type: none"> Design: cross sectional, nonexperimental Method: Quantitative survey provided to 	<ul style="list-style-type: none"> PTGI (Tedeschi & Calhoun, 1996) GQ6 (McCullough et al. 2002) Herth Hope Index (Herth, 1991) Connor-Davidson Resilience Scale (Connor & Davidson, 2003) 	<ul style="list-style-type: none"> 39 (11.5%) of family members reported moderate PTG; 243 (71.5%) had advanced growth PTG was significantly and positively related to gratitude ($r = 0.396, p <$

Author(s)	Participant Characteristics	Adverse Experience	Design/Method/Analysis	Outcome Measures	Main Findings (as relating to the research questions)
	<p>intensive care unit at a general tertiary hospital in Shanghai, China</p> <ul style="list-style-type: none"> • <i>Mean age (SD):</i> Family members: 42.73 (12.32); Patients: 51.34 (17.20) • <i>Gender:</i> Family members: not reported; Patients: 222 (65.3%) male; 118 (34.7%) female 		<p>patients to complete independently</p> <ul style="list-style-type: none"> • <i>Analysis:</i> Correlation, multiple linear regression (PTG as the dependent variable) 	<ul style="list-style-type: none"> • Social support rating scale (Xiao, 1994) • Demographic details 	<p>0.01), resilience ($r = 0.654, p < 0.01$), hope ($r = 0.319, p < 0.01$) and social support ($r = 0.361, p < 0.01$)</p> <ul style="list-style-type: none"> • Resilience, social support, and gratitude accounted for 54.3% of the variance in PTG scores • Appreciation for life scored as the highest factor on the PTGI (realised fragility of life) • Gratitude, social support, and resilience were found to be significant predictors of PTG. No predictive effect of hope • Resilience had the biggest influence on PTG, then social support, then gratitude. The stronger the family members gratitude, the easier it is to promote PTG • Guiding people to find meaning may be the most effective coping strategy to cultivate positive emotions when a traumatic event happens
(Manor-Binyamini, 2014)	<ul style="list-style-type: none"> • <i>N = 270</i> (180 participants were mothers of children with a developmental disability (DD), 90 had children without a DD • <i>Recruited from:</i> a community of 	<p>Some women were mothers to adolescence who had a DD</p>	<ul style="list-style-type: none"> • Design: cross-sectional, independent groups/nonexperimental as groups already existed. • Method: face to face survey delivery 	<ul style="list-style-type: none"> • Demographic characteristics • GQ6 • PTGI • Grandparents functional support questionnaire (Dunst et al., 2008) 	<ul style="list-style-type: none"> • Correlational analysis revealed that mothers who received more support reported higher levels of gratitude • Mothers of YP with DD reported more social support than mothers of YP without DD

Author(s)	Participant Characteristics	Adverse Experience	Design/Method/Analysis	Outcome Measures	Main Findings (as relating to the research questions)
	Bedouin women in Israel <ul style="list-style-type: none"> • <i>Mean age (SD)</i>: No reported mean but ages ranged from 30-59 • <i>Gender</i>: 100% Women 		<ul style="list-style-type: none"> • Analysis: correlation, MANOVA (two way) 		<ul style="list-style-type: none"> • Mothers of YP with DD reported higher levels of gratitude towards their in-laws compared with their own parents • Mothers of YP with DD reported higher personal growth than mothers of YP without DD $F(2, 172) = 17.61, p < .001$ • Researchers' hypothesise a reciprocal relationship between support and gratitude: in that support evokes feelings of gratitude in the beneficiary which then acts as an incentive for the benefactor to continue the support.
(Miragall et al., 2021)	<ul style="list-style-type: none"> • <i>N</i> = 438 • <i>Recruited from</i>: different social media networks in Spain • <i>Mean age (SD)</i>: 35.68 (13.19) • <i>Gender</i>: 78.3% women 	Study took place during a five week lockdown period	<ul style="list-style-type: none"> • <i>Design</i>: longitudinal, repeated measures/nonexperimental • <i>Method</i>: online survey via Qualtrics across two time points. T1 (first week of lockdown); T2 (fifth week of lockdown) • <i>Analysis</i>: t tests, ANOVAs, Pearson's correlations, linear mixed models, two structural equation models 	<ul style="list-style-type: none"> • The meaning in life questionnaire (steger et al., 2006;2008) • GQ6 (McCullough et al., 2002; Magallares et al., 2018) • The Connor Davidson resilience scale (Campbell-sills and stein, 2007; Notariio-Pacheco et al., 2011) • The satisfaction with life scale (Diener et al., 1985; Vazquez et al., 2013) • Perceived stress (questions made by researchers) • The patient health questionnaire-2 (Kroenke et al., 2003; Rodriguez-Munoz et al., 2017) – symptoms of depression 	<ul style="list-style-type: none"> • Significant positive correlations found between the positive functioning variables (including gratitude) and PTG dimensions. • Overall change in positive functioning variables was not statistically significantly correlated with the changes in PTG across the study • The increase in meaning in life, gratitude and resilience led to an increase in life satisfaction (50.6% of the variance) • Indirect pathway by which gratitude can influence PTG: gratitude was the best predictor of Life Satisfaction, the increase in life satisfaction led to a decrease in emotional distress which led to an increase in PTG

Author(s)	Participant Characteristics	Adverse Experience	Design/Method/Analysis	Outcome Measures	Main Findings (as relating to the research questions)
				<ul style="list-style-type: none"> The generalised anxiety disorder questionnaire-2 (Garcia-Campayo et al., 2012; Kroene et al., 2007) Positive and Negative Affect Subscale (Lopez-Gomez et al., 2015; Watson et al., 1988) PTGI-SF (Cann et al., 2010; Cardenas et al., 2015) 	<ul style="list-style-type: none"> Researchers hypothesise that increasing gratitude and resilience could decrease emotional distress and build lasting resources
(Ruini & Vescovelli, 2013)	<ul style="list-style-type: none"> <i>N</i> = 67 <i>Recruited from:</i> the breast cancer centre of the Santa Croce hospital in Loreto, Italy <i>Mean age (SD):</i> 56.6 (11.7) <i>Gender:</i> 100% women 	Participants had been diagnosed and treated for breast cancer	<ul style="list-style-type: none"> <i>Design:</i> cross-sectional, nonexperimental <i>Method:</i> Survey <i>Analysis:</i> Correlation, Chi-Squared, ANOVA 	<ul style="list-style-type: none"> GQ6 (McCullough et al., 2002) PTGI (Tedeschi & Calhoun, 1996) Psychological well-being scales (Ryff, 1989) Symptom questionnaire (Kellner, 1987) 	<ul style="list-style-type: none"> Participants were split into high gratitude (>28) and low gratitude (<28) groups. Age was a significant factor between the two groups with the low gratitude group being significantly older Patients who reported high gratitude also had high PTG Gratitude was strongly associated with PTGI, but only one PWB scale item (relations with others) Findings suggest that gratitude might be an important ingredient in PTG and could particularly be useful to target in older populations (given that the significant age differences between the high and low gratitude groups)
(Strack et al., 2010)	<ul style="list-style-type: none"> <i>N</i> = 128 <i>Recruited from:</i> Rehabilitation Centre in Northern Germany 	Patients with cancer	<ul style="list-style-type: none"> <i>Design:</i> cross-sectional, nonexperimental <i>Method:</i> survey (questionnaires handed out at clinic), some 	<ul style="list-style-type: none"> PTGI The Big 5 inventory Emotion regulation questionnaire (translated) GQ6 (translated) 	<ul style="list-style-type: none"> Openness, re-appraisal, and gratitude were positively related to PTG Reappraisal accounted for 22% of variance in PTG

Author(s)	Participant Characteristics	Adverse Experience	Design/Method/Analysis	Outcome Measures	Main Findings (as relating to the research questions)
	<ul style="list-style-type: none"> • <i>Mean age (SD):</i> 55 (12) • <i>Gender:</i> 77 female; 51 male 		<ul style="list-style-type: none"> aspects retrospective (e.g., listing priorities as they were before a cancer diagnosis, and listing them now) • <i>Analysis:</i> correlation, multiple regression analysis, paired-sample t-test 	<ul style="list-style-type: none"> • Life priorities (assessed by a series of questions) 	<ul style="list-style-type: none"> • Priorities relating to health, self, and philosophy were most highly reported after cancer. The observed change in life priorities indirectly supports the theory of action growth which suggests that real PTG is only achieved when positive cognitions are translated into actions. Following a cancer diagnosis, people reported experiencing new things, engaging in different activities, and taking more time for themselves • Re-appraising emotions may be important for the experience of PTG as one may experience a sense of control the environment and they can make sense of their experiences and draw out positive aspects
(Su et al., 2020)	<ul style="list-style-type: none"> • <i>N</i> = 116 • <i>Recruited from:</i> direct experience of an explosion recruited from either their physicians or self-referral • <i>Mean age (SD):</i> 24.0 (4.3) • <i>Gender:</i> 62.9% female 	Post-burn survivors of the Formosa Fun Coast Water Park Explosion in 2015	<ul style="list-style-type: none"> • <i>Design:</i> cross-sectional, nonexperimental • <i>Method:</i> survey 2 years following the adverse experience • <i>Analysis:</i> bivariate correlation, hierarchical regression 	<ul style="list-style-type: none"> • PTGI-X (Tedeschi et al., 2017) • Burn Characteristics (including % of burns, locus of burn and length of hospital stay) • The belief violation questionnaire (Sue & Chen, 2014) • The deliberate rumination inventory (Cann et al., 2011) • Trauma disclosure (questions created by researchers) • The crisis support scale (Joseph et al., 1992) 	<ul style="list-style-type: none"> • All positive personality traits (gratitude, resilience, forgiveness) were significantly correlated with PTG in postburn survivors. Specifically, gratitude significantly positively correlated with PTG ($r = .56, p < .001$) and had the highest correlation with PTG, compared to resilience and forgiveness. • Positive personality attributes significantly accounted for 31.7% of the variance of PTG in postburn survivors

Author(s)	Participant Characteristics	Adverse Experience	Design/Method/Analysis	Outcome Measures	Main Findings (as relating to the research questions)
				<ul style="list-style-type: none"> The brief resilience scale (smith et al., 2008) GQ6 (McCullough et al., 2002) The Heartland Forgiveness Scale (Thompson et al., 2005) 	<ul style="list-style-type: none"> Gratitude ($p = .011$), years of education ($p = .022$), deliberate rumination ($p = .000$), and perceived social support ($p = .001$), significantly predicted PTG in postburn survivors. Gratitude was the only positive personality attribute that significantly predicted PTG Gratitude did not moderate the relationship between DR and PTG Resilience (low/moderate) significantly moderated the relationship between deliberate rumination and PTG Forgiveness (low/moderate) significantly moderated the relationship between trauma disclosure and PTG Researchers hypothesise that for PTG to emerge, burn injuries must pose a serious physical threat and impact daily functioning Researchers explored PTG at an individual item level to account for those who may have made marked PTG, but only in some areas
(Vazquez et al., 2022)	<ul style="list-style-type: none"> $N = 448$ (47% Protestant; 53% Catholic/Eastern Orthodox Christian affiliation) 	Identified as having a history of trauma by answering yes to at least one question on the trauma	<ul style="list-style-type: none"> <i>Design:</i> cross-sectional, nonexperimental <i>Method:</i> survey <i>Analysis:</i> Parallel mediation analysis 	<ul style="list-style-type: none"> Attachment to God inventory Beck & McDonald, 2004) Christian gratitude scale (Knabb et al. 2021) 	<ul style="list-style-type: none"> Christian gratitude was significantly positively associated with PTG ($r = .24$, $p < .01$) and significantly negatively associated with anxious ($r = -.23$, p

Author(s)	Participant Characteristics	Adverse Experience	Design/Method/Analysis	Outcome Measures	Main Findings (as relating to the research questions)
<ul style="list-style-type: none"> • <i>Recruited from:</i> Amazon MTurk Marketplace in the USA • <i>Mean age (SD):</i> 37.96 (11.25) • <i>Gender:</i> 52.2% male, 47.8% female 	<p>history questionnaire</p>	<p>using PROCESS, correlation</p>	<ul style="list-style-type: none"> • Event related rumination inventory (Cann et al., 2011) • PTGI (Tedeschi & Calhoun, 1996) • Trauma history questionnaire (Hooper et al., 2011) 	<p>< .01) and avoidant ($r = -.59, p < .01$) attachment to God</p> <ul style="list-style-type: none"> • Those who attended church scored significantly higher on Christian gratitude, PTG, DR and anxious attachment to God • Christians scored higher on anxious and avoidant attachment to God, DR, whereas protestants score higher in Christian gratitude • Males scored significantly higher on anxious and avoidant attachments to God • Christian gratitude and avoidant attachment to God did not mediate the relationship between DR and PTG, but anxious attachment did. DR and PTG also had a direct significant relationship • DR, Christian gratitude, and anxious attachment to God accounted for 29% of the variance • Post hoc analysis revealed that anxious attachment to God (positively) and Christian gratitude (negatively) mediated the relationship between IR and PTG, but avoidant attachment did not • Researchers argue that findings make sense in the light of theory and research which suggests that anxiously 	

Author(s)	Participant Characteristics	Adverse Experience	Design/Method/Analysis	Outcome Measures	Main Findings (as relating to the research questions)
(Vieselmeier et al., 2017)	<ul style="list-style-type: none"> • <i>N</i> = 359 • <i>Recruited from:</i> students, faculty and staff enrolled/employed during a school shooting (majority of participants were students) in the USA (Seattle, Washington) • <i>Mean age (SD):</i> 27.26 (12.61) • <i>Gender:</i> 75% female; 25% male 	<p>Employed or enrolled at the university during a campus shooting in the pacific northwest in 2014.</p> <p>28 (5.9%) of participants were in the building where the shooting occurred</p>	<ul style="list-style-type: none"> • <i>Design:</i> cross-sectional, nonexperimental • <i>Method:</i> online survey, four months following the shooting • <i>Analysis:</i> correlation, moderation mediation analysis 	<ul style="list-style-type: none"> • Demographic variables • The brief trauma questionnaire (Schnurr et al. 2002/1995) • Trauma exposure questions developed by researchers – adapted from Hughes et al., (2011) • Posttraumatic stress disorder checklist-civilian (Weathers et al. 2014) • PTGI (Tedeschi & Calhoun, 1999/2004) • The Connor-Davidson Resilience Scale (Connor & Davidson, 2003) • GQ6 (McCullough, 2002) 	<p>attached individuals are more likely to seek proximity to an attachment figure during times of distress than avoidantly attached individuals</p> <ul style="list-style-type: none"> • Different construct definitions of gratitude could account for why gratitude was not a mediating factor in this study. Gratitude to God transcends being grateful for the general good things in life and focuses on the goodness of God. The CGS is multi-dimensional focusing on thoughts, feelings, behaviours, and attitudes, whereas other studies conceptualise gratitude as a unidimensional construct <ul style="list-style-type: none"> • PTS was significantly negatively correlated with resilience ($r = -.270$) and gratitude ($r = -.193, p < .001$) • Gratitude was positively correlated with PTG but not significantly • Participants who experienced greater degrees of trauma had greater PTS and therefore greater PTG • Resilience significantly moderated the effect of trauma exposure on PTS (high resilience = a reduced relationship between trauma exposure and PTS) • Gratitude significantly moderated the effect of PTS on PTG (high gratitude =

Author(s)	Participant Characteristics	Adverse Experience	Design/Method/Analysis	Outcome Measures	Main Findings (as relating to the research questions)
		244 (57.9%) were in proximity (i.e., on campus, but not in the building)			the relationship between PTS and PTG strengthened)
		109 (26.2%) were in Seattle, Washington but not on campus			<ul style="list-style-type: none"> • The highest level of PTG was observed in participants who were low in resilience, high in PTS and high in gratitude.
		44 (9.5%) reported not being in Seattle			<ul style="list-style-type: none"> • Researchers suggest that resilience and gratitude can be conceptualised as trait-like protective mechanisms with resilience looking to prevent negative outcomes of trauma (e.g., PTS) and gratitude as an adaptive mechanism in response to any adverse symptoms experienced as part of the trauma
(Wang & Wu, 2020)	<ul style="list-style-type: none"> • <i>Number of participants (n):</i> T1: 542; T2: 407 • <i>Recruited from:</i> Two middle schools in Lushan County, China • <i>Mean age (SD):</i> T1: 14.07 (1.59); T2: 15.16 (1.56) • <i>Gender:</i> T1: 243 (45.8%) male, 287 (54.2%) female, 12 (2.2%) unknown gender; T2: 181 (44.5%) male, 226 (55.5%) female. 	Direct experience of the Ya'an earthquake in 2013	<ul style="list-style-type: none"> • <i>Design:</i> Longitudinal, nonexperimental • <i>Method:</i> quantitative survey at two timepoints: T1: 3.5 years' post-earthquake; T2: 4.5 years' post-earthquake • <i>Analysis:</i> Correlation, Structural equation modelling (SEM) 	<ul style="list-style-type: none"> • Trauma exposure questionnaire (Wu et al. 2013) • Belief in altruism scale (Wrightsmann, 1974) • Interpersonal reactivity index (Davis, 1980) • Gratitude Questionnaire-6 (GQ6; McCullough et al. 2002) • Social support questionnaire (Zou, 1999) • Posttraumatic growth inventory (PTGI) revised by Zhou et al. (2014) • Prosocial behaviour questionnaire (Zhang and Kou, 2011) 	<ul style="list-style-type: none"> • Empathy could predict gratitude ($p < 0.001$), social support ($p < 0.001$) and PTG ($p = 0.01$) • T2 gratitude was significantly and positively correlated to T2 PTG ($r = 0.37$, $p < 0.001$) • Empathy predicted prosocial behaviour through a chain mediating effect of gratitude, social support and PTG • Gratitude predicted prosocial behaviour indirectly through enhancing PTG • Gratitude positively predicted social support ($p < 0.001$), PTG ($p < 0.001$) and prosocial behaviour ($p < 0.001$)

Author(s)	Participant Characteristics	Adverse Experience	Design/Method/Analysis	Outcome Measures	Main Findings (as relating to the research questions)
(Wang et al., 2018)	<ul style="list-style-type: none"> • <i>N</i>: 706 • <i>Recruited from</i>: one middle school and one high school in Lushan County, China • <i>Mean age (SD)</i>: 14.12 (1.65) • <i>Gender</i>: 380 (53.8%) female; 325 (46.1%) male; 1 unreported 	Direct experience of the Ya'an earthquake in 2013 with approximately 20% of participants being injured or trapped	<ul style="list-style-type: none"> • <i>Design</i>: cross-sectional nonexperimental • <i>Method</i>: quantitative survey, 3.5 years' post-earthquake • <i>Analysis</i>: Correlation, SEM 	<ul style="list-style-type: none"> • Trauma exposures questionnaire (Wu et al., 2013) • Interpersonal guilt questionnaire (O'Connor et al., 1997) • GQ6 adapted by Wei et al. (2011) • Social support questionnaire (Zou, 1999) • PTSD Checklist (Weathers, 2013) • PTGI adapted by Zhou et al. (2014) 	<ul style="list-style-type: none"> • Summary of findings: experience of trauma = empathy enabled participants to feel grateful for support which helped them to harness social support which in turn strengthened PTG and enhanced pro social behaviours • Gratitude positively correlated to PTG ($r = 0.30, p < 0.001$) and negatively correlated to PTSD ($r = -0.10, p < 0.01$) • Survivor guilt was a significant predictor of PTSD • Gratitude mediated the relationship between survivor guilt and PTSD (negative effect) and survivor guilt and PTG (positive effect) • Social support mediated the effect of survivor guilt on PTG but not PTSD • Survivor guilt effected PTG via gratitude, following social support • Gratitude and social support play different roles in the effect of guilt on PTSD and PTG
(Zeligman et al., 2021)	<ul style="list-style-type: none"> • <i>N</i> = 151 • <i>Recruited from</i>: undergraduate students from a southern university in the USA. 	Participants reported surviving a large number of trauma experiences including accidents, natural disasters, physical, and/or	<ul style="list-style-type: none"> • <i>Design</i>: cross-sectional, nonexperimental • <i>Method</i>: quantitative online survey • <i>Analysis</i>: correlation, multiple regression, ANOVAs, and t tests 	<ul style="list-style-type: none"> • Adult State Hope Scale (Snyder et al., 1996) • GQ6 (McCullough et al., 2002) • Life Orientation Test Revised (Optimism; Scheier et al. 1994) • The PTSD Checklist-Civilian Version (Weather et al. 1994) 	<ul style="list-style-type: none"> • Gratitude, hope, and optimism were all significantly and positively correlated with PTG and negatively with PTSD suggesting that they all buffer PTSD symptoms and promote growth. Specifically, gratitude significantly

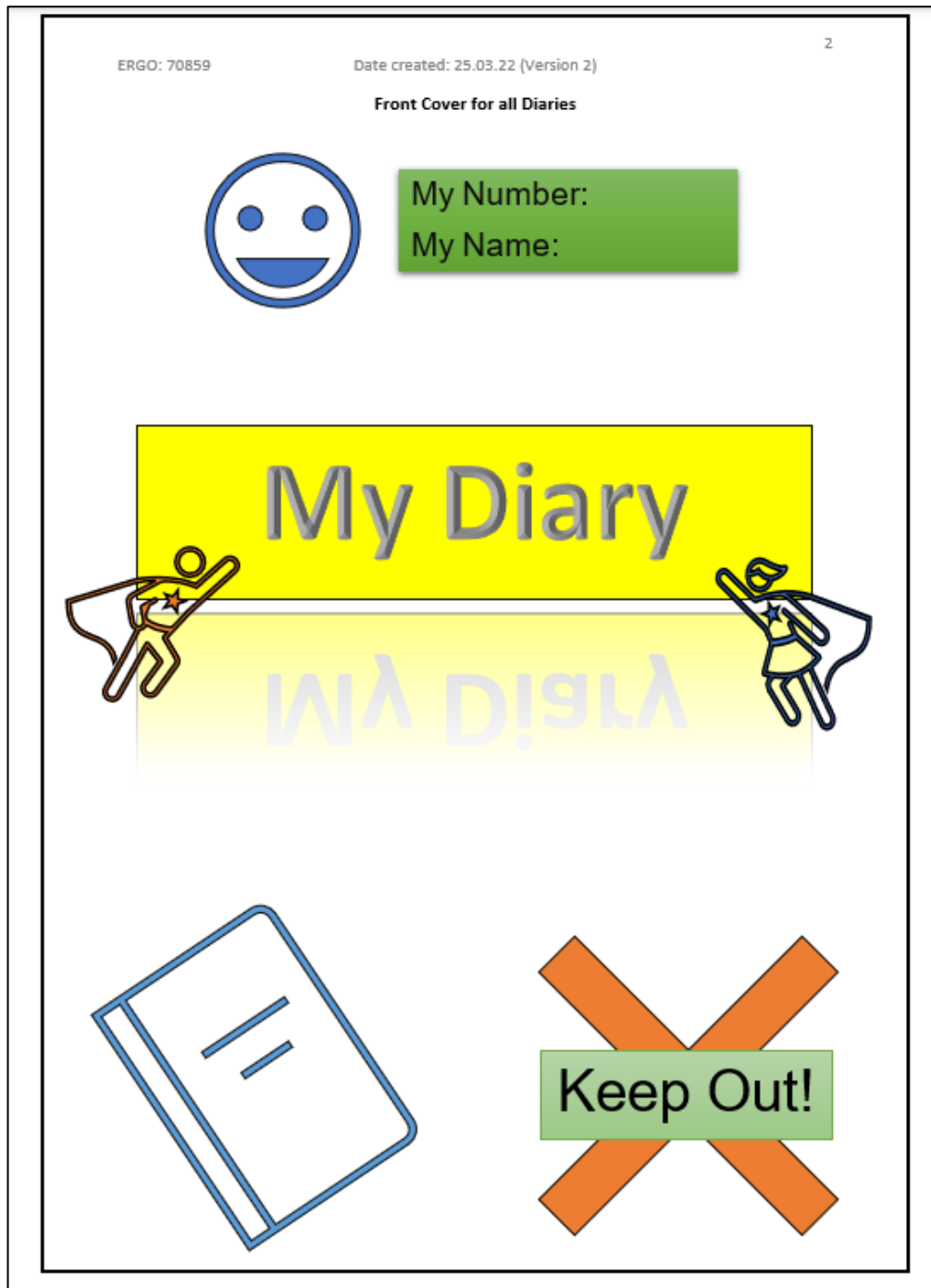
Author(s)	Participant Characteristics	Adverse Experience	Design/Method/Analysis	Outcome Measures	Main Findings (as relating to the research questions)
	<ul style="list-style-type: none"> • Mean age (SD): 22.81 (3.84) (range 18-41) • Gender: 93 (61.6%) female; 58 (38.4%) male 	sexual abuse as a child/adult, being attacked with a weapon, sudden death of close family member or friend, seeing someone die or be badly injured, sudden abandonment, other		<ul style="list-style-type: none"> • PTGI (Tedeschi & Calhoun, 1996) 	<ul style="list-style-type: none"> positively correlated with PTG ($r = .33$, $p < .001$). • Gratitude and optimism did not significantly influence PTG which is contradictory to other findings. Researchers wondered whether this could be due to the outcome measures not reflecting how the sample population (young people) experience optimism and gratitude. • All variables combined accounted for 21.9% of the variance in PTG scores, however, only hope was a significant predictor variable. • Given the significance of hope, this suggests there is a need to consider spirituality and religious beliefs in support college students. • Women experienced more PTSD symptoms than men.
(Zhou & Wu, 2015)	<ul style="list-style-type: none"> • <i>N</i>: T1: 217; T2: 200 (92.2% of original sample); T3: 157 (72.4% of original sample) • <i>Recruited from</i>: two middle schools in Wenchaun County, China 	Direct experience of the Wenchaun earthquake	<ul style="list-style-type: none"> • <i>Design</i>: longitudinal, nonexperimental • <i>Method</i>: quantitative survey across three time points. T1: 3.5 years' post-earthquake; T2: 4.5 years' post-earthquake; T3: 5.5 years' post-earthquake 	<ul style="list-style-type: none"> • GQ6 (McCullough et al. 2002, adapted by Zhou et al., 2014) • Modified Event related Rumination Inventory (Cann et al., 2011 – adapted by Zhou et al., 2014) • PTGI (Tedeschi & Calhoun, adapted by Zhou et al., 2014) 	<ul style="list-style-type: none"> • Gratitude was significantly positively correlated with PTG at T1, T2 and T3. Gratitude at T1 significantly predicted PTG at T2, and gratitude at T2, significantly predicted PTG at T3, suggesting a positive longitudinal relationship between gratitude and PTG • Gratitude, DR and PTG were associated with each other at T1 and T2

Author(s)	Participant Characteristics	Adverse Experience	Design/Method/Analysis	Outcome Measures	Main Findings (as relating to the research questions)
(Zhou & Wu, 2016)	<ul style="list-style-type: none"> • <i>Mean age (SD)</i>: T1: 14.18 (1.39); T2: not reported; T3: not reported • <i>Gender</i>: T1: 109 (50.2%) female; 108 (49.8%) male; T2: not reported; T3: not reported 	Direct experience of the Ya'an earthquake in 2013	<ul style="list-style-type: none"> • <i>Analysis</i>: correlation, SEM (cross-lagged pathways) • <i>Design</i>: longitudinal, nonexperimental • <i>Method</i>: quantitative survey across two time points. T1: 0.5 years' post-earthquake; T2: 1.5 years' post-earthquake 	<ul style="list-style-type: none"> • GQ6 adapted by Wei et al. (2011) • Social net questionnaire (Zou, 1999) • PTGI revised by Zhou et al. (2014) 	<ul style="list-style-type: none"> • As well as a direct relationship, gratitude at T1 also predicted PTG at T3 through DR at T2, suggesting an indirect, mediating relationship between the variables. • DR at T2, significantly predicted PTG at T3. • PTG did not predict gratitude across T1-T3 but predicted DR between T1 and T2. Authors link this to the Janus-face model of PTG where participants may be finding meaning from their experience and therefore linking DR and PTG, but PTG did not predict DR between T2-T3 -- another earthquake had happened during this time which researchers felt might have accounted for the loss of the predictive relationship as the new trauma may have influenced PTG scores • Gratitude (and social support) represent stable and positive predictors of cross-sectional PTG. Gratitude significantly predicted PTG at T1 ($p < 0.001$), and T2 ($p < 0.001$) • Gratitude mediates the relationship between social support and PTG • Social support at T1 predicted gratitude at T2, but gratitude T1 did not predict social support at T2 which

Author(s)	Participant Characteristics	Adverse Experience	Design/Method/Analysis	Outcome Measures	Main Findings (as relating to the research questions)
	<ul style="list-style-type: none"> • <i>Mean age (SD)</i>: T1: 14.62 (1.80); T2: Not reported • <i>Gender</i>: T1 = 167 (53%) female; T2: 148 (47%) male; T2: not reported 		<ul style="list-style-type: none"> • <i>Analysis</i>: correlation, SEM (cross-section and cross-lagged pathways) 		contradicts previous findings of the link between social support and gratitude

Appendix E Diaries

E.1 Front Cover




E.2 Event Diary (Control Group)

ERGO: 70859 Date created: 25.03.22 (Version 2) 3

Event Diary Template

Instructions

It can be really helpful to keep a record of things that have happened during the day...




Your task is to keep a daily diary for 15 days to write about **3 things** that have happened during your day at school.

Write a sentence each about 3 small things that have happened at school today. Write about new things each day.

For example:

1. I had a sandwich for lunch
2. I played outside a break time because it was sunny
3. I got my English homework back

ERGO: 70859 Date created: 25.03.22 (Version 2)



Write down 3 things that have happened at school today...

1.

2.

3.

E.3 Negative Reinforcement Gratitude Diary (Experimental Group)

ERGO: 70859 Date created: 25.03.22 (Version 2) 5

Gratitude Diary – Negative Reinforcement Template

Instructions

It is important to be thankful. Being thankful may help us to become better people. Let's see what you are thankful for today...

Your task is to keep a daily diary for 15 days to write about **3 things** you are thankful for which have happened during your day at school.

Write a sentence each about 3 small things that have happened in your school day that you are thankful for. Write about new things each day.

For example:

1. I am thankful for my teacher who helped me when I had a question
2. I am thankful for my friend who let me borrow a pencil when I didn't have one
3. I am thankful for the sunshine today because it made my face feel nice and warm

ERGO: 707 Date created: 25.03.22 (Version 2) 6

Write down 3 things that have happened today which you are thankful for...

1. I am thankful ...

2. I am thankful...

3. I am thankful...


E.4 Positive Reinforcement Gratitude Diary (Experimental Group)

ERGO: 70859 Date created: 25.03.22 (Version 2) 7

Gratitude Diary – Positive Reinforcement Template

INSTRUCTIONS

Sometimes it is good to think about things that make you feel thankful. These thoughts are like jewels in a treasure chest. Even the smallest jewels are precious.



Your task is to keep a daily diary for 15 days to write about **3 things** you are thankful for which have happened during your day at school.

Write a sentence each about 3 small things that have happened in your school day that you are thankful for. Write about new things each day.

For example:

4. I am thankful for my teacher who helped me when I had a question
5. I am thankful for my friend who let me borrow a pencil when I didn't have one
6. I am thankful for the sunshine today because it made my face feel nice and warm

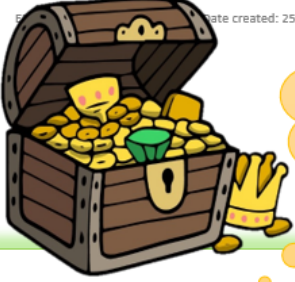


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Date created: 25.03.22

Write down 3 things that have happened today which you are thankful for...

4. I am thankful ...

5. I am thankful...

6. I am thankful...

Appendix F Consent Forms

F.1 School Consent Form

Research Information and Consent for Schools

Dear Head Teacher,

My name is Stephanie Bowen, and I am a Trainee Educational Psychologist at the University of Southampton. I would like to invite your school to take part in a research study that I am conducting which aims to investigate whether the way in which gratitude diaries are written and presented to children impacts their effectiveness at increasing gratitude, a sense of school belonging and positive emotions. Your school may also be invited to participate in a separate, follow up study which seeks to interview a small number of children who have taken part in this study to see how they felt about filling in the diary. By agreeing to this study, you would also be agreeing for children to be identified for interview later on, however parents will be sent a separate consent form should any child from your school be identified for a follow up interview.

To help you decide whether you would like your school to take part, it is important that you understand why the research is being done and what it will involve; details of the study are explained below.

Study Title: An Initial Exploration of what makes a gratitude diary successful

Researcher: Stephanie Louise Bowen

ERGO number: 70859, **Date:** 25.03.22 **Version:** 2

Who has been asked to take part?

This study is designed to be a whole class project; It involves classes of children in Years 3, 4 and 5. I am hoping to find out whether specific elements of gratitude diaries (i.e., the way they are written and presented to children) impact their effectiveness on a child's feeling of gratitude, their sense of belonging in school and their positive emotions.

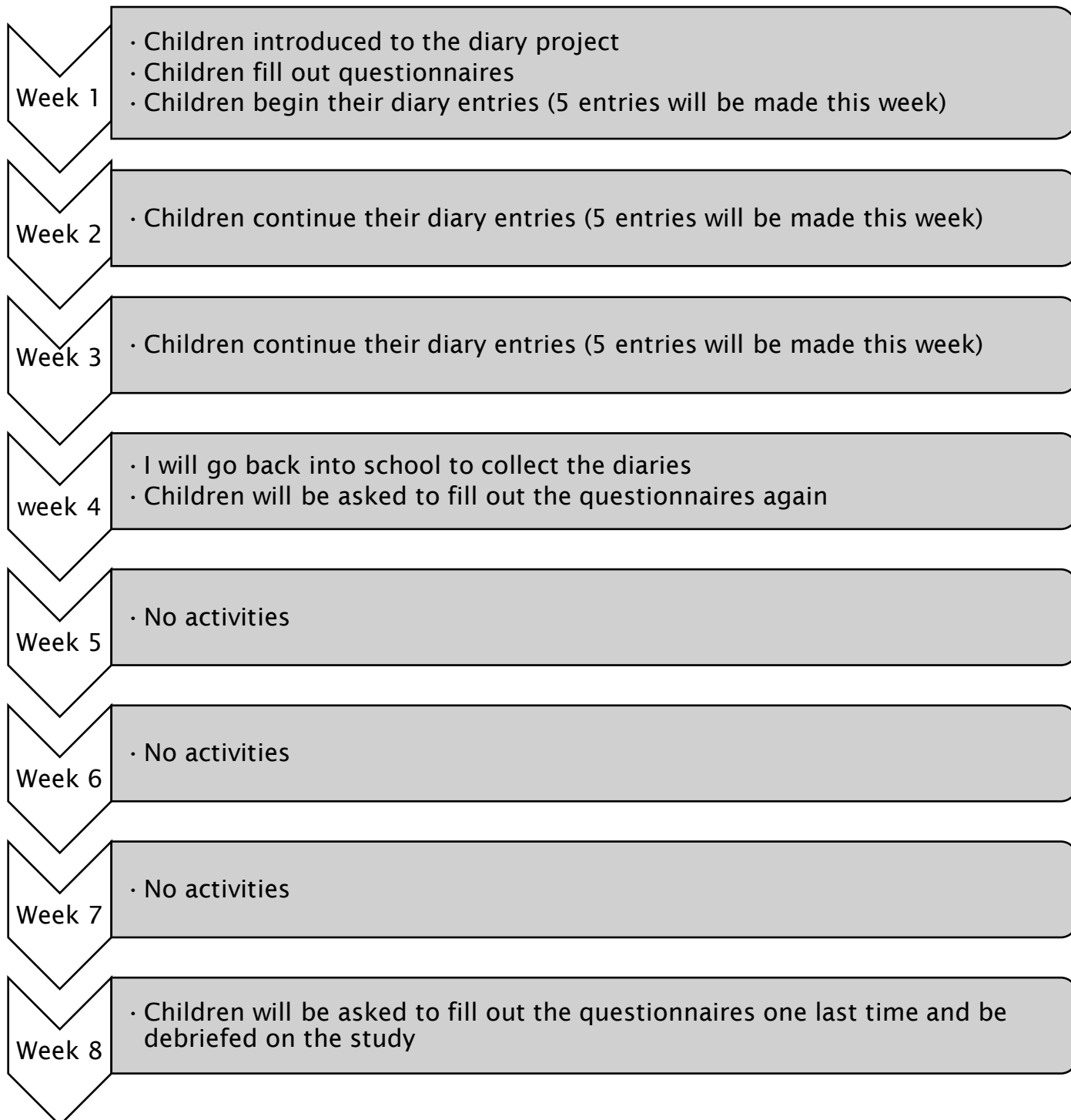
What does the research involve?

Prior to beginning their diaries, I will lead a whole-class session where the children will be asked to fill out four short, self-rated questionnaires. These questionnaires explore gratitude, positive emotions and a sense of school belonging. The children will then be split into three groups, and they will fill out their diaries together each day over a three week period. The diary activity should take approximately 5-10 minutes. The diaries will only be completed at school; the children will not have to take these home to complete at the weekend.

After the three week intervention, I will collect the diaries the children have filled in, they will **not** be analysed for their content, but diaries will be screened to ensure there are at least 10 diary entries, and a percentage will be checked to make sure that children have written their entries as they were asked to. When I collect the diaries from school, I will lead another whole-class questionnaire session, to ask the children to complete the short questionnaires again.

After a further four weeks, I will return to school to lead a final whole-class session, to ask the children to fill out the same questionnaires one last time. This will allow me to see if any impact of the intervention has lasted over a period of time. Please see the diagram below for an approximate timeline of the full project process.

May I ask that any children who need additional support to fill out these questionnaires in line with their normal way of working receive such support from school.



Are there any benefits for children taking part?

The aim of this project is to explore if gratitude diaries increase children's feelings of gratitude, their sense of school belonging and their feelings of positive emotions. This

is an area of great interest to Educational Psychologists to help us understand how to make gratitude diaries as successful as possible. The findings of the project will be fed back to you once the study has ended and the results analysed; we hope you will find them useful if you would like to implement this intervention for any children in the future.

The study is underpinned by positive psychology research, and we hope that it will contribute to the overall wellbeing to the children in your school.

Are there any risks to children being involved?

The research is designed to be low risk, but it might be that some children feel uncomfortable writing in their diary or would like to talk to someone they trust about something they have written in their diary or any worries or concerns that they may have. Before the study begins I would like to work with you to identify a person within school that you would be happy for children to go to should they wish to speak to someone about their diary.

What data will be collected from children and how will it be stored and used?

Apart from their diary entries, children will be asked to provide their name (which will later be initially pseudonymised and then anonymised, please see below), their age and their gender.

Once the children have completed their questionnaires, their names will be removed from them and replaced with a corresponding ID number. This means that the children's names will not appear on the questionnaires when they are taken off school site. Similarly, when the diaries are collected, these will also be pseudonymised with the same ID number. Therefore, children's names will not be on any documentation that leaves the school.

A printed spreadsheet will be kept securely in school, in line with your data protection policy, which keeps a record of children's names and their corresponding ID numbers, this is to ensure that if any safeguarding concerns are raised, or a child wishes to stop being involved in the study, their data can be retrieved or removed as necessary. The hard copies of the diaries and questionnaires that are taken off school site by the researcher will be stored in a lockable and secure container. They will be scanned and saved onto a computer at the earliest point possible and will be saved on a secure university storage account. After they have been scanned into the computer, the original hard copies will be destroyed.

During data analysis, the data may be shared with my research supervisors and collaborators for the purpose of supporting accurate data analysis, but due to the data being pseudo anonymised my supervisors will not be able to connect the data with your school. Adding to this, responsible members of the University of Southampton may be given access to the data for monitoring purposes and/or to carry out an audit of the study to ensure that the research is complying with applicable regulations. Individuals from regulatory authorities (people who check that we are carrying out the study correctly) may require access to the data. All these people have a duty to keep children's information, as a research participant, strictly confidential.

After the research study has ended, the spreadsheet with children's names and corresponding ID numbers will be destroyed, removing all connection of children to the data meaning the data will be fully anonymised. The findings of the study will be written up and disseminated more widely where appropriate, but no data will be published that connects your school, or your children, to the project.

What will happen in the follow up study?

A small number of children will be asked to participate in a follow up study, to talk about their experiences of participating in the gratitude diary intervention. This will support our understanding of how to design future gratitude diaries and ensure they are effective. Children who are invited to take part will be asked to participate in a short interview with the researcher, Rosalind Keefe, a trainee educational psychologist. This will involve the child answering a few questions about their experiences. For example, asking them to describe aspects of the intervention that they enjoyed or did not enjoy. The interview will take up to 30 minutes. Rosalind will ensure that all interviews are anonymised so that the children who have participated cannot be identified. Parents will be contacted separately by Rosalind to gain their consent for their child to take part in the follow up study, should their child be selected.

What will happen to the results/findings of the research?

As mentioned previously, children's personal details will remain anonymous, with only those who are deemed necessary having access to the data (i.e., myself and my supervisors). No details of your school will be shared. The data from the study will be held on the 'Pure' data repository at the University of Southampton. Research findings made available in any reports or publications will not include information that can directly identify children or their school. It is hoped that the findings of the study will be useful to your school. It is also possible that the study's findings may be presented in an academic journal.

What if parents do not wish for their child to take part?

If you consent to your school taking part in the project, parents/carers will be sent an information letter about the study, similar to this one, and an opt-out consent form. This means that unless parents return the consent form, it will be assumed by the researcher that they consent for their child to take part. Parents/carers have the right to withdraw their child from the research at any point by telling their teacher. Similarly, children have equal rights to change their mind about taking part in the study. Children will be asked to assent to the study, but they can also withdraw this at any point by telling their teacher or parents/carers if they do not wish to take part.

Please note, if a child is selected for the qualitative follow up study, their parents will be contacted separately, and asked to provide opt-in consent for their child to take part in an interview.

Where can I get more information, or go to if I am concerned?

If you have any complaints, concerns or questions about the research please feel free to contact me (Stephanie Bowen, the researcher) on the following email address: s.l.bowen@soton.ac.uk

The research is supervised by Dr Colin Woodcock (C.Woodcock@soton.ac.uk) and Dr Catherine Brignell (C.Brignell@soton.ac.uk) from the University of Southampton.

In the unlikely case that something goes wrong in this study we advise you to contact the Head of Research Governance, University of Southampton, rgoinfo@soton.ac.uk, +44 (0) 2380 595058

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

Data Protection Privacy Notice

The University of Southampton conducts research to the highest standards of research integrity. As a publicly-funded organisation, the University has to ensure that it is in the public interest when we use personally-identifiable information about people who have agreed to take part in research. This means that when you agree to take part in a research study, we will use information about you in the ways needed, and for the purposes specified, to conduct and complete the research project. Under data protection law, 'Personal data' means any information that relates to and is capable of identifying a living individual. The University's data protection policy governing the use of personal data by the University can be found on its website (<https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-foi.page>).

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

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

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

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

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

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

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

Thank you.

Thank you for taking the time to read this information sheet and for considering your school participation in the above study.

I provide permission for my school to take part in this research study and subsequent follow up study. I confirm that any personal data collected as part of the project will be held securely in school in line with our data protection policy and regulation.

I provide permission for opt-out consent to be gained from parents for the first part of this study.

Name: _____

Role at School: _____

(If not the Head Teacher, please confirm by ticking this box that you have permission from the Head Teacher to sign this consent form on their behalf)

I have permission from the Head Teacher to sign this consent form:

Name of School: _____

Date: _____ Signature: _____

F.2 Parent/Carers Consent Form (Shortened Accessible Version)

Research Information and Consent for Parents/Carers

Study Title: An Initial Exploration of What Makes a Gratitude Diary Successful

Researcher: Stephanie Louise Bowen

ERGO number: 70859

Date: 13.05.22 **Version:** 3

Dear Parent/Carer,

My name is Stephanie Bowen, and I am a Trainee Educational Psychologist at the University of Southampton. I would like to invite your child to take part in a research study that I am doing which aims to investigate whether the way gratitude diaries are written and presented to children impacts on their effectiveness at increasing gratitude, a sense of school belonging and emotions.

To help you decide whether you would like your child to take part, it is important that you understand why the research is being done and what it will involve. Details of the study are explained below.

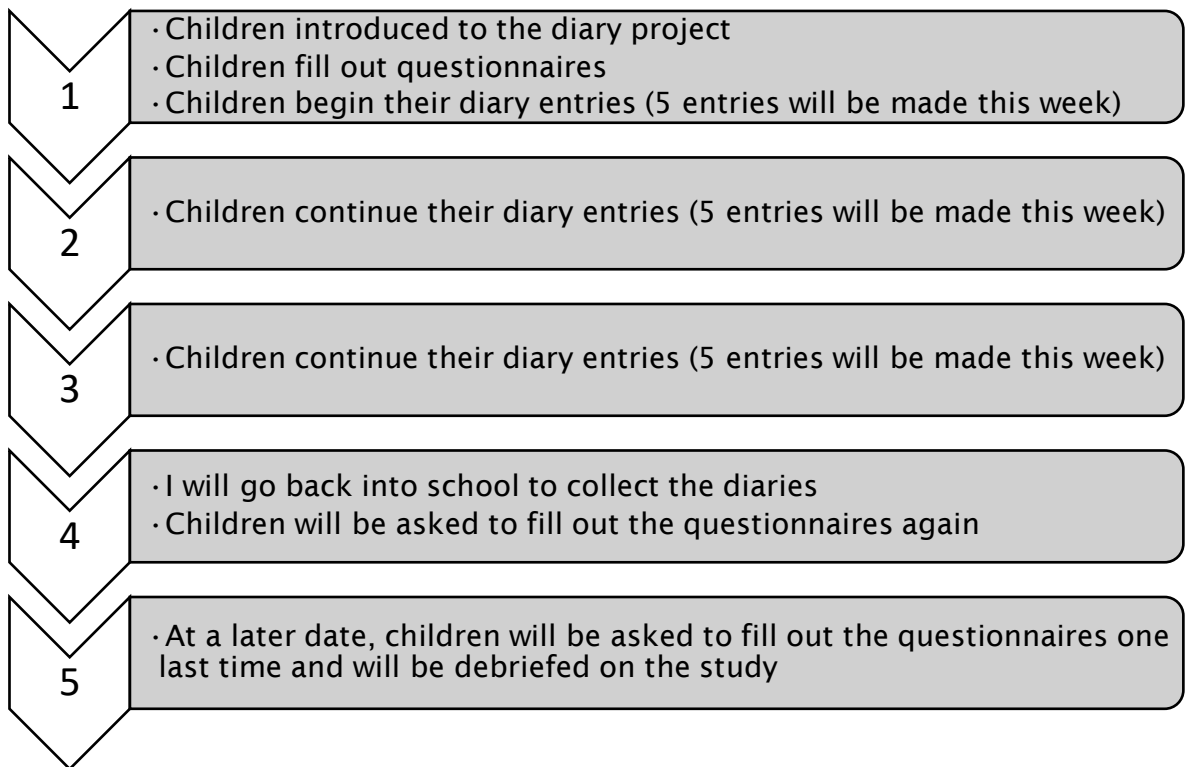
Why has my child been asked to participate?

- This study is designed to be a whole class project for children in Years 3, 4 and 5.
- I am hoping to find out whether specific elements of gratitude diaries impact their effectiveness on a child's feeling of gratitude, sense of school belonging and emotions.

What will happen to my child if they take part?

- First, children will be asked to fill out four short questionnaires, at school. This will be supported by familiar adults they work with in the classroom.
- Then, children will be split into three groups, and they will fill out their diaries together each day over a three week period.
 - The diary activity should take approximately 5-10 minutes.
 - The diaries will only be completed at school; the children will not have to bring them home to complete at the weekend.
- After three weeks, I will collect the diaries the children have filled in.
 - When I collect the diaries from school the children will be asked to complete the short questionnaires again.
- At a later date, I will return to school to ask the children to fill out the same questionnaires one last time. Please see diagram below for an overview of the process.
- Your child may also be selected to participate in a follow up interview after the study has finished. You will be asked to give permission for your child to take part, should they be selected for this.

Flow Chart of the Study:



Are there any benefits in my child taking part?

- We hope that the study will contribute to your child's overall wellbeing.
- Using gratitude diaries to increase wellbeing is an area of great interest to Educational Psychologists and schools, and it will be helpful to know how we can make gratitude diaries as successful as possible.
- The results of the project will be fed back to your child's school once the study has ended.

Are there any risks to my child being involved?

- The research is designed to be low risk.
- Some children may feel uncomfortable writing in their diary or may like to talk to someone they trust about something they have written in their diary, or any worries or concerns that they may have. Children will be made aware of who they can go to in school if they would like to speak to someone about their diary.

What data will be collected from my child and how will it be stored and used?

- In addition to completing their diaries children will be asked to provide their name, age and gender. Names will later be removed and replaced with an ID number so it will not be possible to connect your child to the study.
- A spreadsheet will be kept in school which keeps a record of children's names and their corresponding ID numbers: this is to ensure that if any safeguarding concerns are raised, or your child wishes to stop being involved in the study, their data can be retrieved or removed.

- This spreadsheet will be kept securely by a key contact at school and not by the researcher.
- After the study this spreadsheet will be destroyed.
- During data analysis, the data may be shared with my research supervisors and collaborators for the purpose of supporting accurate data analysis, but they will not be able to identify your child from the information (because children's names will have been removed by this point).
- The findings of the study will be written up and disseminated more widely where appropriate, but no data will be published that connects your child to the project.

What will happen to the results/findings of the research?

- The anonymised data from the study will be held on the 'Pure' data repository at the University of Southampton.
- The results may be put into a report, or published in an academic journal, but no details of your child will be shared.

Does my child have to participate in the study?

- No.
- If you **DO NOT** want your child to take part in this study please sign and return the slip below.
- If your child starts the study but then decides at any point that they do not wish to take part any more they can stop without needing to give a reason.
- If you consent to your child participating (i.e., if you do NOT return the form) your child will still be asked to assent to taking part in the study when it starts. This means that your child will be asked if they want to take part. If they do, they will be included in the project. If they do not, they will be asked to write their name on a form to record that they do not want to be included.

Where can I get more information, or go to if I am concerned?

- If you have any complaints, concerns or questions about the research please feel free to contact me (Stephanie Bowen, the researcher) on the following email address: s.l.bowen@soton.ac.uk.
- The research is supervised by Colin Woodcock (c.woodcock@soton.ac.uk) and Dr Catherine Brignell (C.Brignell@soton.ac.uk) from the University of Southampton, who you may also contact about this research.
- The following contact details can be used if you remain unhappy, or have a complaint about the study:
 - The chair of the Ethics Committee, Psychology, University of Southampton, SO17 1BJ, UK. Phone: 02380 593856, email fshs-rso@soton.ac.uk.
 - The University of Southampton Research Integrity and Governance Manager (023 8059 5058, rgoinfo@soton.ac.uk).

For a more in depth understanding of the study and information about the

University of Southampton’s Data Protection Privacy policy please scan the below Q-R code:



Thank you for taking the time to read this information sheet and for considering your child’s participation in the above study.

If you would **not** like your child to participate in this project, please complete and return the slip below. If you would like your child to participate in this study, you do not need to take any further action.

By completing this slip, you are stating that you **do not** want your child to take part in the gratitude diary project being completed by Stephanie Bowen.

Child’s Name:

Class:

Class Teacher:

I confirm that I **do not** wish for my children to part in the gratitude diary study as outlined in the parent information sheet.

Parent/Carer’s Signature:

Date:

Please return to your child’s class teacher

F.3 Parent/Carer Consent Form (Longer Version, Accessible from QR Code)

Research Information and Consent for Parents/carers

Dear Parent/Guardian,

My name is Stephanie Bowen, and I am a Trainee Educational Psychologist at the University of Southampton. I would like to invite your child to take part in a research study that I am conducting which aims to investigate whether the way gratitude diaries are written and presented to children impacts their effectiveness at increasing gratitude, a sense of school belonging and positive emotions. Children participating in this study will be asked to complete a short diary exercise each day for three weeks. After this, your child may also be invited to participate in a follow up interview to see how they felt about filling in the diary; if your child is selected for this interview then you will be contacted again to gain your consent for this. This letter concerns only the first part of the study – i.e., the daily diary exercise.

To help you decide whether you would like your child to take part, it is important that you understand why the research is being done and what it will involve. Details of the study are explained below.

If you would not like your child to participate in this project, please complete and return the slip at the end of this letter.

Study Title: An Initial Exploration of what makes a gratitude diary successful

Researcher: Stephanie Louise Bowen

ERGO number: 70859, **Date:** 13.05.22 **Version:** 3

Why has my child been asked to participate?

This study is designed to be a whole class project; It involves classes of children in Years 3, 4 and 5. I am hoping to find out whether specific elements of gratitude diaries (i.e., the way they are written and presented to children) impact their effectiveness on a child's feeling of gratitude, their sense of belonging in school and their positive emotions.

What will happen to my child if they take part?

Prior to beginning their diaries, the children will be asked to fill out four short, self-rated questionnaires. These questionnaires explore gratitude, positive emotions and sense of school belonging. The children will then be split into three groups, and they will fill out their diaries together each day over a three week period. The diary activity should take approximately 5-10 minutes. The diaries will only be completed at school; the children will not have to bring them home to complete at the weekend.

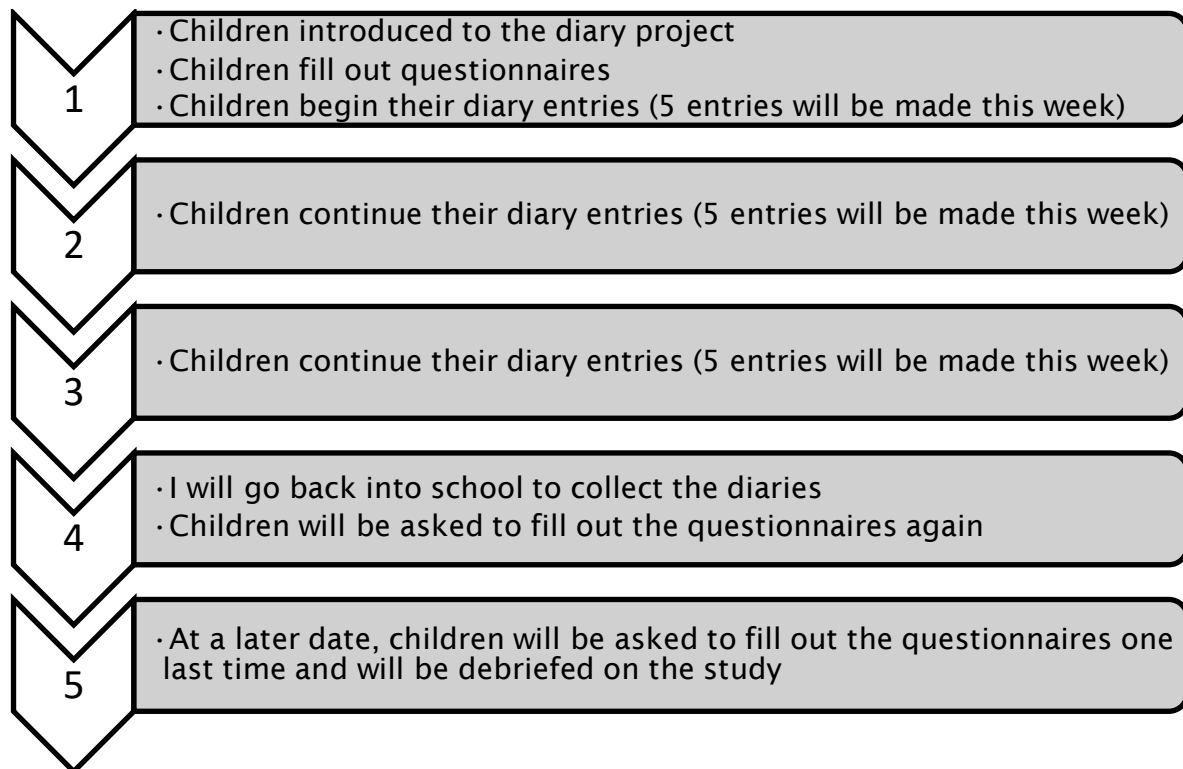
After this three week intervention, I will collect the diaries the children have filled in, they will **not** be analysed for their content, but diaries will be screened to ensure there are at least 10 diary entries and a percentage will be checked to make sure that children

have written their entries as they were asked to. When I collect the diaries from school the children will be asked to complete the short questionnaires again.

At a later date, I will return to school to ask the children to fill out the same questionnaires one last time. This will allow me to see if any impact the intervention had has lasted over a period of time. Please see the diagram below for an overview of the process.

Any children who need additional support to fill out these questionnaires in line with their normal way of working will receive such support from school.

As mentioned earlier, your child may also be selected to participate in a follow up interview after the study has finished. You will, however, be sent a separate consent form and information sheet, should your child be selected for an interview.



Are there any benefits in my child taking part?

The overall aim of this project is to explore if gratitude diaries increase children's feelings of gratitude, their sense of school belonging and their feelings of positive emotions. This is an area of great interest to Educational Psychologists and schools to help us understand how to make gratitude diaries as successful as possible. The findings of the project will be fed back to your child's school once the study has ended and the results analysed.

The study is underpinned by positive psychology research, and we hope that it will contribute to your child's overall wellbeing.

Are there any risks to my child being involved?

The research is designed to be low risk, but it might be that some children feel uncomfortable writing in their diary or would like to talk to someone they trust about something they have written in their diary or any worries or concerns that they may have. Children will be made aware of who they can go to in school should they wish to speak to someone about their diary.

What data will be collected from my child and how will it be stored and used?

Apart from their diary entries, children will be asked to provide their name (which will later be pseudo anonymised and then anonymised, please see below), their age and their gender.

Names will be removed and replaced with an ID number (pseudo anonymised). Therefore, your child's name will not be on any documentation that leaves the school.

A spreadsheet will be kept in school which keeps a record of children's names and their corresponding ID numbers: this is to ensure that if any safeguarding concerns are raised, or your child wishes to stop being involved in the study, their data can be retrieved or removed as necessary. This spreadsheet will be kept securely by a key contact at school and not by the researcher. The hard copies of the diaries and questionnaires that are taken off school site by the researcher will be stored in a lockable and secure container.

During data analysis, the data may be shared with my research supervisors and collaborators for the purpose of supporting accurate data analysis, but due to the data being pseudo anonymised my supervisors will not be able to identify your child within it. Additionally, responsible members of the University of Southampton may be given access to data about your child for monitoring purposes and/or to carry out an audit of the study to ensure that the research is complying with applicable regulations. Individuals from regulatory authorities (people who check that we are carrying out the study correctly) may require access to your child's data. All these people have a duty to keep your child's information, as a research participant, strictly confidential.

After the research study has ended, the spreadsheet with children's names and corresponding ID numbers will be destroyed, removing all connection of your child to the data, meaning the data will be fully anonymised. The findings of the study will be written up and disseminated more widely where appropriate, but no data will be published that connects your child to the project.

What will happen to the results/findings of the research?

As mentioned previously, your child's personal details will remain anonymous, with only those who are deemed necessary having access to the data (i.e., myself, collaborators, and my supervisors). No details of your child's school will be shared. The data from the study will be held on the 'Pure' data repository at the University of Southampton. Research findings made available in any reports or publications will not include information that can directly identify your child. It is hoped that the findings of the study will be useful to your child's school. It is also possible that the study findings may be presented in an academic journal.

Does my child have to participate in the study?

No, it is up to you and your child to decide. If you DO NOT want your child to take part in this study then please sign and return the slip below. Participation in this study is voluntary and if your child decides at any point that they do not wish to take part in the study they can stop without needing to give a reason. If you consent to your child participating (i.e., if you do NOT return the form) your child will still be asked to assent to taking part in the study when it starts. This means that your child will be asked if they want to take part. If they do, they will be included in the project. If they do not, they will be asked to write their name on a form to record that they do not want to be included.

Where can I get more information, or go to if I am concerned?

If you have any complaints, concerns or questions about the research please feel free to contact me (Stephanie Bowen, the researcher) on the following email address: s.l.bowen@soton.ac.uk

The research is supervised by Colin Woodcock (c.woodcock@soton.ac.uk) and Dr Catherine Brignell (C.Brignell@soton.ac.uk) from the University of Southampton.

In the unlikely case that something goes wrong in this study we advise you to contact the Head of Research Governance, University of Southampton, rgoinfo@soton.ac.uk, +44 (0) 2380 595058.

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

Data Protection Privacy Notice

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

law, 'Personal data' means any information that relates to and is capable of identifying a living individual. The University's data protection policy governing the use of personal data by the University can be found on its website (<https://www.southampton.ac.uk/legalservices/what-we-do/data-protection-and-foi.page>).

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

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

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

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

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

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

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

Thank you.

Thank you for taking the time to read this information sheet and for considering your child’s participation in the above study.

By completing this slip, you are stating that you **do not** want your child to take part in the gratitude diary project being completed by Stephanie Bowen.

Child’s Name:

Class:

Class Teacher:

I confirm that I **do not** wish for my children to part in the gratitude diary study as outlined in the parent information sheet.

Parent/Carer’s Signature:

Date:

Please return to your child’s class teacher

F.4 Child Opt-Out Form

CHILD ASSENT FORM

Study title: An Initial Exploration of What Makes a Gratitude Diary Successful

Researcher name: Stephanie Louise Bowen

ERGO number: 70859 **Date created:** 25.03.22 **Version:** 2

Participant Identification Number (if applicable):

If you do not want to take part in the gratitude diaries project please write your name and put a tick in the box at the bottom. This means that you will not be completing a diary or be asked to participate in a follow up interview with my friend Rosalind Keefe.

You can stop taking part at any time during the study, you just need to let your teacher know.

Gratitude Diary Research Project: Child Opt-Out Form

I do **NOT** want to take part in this project.

Name:

F.5 Rationale for Opt-Out Consent

Rationale for “Opt-Out” consent in accordance with GDPR

ERGO: 70859 Date: 25.03.22 Version: 2

To conduct a research project of this size, in a timely manner, it was felt appropriate to use “opt-out” consent with precautionary measures put in place to protect the anonymity of participants. It is planned for the data to be initially pseudo-anonymised, then later fully anonymised when it is no longer necessary to hold onto the spreadsheet from which participants can be identified.

Recital 26: EU GDPR states that: “Personal data which have undergone pseudonymisation, which could be attributed to a natural person by the use of additional information should be considered to be information on an identifiable natural person.”

During the data gathering process the spreadsheet that will be created to pseudo-anonymise the data is necessary firstly because it allows children to be identified if there are any safeguarding concerns; secondly it also allows the researchers to remove the data from any children who are withdrawn from the study, either by their parents or by their own admission, in line with the “opt-out” consent process and finally, it will be used to enable recruitment for the qualitative study.

To minimise the risk of data being identifiable to the researcher, the spreadsheet which holds the identifiable information will be kept within the educational setting, in line with their data protection policy. This will separate the data from the identifiable information and will help to minimise the risk of children’s data being identified

Both children and parents will be made aware of a date from which they can no longer remove their information from the study. Following this date, the identifiable information will be destroyed, rendering the data fully anonymised and: “the principles of data protection should

therefore not apply to anonymous information, namely information which does not relate to an identified or identifiable natural person or to personal data rendered anonymous in such a manner that the data subject is not or no longer identifiable. This Regulation does not therefore concern the processing of such anonymous information, including for statistical or research purposes.”

Therefore, following the study, the data used during the data analysis process will not be subject to GDPR regulations as it will be fully anonymised.

Appendix G Measures

G.1 Positive Affect Questionnaire Measure

Positive Affect Subscale from the PANAS

ERGO: 70859

Date created: 25.03.22

Version: 1

ID Number:

Age:

Sex (Male/Female/Other)

How often have you felt each feeling during the past few weeks at school?

1. Interested

Very slightly or not at all A little Moderately Quite a bit Extremely

1	2	3	4	5
---	---	---	---	---

2. Excited

Very slightly or not at all A little Moderately Quite a bit Extremely

1	2	3	4	5
---	---	---	---	---

3. Happy

Very slightly or not at all A little Moderately Quite a bit Extremely

1	2	3	4	5
---	---	---	---	---

4. Strong

Very slightly or not at all A little Moderately Quite a bit Extremely

1	2	3	4	5
---	---	---	---	---

5. Energetic

Very slightly or not at all A little Moderately Quite a bit Extremely

1	2	3	4	5
---	---	---	---	---

6. Calm

Very slightly or not at all A little Moderately Quite a bit Extremely

1	2	3	4	5
---	---	---	---	---

7. Cheerful

Very slightly or not at all A little Moderately Quite a bit Extremely

1	2	3	4	5
---	---	---	---	---

8. Active

Very slightly or
not at all

A little

Moderately

Quite a bit

Extremely

1	2	3	4	5
---	---	---	---	---

9. Proud

Very slightly or
not at all

A little

Moderately

Quite a bit

Extremely

1	2	3	4	5
---	---	---	---	---

10. Joyful

Very slightly or
not at all

A little

Moderately

Quite a bit

Extremely

1	2	3	4	5
---	---	---	---	---

11. Delighted

Very slightly or
not at all

A little

Moderately

Quite a bit

Extremely

1	2	3	4	5
---	---	---	---	---

12. Lively

Very slightly or
not at all

A little

Moderately

Quite a bit

Extremely

1	2	3	4	5
---	---	---	---	---

Thank you for completing these questions 😊

G.2 The Belonging Scale Measure

The Belonging Scale

ERGO: 70859

Date created: 25.03.22

Version: 1

ID Number:

Age:

Sex (Male/Female/Other)

		No, not true	Not sure	Yes, true
Practice	<i>I feel happy drawing pictures</i>	No	?	Yes

1.	I feel really happy at my school	No	?	Yes
2.	People here notice when I'm good at something	No	?	Yes
3.	It is hard for people like me to feel happy here	No	?	Yes
4.	Most teachers at my school like me	No	?	Yes

5.	Sometimes I feel as if I shouldn't be at this school	No	?	Yes
6.	There is an adult in school I can talk to about my problems	No	?	Yes
7.	People at this school are friendly to me	No	?	Yes
8.	Teachers here don't like people like me	No	?	Yes
9.	I feel very different from most other kids here	No	?	Yes
10.	I wish I were in a different school	No	?	Yes
11.	I feel happy being at my school	No	?	Yes
12.	Other kids here like me the way I am	No	?	Yes

Thank you for completing these questions 😊

G.3 The Gratitude Questionnaire – Six Item Form (GQ-6)

The GQ-6

ERGO: 70859

Date created: 25.03.22

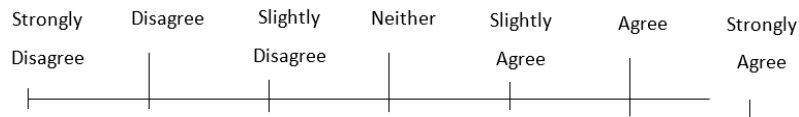
Version: 1

ID Number:

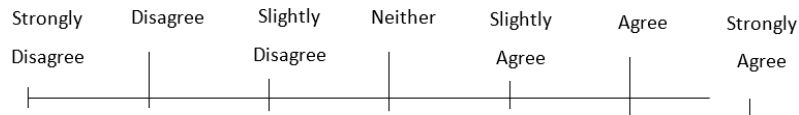
Age:

Sex (Male/Female/Other)

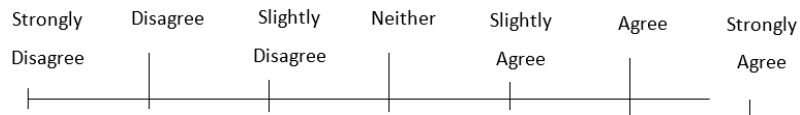
1. I have so much in school to be thankful for



2. If I had to make a list of everything I felt grateful for in school, it would be a very long list



3. When I think about school, I can't think of many things to be grateful for



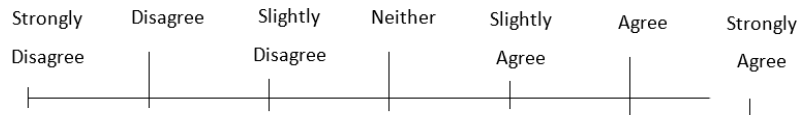
4. I am grateful to lots of different people at school



5. As I get older, I find myself feeling more thankful for my memories at school



6. I do not often find myself feeling grateful



G.4 The Questionnaire of Appreciation in Youth (QUAY)

The Questionnaire of Appreciation in Youth

ERGO: 70859

Date created: 25.03.22

Version: 1

ID Number:

Age:

Sex (Male/Female/Other)

For each sentence below, please tick an answer to show often each statement is true for you.

		Never	Not very often	Sometimes	Very often	Always
1	I can easily think of lots of things I am thankful for					
2	People help me and support me					
3	I have lots of things in my life to be thankful for					
4	Simple things can make me happy					
5*	I feel jealous of other children					
6	Small good things can happen, even on a bad day					
7	I am a grateful person					

		Never	Not very often	Sometimes	Very often	Always
8	I can think about the things I am grateful for to cheer me up if I am feeling sad					
9	I am so lucky compared to some other children					
10	If someone does something kind for me, I will do something kind back					
11	I feel happy to have the life that I have					
12	I look around and feel amazed by the things I see					
13*	There are lots of things I would like to change about my life					
14	It is important to say 'thank you' if someone does something nice for you					
15	Other people give up their time to help me					
16*	The best things in life are expensive presents					
17	I think about good things that have happened to me in the past					

		Never	Not very often	Sometimes	Very often	Always
18	My friends and I do kind things for each other					
19	When something good is happening, I try to enjoy it as much as I can					
20	People around me want me to have a happy life					
21	I feel more thankful when someone does something for me if it has taken them a lot of effort					
22*	It takes me a long time to feel better after something annoys me					
23	I like being thankful					
24	Taking time to be thankful is something I try to do each day					
25	I notice when good things happen in my day					
26	I feel happy if someone does a kind thing for me					
27	I remind myself to be thankful					

Thank you for completing these questions 😊

Appendix H Scripts

H.1 Introductory Semi-Structured Scripts: Study Introduction to Whole-Class

ERGO: 70859

Date created: 13.05.22

Version: 3

Hello!

My name is Stephanie and I am a trainee educational psychologist at the University of Southampton. I am learning, just like you are at school, and to help me with my learning my teachers have asked me to do a project!

For my project I am asking children in Year 3, 4 and 5 to fill out diaries for two three weeks. I have spoken to your head teacher and they have agreed that I could come to see you today to ask if you would like to take part. I've also sent a letter to all your mums and dads or guardians parents or carers to let them know that I am coming to see you too. So I'm here at ... to ask if you would like to do this project take part!

Everyone will do the diary as a class activity, which means that you will all complete separate diaries but at the same time, and if you're happy to do this project then you will be asked to complete the diary every day for three weeks, and it might take you between 5 or 10 minutes to do. There are some instructions that you will need for the diary though, so after this I will take each of you out in small groups to explain more about what I'd like you to do.

Does this sound ok?

So just to explain what we will do:

1. I will hand your diaries and there will be some questionnaires inside. I would like you to put your name on the diary, in pencil, only the diary, not the questionnaires.
2. I will collect your diaries back in and leave the questionnaires on the desk so we can do them together
3. Then we will go out into small groups, and I will explain the diaries to you

Does this still sound ok? Are there any questions?

Is there anyone who would not like to take part or do these activities at the moment? [if child puts up hand, acknowledge them and say you will come to them in a moment]

Now your diaries and the questionnaires we will do together will be passed around. Remember, please only write your name at the top of the diary, I would really like you to not peak

inside the diaries just yet – we will do this in our groups later. When you have put your name on the diary, can you put the diaries in a pile in the middle of the table and your teacher will collect them. Please keep your questionnaires in front of you.

[teacher hands out diaries/collects them back in] / [if a child has said they do not want to take part, researcher/key adult to take assent form over and ask them to fill it out]

[teacher to write pupil name next to corresponding ID number on spreadsheet, whilst I ask the questions]

Now, we are going to do the questionnaires before we start the diaries. I know there are quite a few sheets there, but these won't take long because I'll be reading out all the questions and you only have to tick or circle one of the boxes for each question.

Please put your age and gender on your questionnaires. I will ask the question out loud and then you can write your answer. When I take the questionnaires away with me today they won't have your name on them because they already have an ID number on them, so no one knows what answer you wrote. But, if I am worried about anything that you have put on your questionnaire I will be able to find out who said it so I can make sure you are all safe.

Hand out questionnaires and read the questions to the whole class:

- GQ-6
- QUAY
- PANAS
- Belonging

Thank you all so much for your hard work in filling out the questionnaires. I am going to call you out in small groups now to tell you more about filling out your diaries!

[see group scripts for diaries]

When I come back to collect the diaries in three weeks' time – we will do these questionnaires again! Then, I will come in again around XX/XX/XX for one final visit to ask you to do the questionnaires one more time.

Thank you so much for all your help! Remember, if you have any questions ask your teacher and they can ask me.

H.2 Introduction Semi-Structured Scripts: Diary Groups

ERGO: 70859

Date created: 13.05.22

Version: 3

H.2.1 *Event Diary*

1. Introduce myself again
2. Ask the group to introduce themselves

As I mentioned in class, I am asking children in Year 3, 4 and 5 to take part in filling out a diary for three weeks. Each of you will have your own diary and this is the one you will be asked to write in, every day at school for the next three weeks. The diaries will only be completed at school and not at the weekends.

In your diary I would like you to write about something that has 3 small things that have happened in school on that day. For example, one thing I might write is, "I met children in Year X at X school X today". You can write about anything that has happened on that day.

If you have any questions your teacher will pause the video now to answer them [pause].

Your teacher will now give you your diary for you to put your name on and can draw another picture on the front if you want to. I will now talk you through the instructions.

Hand out diaries.

[Open example diary on the video and read through the instructions].

"It can be really helpful to keep a record of things that have happened during the day..."

This first page gives you your instructions and the rest of the diary is the space for you to write in every day. I would really like you to:

1. Write about something that has 3 small things that have happened at school that day
2. Start on a different page everyday
3. Remember that this is your diary and is private to you, but I will be taking the diaries away with me in three weeks' time
4. If you want to talk about anything that you have written in your diary, please talk to your teacher

Another important thing is that no one will be looking at your spellings, so please don't worry if you're not sure how to spell something, either ask your teacher or just have a go!

In three weeks, I will come back to school and take the diaries away with me. When I take them away from school I will take your names off the front and just leave your “My Number” on there instead [point to this on the diary], so no one will know what you’ve written. However, if there is something in a diary that worries me a little bit, then I will be able to find out whose diary it is and ask their teacher to talk to them to make sure everyone is safe.

How does that sound? Would like to ask me any more questions before you go back to class?

Is there anyone who would not like to take part? This is absolutely ok. I just need you to write your name and tick the box on this form [child assent form] to say that you would not like to take part.

H.2.2 Gratitude Diary: Positive reinforcement group

1. Introduce myself again
2. Ask the group to introduce themselves

As I mentioned in class, I am asking children in Year 3, 4 and 5 to take part in filling out a diary for three weeks. Each of you will have your own diary and this is the one you will be asked to write in, every day at school for the next three weeks. The diaries will only be completed at school and not at the weekends.

In your diary I would like you to write up 3 things that you are grateful or thankful for in school that day. For example, I might write “I am thankful that the children at X school X listened to me, I am thankful that their teacher was really friendly, and I am thankful that Mr X helped me when I couldn’t find the right classroom”. Does that make sense?

I wonder what do you understand ‘thankful to mean? [researcher to take responses and praise, and clarify if needed e.g., when I am thankful about something I am happy that it happened, and I feel grateful for it].

Does anyone have any questions before I had the diaries out?

Right, I’ll hand the diaries out now. You can draw a picture on the front if you want to and we will go through the instructions together.

Hand our diaries, pens, and crayons.

Open example diary and read through the instructions and blurb: "Sometimes it is good to think about things that make you feel thankful. These thoughts are like jewels in a treasure chest. Even the smallest jewels are precious."

I would really like you to:

1. Write down up to 3 things that you are thankful or grateful for in school that day
2. Start on a different page everyday
3. Remember that this is your diary and is private to you, but I will be taking the diaries away with me in three weeks' time
4. If you want to talk about anything that you have written in your diary, please talk to your teacher

Another important thing is that no one will be looking at your spellings, so please don't worry if you're not sure how to spell something, either ask your teacher or just have a go!

In three weeks, I will come back to school and take the diaries away with me. When I take them away from school I will take your names off the front and just leave your "My Number" on there instead [point to this on the diary], so no one will know what you've written. However, if there is something in a diary that worries me a little bit, then I will be able to find out whose diary it is and ask their teacher to talk to them to make sure everyone is safe.

How does that sound? Would like to ask me any more questions before you go back to class?

Is there anyone who would not like to take part? This is absolutely ok. I just need you to write your name and tick the box on this form [child assent form] to say that you would not like to take part.

H.2.3 Gratitude Diary: Negative Reinforcement Group

1. Introduce myself again
2. Ask the group to introduce themselves

As I mentioned in class, I am asking children in Year 3, 4 and 5 to take part in filling out a diary for three weeks. Each of you will have your own diary and this is the one you will be asked to write in, every day at school for the next three weeks. The diaries will only be completed at school and not at the weekends.

In your diary I would like you to write up 3 things that you are thankful for in school that day. For example, I might write “I am thankful that the children at X school X listened to me, I am thankful that their teacher was really friendly, and I am thankful that Mr X helped me when I couldn’t find the right classroom”. Does that make sense?

I wonder what do you understand ‘thankful to mean? [researcher to take responses and praise, and clarify if needed e.g., when I am thankful about something I am happy that it happened, and I feel grateful for it].

Does anyone have any questions before I had the diaries out?

Right, I’ll hand the diaries out now. You can draw another picture on the front if you want to and we will go through the instructions together.

Hand our diaries, pens, and crayons.

Open example diary and read through the instructions and blurb: “It is important to be thankful, being thankful may help us to become better people. Let’s see what you are thankful for today...”

I would really like you to:

1. Write down up to 3 things that you are thankful or grateful for in school that day
2. Start on a different page everyday
3. Remember that this is your diary and is private to you but I will be taking the diaries away with me in three weeks’ time
4. If you want to talk about anything that you have written in your diary, please talk to your teacher

Another important thing is that no one will be looking at your spellings, so please don’t worry if you’re not sure how to spell something, either ask your teacher or just have a go!

In three weeks, I will come back to school and take the diaries away with me. When I take them away from school I will take your names off the front and just leave your “My Number” on there instead [point to this on the diary], so no one will know what you’ve written. However, if there is something in a diary that worries me a little bit, then I will be able to find out whose diary it is and ask their teacher to talk to them to make sure everyone is safe.

How does that sound? Would like to ask me any more questions before you go back to class?

Is there anyone who would not like to take part? This is absolutely ok. I just need you to write your name and tick the box on this form [child assent form] to say that you would not like to take part.

H.3 Video Semi-Structured Script: Introductory Video for Absent Children

ERGO: 70859

Date created: 13.05.22

Version: 3

Hello!

My name is Stephanie, and I am a trainee educational psychologist at the University of Southampton. I am learning, just like you are at school and to help me with my learning my teachers have asked me to do a project!

For my project I am asking children in Year 3, 4 and 5 to fill out diaries for three weeks. You were away from school on the day that I came to see your class and introduce the project to them. I have spoken to your head teacher, and they have agreed that I could go to see your class to see if you would like to take part. I've also sent a letter to all your mums and dads parents or carers guardians to let them know about the project too. So, I've made this video for you to watch because you did not get to hear about the project when I came into school to ask if you would like to do this project take part!

Everyone in your class will do the diary as a class activity, which means that you will all complete separate diaries but at the same time, and if you're happy to do this project then you will be asked to complete the diary every day for three weeks, and it might take you between 5 or 10 minutes to do. There are some instructions that you will need for the diary though, so after this your teacher will show you which diary you have been given and show you a video of what you need to do.

Before this though, I have some questions that I would like to ask you. If you have any questions it would be good to ask your teacher now. Remember, I have asked your head teacher and parents already and they have said yes, but it is up to you if you would like to take part! If you would not like to take part, please tell your teacher now and they will give you a form to write your name on and tick a box. Your teacher will pause the video now. [teacher pauses video]

Ok, I hope your teacher was able to answer any questions if you had them and you have decided to take part, which is great, thank you! If you are happy to take part in the project, then I am going to ask you to complete some questionnaires now. Your teacher has a pack for you which includes your diary and the questionnaires. Your teacher will pause the video and read the

questions to you so that you can answer the questions. The whole class were read the questions by me when I came into school, so we wanted to give you the same opportunity to have them read to you.

When you get your questionnaires, please put your age, and gender at the top. Your teacher will keep these safe for me until I can come into school to collect them. You will notice that there is number on top of your questionnaire that is the same as your diary, this is so that when I come to school to collect them no one knows what answers you wrote. But, if I am worried about anything that you have put on your questionnaire I will be able to find out who said it so I can make sure you are all safe.

Your teacher will now pause the video to ask you the questionnaires questions and start the video again when you have finished. There are 4 questionnaires. [teacher pauses video]

[teacher plays video]

Thank you so much for your hard work in filling out the questionnaires. Your teacher will now show you the diary that I would like you to fill out and show you a video that tells you what you need to do to fill out your diary.

When I come back to collect the diaries in three weeks' time we will do these questionnaires again! Hopefully I will be able to meet you next time. Then, I will come in again around XX/XX/XX for one final visit to ask you to do the questionnaires one more time.

Your teacher will now show you the diary that I would like you to fill out and show you a video that tells you what you need to do to fill out your diary.

Thank you for taking part in my project, I am very grateful.

Bye [Wave and end video].

H.4 Video Semi-Structured Script: Diary Introduction Video for Absent Children

ERGO: 70859

Date created: 13.05.22

Version: 3

H.4.1 *Event Diary*

Hello again, now that you have completed your questionnaires with your teacher, it is time to introduce you to your diary. I am asking children in Year 3, 4 and 5 to take part in filling out a diary for three weeks. Everyone will have their own diary, and this is the one you will be

asked to write in, every day at school for the next three weeks. The diaries will only be completed at school and not at the weekends.

In your diary I would like you to write about something that has about 3 small things that have happened in school on that day. For example, I might write "I met children in Year X at X school X today". You can write about anything that has happened on that day.

If you have any questions your teacher will pause the video now to answer them [pause].

Your teacher will now give you your diary for you to put your name on and can draw another picture on the front if you want to. I will now talk you through the instructions.

[Open example diary on the video and read through the instructions].

"It can be really helpful to keep a record of things that have happened during the day..."

This first page gives you your instructions and the rest of the diary is the space for you to write in every day. I would really like you to:

5. Write about something that has 3 small things that have happened at school that day
6. Start on a different page everyday
7. Remember that this is your diary and is private to you, but I will be taking the diaries away with me in three weeks' time
8. If you want to talk about anything that you have written in your diary, please talk to your teacher

Another important thing is that no one will be looking at your spellings, so please don't worry if you're not sure how to spell something, either ask your teacher or just have a go!

In three weeks, I will come back to school and take the diaries away with me. When I take them away from school I will take your name off the front and just leave your "My Number" on there instead [point to this on the diary], so no one will know what you've written. However, if there is something in a diary that worries me a little bit, then I will be able to find out whose diary it is and ask their teacher to talk to them to make sure everyone is safe.

Does that sound ok? Your teacher will now pause the video again for you to ask any questions [pause].

If you do not want to keep a diary or take part in the project, this is absolutely ok, please just let your teacher know now and they will give you a form to write your name on and ask you to tick a box on the form [child assent form] to say that you would not like to take part.

I hope you enjoy keeping your diary, see you in three weeks! Bye for now [wave].

H.4.2 *Gratitude Diary: Positive reinforcement group*

Hello again, now that you have completed your questionnaires with your teacher, it is time to introduce you to your diary. I am asking children in Year 3, 4 and 5 to take part in filling out a diary for three weeks. Everyone will have their own diary and this is the one you will be asked to write in, every day at school for the next three weeks. The diaries will only be completed at school and not at the weekends.

In your diary I would like you to write up 3 things that you are thankful for in school that day. For example, I might write “I am thankful that the children at X school X listened to me, I am thankful that their teacher was really friendly, and I am thankful that Mr X helped me when I couldn’t find the right classroom”. Does that make sense?

I wonder what do you understand ‘thankful to mean? Your teacher will now pause the video so you can have a little chat about this. [pause video]

Yes, so I would say when I am thankful about something I am happy that it happened, and I feel grateful for it].

If you have any questions your teacher will pause the video now to answer them [pause].

Your teacher will now give you your diary for you to put your name on and can draw a picture on the front if you want to. I will now talk you through the instructions.

[Open example diary on the video].

“Sometimes it is good to think about things that make you feel thankful. These thoughts are like jewels in a treasure chest. Even the smallest jewels are precious.”

This first page gives you your instructions and the rest of the diary is the space for you to write in every day. I would really like you to:

1. Write down up to 3 things that you are thankful or grateful for in school that day
2. Start on a different page everyday
3. Remember that this is your diary and is private to you, but I will be taking the diaries away with me in three weeks’ time
4. If you want to talk about anything that you have written in your diary, please talk to your teacher

Another important thing is that no one will be looking at your spellings, so please don't worry if you're not sure how to spell something, either ask your teacher or just have a go!

In three weeks, I will come back to school and take the diaries away with me. When I take them away from school I will take your name off the front and just leave your "My Number" on there instead [point to this on the diary], so no one will know what you've written. However, if there is something in a diary that worries me a little bit, then I will be able to find out whose diary it is and ask their teacher to talk to them to make sure everyone is safe.

Does that sound ok? Your teacher will now pause the video again for you to ask any questions [pause].

If you do not want to keep a diary or take part in the project, this is absolutely ok, please just let your teacher know now and they will give you a form to write your name on and ask you to tick a box on the form [child assent form] to say that you would not like to take part.

I hope you enjoy keeping your diary, see you in three weeks! Bye for now [wave].

H.4.3 Gratitude Diary: Negative Reinforcement Group

Hello again, now that you have completed your questionnaires with your teacher, it is time to introduce you to your diary. I am asking children in Year 3, 4 and 5 to take part in filling out a diary for three weeks. Everyone will have their own diary and this is the one you will be asked to write in, every day at school for the next three weeks. The diaries will only be completed at school and not at the weekends.

In your diary I would like you to write up 3 things that you are thankful for in school that day. For example, I might write "I am thankful that the children at X school X listened to me, I am thankful that their teacher was really friendly, and I am thankful that Mr X helped me when I couldn't find the right classroom". Does that make sense?

I wonder what do you understand 'thankful to mean? Your teacher will now pause the video so you can have a little chat about this. [pause video]

Yes, so I would say when I am thankful about something I am happy that it happened, and I feel grateful for it.

If you have any questions your teacher will pause the video now to answer them [pause].

Your teacher will now give you your diary for you to put your name on and can draw a picture on the front if you want to. I will now talk you through the instructions.

[Open example diary on the video].

“It is important to be thankful. Being thankful may help us to become better people. Let’s see what you are thankful for today...”

This first page gives you your instructions and the rest of the diary is the space for you to write in every day. I would really like you to:

1. Write down up to 3 things that you are thankful or grateful for in school that day
2. Start on a different page everyday
3. Remember that this is your diary and is private to you but I will be taking the diaries away with me in three weeks’ time
4. If you want to talk about anything that you have written in your diary, please talk to your teacher

Another important thing is that no one will be looking at your spellings, so please don’t worry if you’re not sure how to spell something, either ask your teacher or just have a go!

In three weeks, I will come back to school and take the diaries away with me. When I take them away from school I will take your name off the front and just leave your “My Number” on there instead [point to this on the diary], so no one will know what you’ve written. However, if there is something in a diary that worries me a little bit, then I will be able to find out whose diary it is and ask their teacher to talk to them to make sure everyone is safe.

Does that sound ok? Your teacher will now pause the video again for you to ask any questions [pause].

If you do not want to keep a diary or take part in the project, this is absolutely ok, please just let your teacher know now and they will give you a form to write your name on and ask you to tick a box on the form [child assent form] to say that you would not like to take part.

I hope you enjoy keeping your diary, see you in three weeks! Bye for now [wave].

H.5 Script for Cover Staff

Script for Cover Staff

ERGO: 70859

Date created: 25.03.22

Version: 2

Hello!

My name is Stephanie, and I am a trainee educational psychologist at the University of Southampton. This class are currently helping me with a gratitude

diary study. Please could you follow the below steps to try and complete the diaries even though their usual class teacher is absent.

The children are split into three groups, with three different diaries. They do not know this, and I would be very grateful if you could not mention this to the children as this might impact the results of the study.

Steps

Step 1: ask the children to complete their diary for the day

Step 2: help any children that would normally receive help as a normal way of working for them in the class, to fill out their diary

Step 3: Please try to encourage children to come up with their own ideas for their diary if they are finding the task difficult

If you have any questions, please send me an email on:

s.l.bowen@soton.ac.uk.

Thank you for your support to continue this intervention in the absence of the children's usual class teacher.

If a child expresses a wish to not participate in the study any further, please let their class teacher know who will contact me to let me know.

Appendix I Debriefing Documents

I.1 Parent Debriefing Letter

Parent Debriefing Letter

ERGO: 70859

Date created: 13.05.22

Version: 2

Dear Parent/Carer,

Thank you for allowing your child to participate in my gratitude diary research study. This study was designed to explore whether specific elements of gratitude diaries impacted on their effectiveness to increase gratitude, sense of school belonging and positive emotions.

Your child was split into one of three groups (two gratitude diary groups and one event diary group) which allowed me to compare the effectiveness of different types of diaries. Your child also completed questionnaires relating to their gratitude, sense of school belonging and their positive emotions to help me understand whether the gratitude diaries had any impact on these areas after a three week intervention period and at a follow up.

I have not yet analysed the data, but I am hoping to find that those in the gratitude diary groups saw a larger increase in gratitude, sense of school belonging, and positive emotions wellbeing than those in the event diary group. This is not to say that those in the event diary group would not benefit from the intervention, only that those in the gratitude diary groups would show a greater increase.

The information collected in this study was pseudo anonymised (i.e., a corresponding ID number was provided to every child who participated) and will be fully anonymised (no trace of identifiable data leading to the children's identity) once the spreadsheet held by school that links your child's name to the ID number I have for them is destroyed. The spreadsheet will be destroyed on XX/XX/XX. If you decide that you want to withdraw your child's data from the project, then please can you let myself (on the below email) or your child's class teacher know before the above date because after this date, the data will be anonymous and I will be unable to withdraw your child's data.

The findings from my research will be shared with your child's school and the University of Southampton. In the future it is hoped that I will publish the findings of my research. Your child will not be identifiable from the findings that I publish.

I hope your child enjoyed participating and I am grateful that they chose to do so. If you have any questions please contact your child's class teacher or me on s.l.bowen@soton.ac.uk. Alternatively, you can contact my research supervisors, Colin Woodcock (c.woodcock@soton.ac.uk) or Catherine Brignell (C.Brignell@soton.ac.uk).

Best wishes,

Stephanie Bowen

Trainee Educational Psychologist

I.2 Participant Debrief Letter

Participant Debrief Letter

ERGO: 70859

Date: 25.03.22

Version: 1

Dear Pupil,

I just want to say a big thank you for participating in the gratitude diary project in school. You were split into three groups (two groups did a gratitude diary, one group did an event diary). Thank you for filling out the questionnaires too.

I want to find out how a gratitude diary can help children to feel better and feel they belong more in school, and also to see if it helps them to feel any more thankful for the things around them than they already are.

I have given you a blank gratitude diary if you would like to show your family and friends!

If you have any questions or feel worried about the project then please talk to your class teacher.

If you decide that you want to withdraw your answers and diary from the project, then please tell your parents or carers or class teacher by xx/xx/xx. After this date it will be too late because I will not be able to tell which were your answers or diary.

I hope you have a lovely rest of the school year – keep working hard!

Thank you,

Stephanie Bowen

Trainee Educational Psychologist



I.3 Debriefing Script

Participant Debriefing Script

ERGO: 70859

Date: 25.03.22

Version: 1

To be delivered at the final follow up visit after the collection of the final round of questionnaires.

Thank you for taking part in my gratitude diary project!

A few weeks ago, I asked you to keep a diary for three weeks. Thank you to everyone who did this. I also asked you to complete some questionnaires which told me about how grateful you felt, your sense of school belonging and your feelings. I am planning to look at these questionnaires to see whether your scores have changed since the first time you did them all those weeks ago. I hope that this will tell me how we can improve gratitude diaries for other children that may want to use them.

All your questionnaires and diaries will be kept in safe place without your name on them. I won't share any of your questionnaires or diaries with anyone, other than the people helping me with the study; they are helping me like your teachers help you in school. Once I have collected all the questionnaires and diaries from all the other children taking part in the project, I will write a report and share it with some different adults, such as your teachers in your school, who may then share the findings with you. Other adults who are interested in learning more about gratitude diaries may also like to see my report too.

Does this sound ok? Does anyone have any questions, or anything they would like to say about the project?

If you can't think of anything right now, that is absolutely fine! If you think of a question after I have left, then please just ask your teacher. If you decide that you want to withdraw your information from the project, then please can you let your teacher know by XX/XX/XX, because after this date I won't be able to tell which diary or questionnaires are yours.

I have got a thank you letter for each of you to take home, and a new blank template that you can choose to use or show your friends and family!

It's been lovely to work with you all – I hope you have a good rest of Year X.

Glossary

See definitions and abbreviations section.

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