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Title Page

Cross-cultural comparisons of shame and the relationships between benevolent childhood experiences, shame regulation, and adolescent psychopathology

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Declaration

I, the author, declare that this thesis has been submitted for the award of Doctorate in Clinical Psychology at the University of Sheffield. It has not been submitted for any other qualification to any other academic institution.

Conflict of Interest

The author declares that there are no known conflicts of interest.

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Lay Summary

This thesis comprises two papers, both of which examine shame. Shame is a self-conscious emotion linked to physical and emotional well-being and is shaped by demographic factors such as age, gender, and culture. The first paper is a systematic review examining how trait shame differs across cultures. Nine studies were included, most of which were of moderate quality. The findings illustrate gaps in cross-cultural shame research and cross-cultural patterns in shame. Generally, participants from Collectivist cultures reported higher levels of shame, especially in relation to others (external). However, cultural patterns were not universal, and interpretations were limited by poor conceptual clarity, cultural validity, and cultural factors not being explicitly measured. The review highlights the need for detailed demographic reporting and culturally sensitive designs.

The second paper presents a novel study exploring relationships between benevolent childhood experiences (BCE's), shame regulation, and somatic (bodily) and emotional distress in adolescents. 239 adolescents were recruited from mainstream schools in Yorkshire and completed short online questionnaires. The study found that internalising shame, which includes withdrawal and self-attack, strongly predicted both somatic and internalising symptoms in adolescents, even after accounting for demographics (i.e. age, gender) and Benevolent Childhood Experiences (BCEs). Externalising shame (attack-other) was linked only to emotional distress. Whereas avoidance and adaptive regulation styles did not reach significance. BCE's and gender were also found to uniquely predict adolescent distress.

Together, these papers illustrate the complexity of shame measurement and the need for further research on factors which shape shame and its role in psychopathology. Understanding shame regulation across cultures and developmental stages may offer new

insights into its role in mental and physical health. These findings provide a foundation for further research and the need for targeted interventions which address shame.

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Section One: Systematic Review

Cross-Cultural Comparisons of Shame: A Systematic Review

Abstract

Objectives: This review had three aims: (1) to summarise empirical evidence investigating cross-cultural differences in shame; (2) to identify the self-report measures used to assess shame across cultural groups; and (3) to explore cultural factors shaping shame expression.

Methods: A comprehensive database search was conducted on 31st March 2025 across Scopus, MEDLINE, and PsycINFO. Eligible studies were peer-reviewed journal articles comparing self-reported trait shame across at least two cultural groups. Studies were screened using pre-defined inclusion criteria, supplemented by forward and backwards citation chaining. Data from included studies were extracted and synthesised narratively. Study quality was assessed using the AXIS appraisal tool (Downes et al., 2016).

Results: Nine cross-sectional studies met the inclusion criteria, published between 1998 and 2023. Most studies focused on student populations and examined shame using various trait-based measures. While most studies found significant differences in shame across cultures, interpretation was often hindered by measurement variability, conceptual inconsistency, and cultural or demographic confounding variables (e.g. religion, acculturation).

Conclusion: Findings offered partial support for the presence of cross-cultural differences in trait shame. However, the mechanisms underpinning these differences remain inconclusive. Future research should address issues of construct clarity, cultural measurement validity, and contextual confounds to better understand how shame is shaped by culture.

Practitioner Points:

- Avoid blanket assumptions about broadly defined cultural or national groups and uniform responses to shame (e.g., collectivist vs. individualist).

- Seek to understand contextual factors, such as cultural socialisation and emotional expression norms, to allow for a more nuanced understanding of shame.
- Prioritise the use of culturally adapted measurement tools when working in multicultural clinical or research settings, especially when shame is central to distress.
- Provide culturally grounded psychoeducation when working with adults who experience shame, helping them to understand its function and impact.

Keywords: Shame, cross-cultural psychology, cultural comparisons, culture

Introduction

Cross-cultural psychology seeks to systematically compare psychological phenomena across cultures worldwide to uncover both universal patterns and culture-specific variations (Ilesanmi, 2009; Shiraev & Levy, 2010). Two primary perspectives dominate this field: the absolutist view, which assumes psychological constructs are largely invariant across cultures, and the relativist view, which suggests psychological processes are context-dependent (Ilesanmi, 2009). Generally, there is consensus that culture encompasses shared elements, such as beliefs, attitudes, values, and behaviours, which are transmitted across generations to represent a particular social group (Ilesanmi, 2009; Matsumoto & Hwang, 2012). However, culture is complex and socially constructed, with hundreds of definitions proposed across disciplines (Triandis, 1996). Traditionally, cultural differences have been conceptualised through dichotomies such as power distance, uncertainty avoidance and the widely studied collectivism versus individualism distinction (Hofstede, 2011; Shiraev & Levy, 2010). These dimensions were originally coined "*cultural syndromes*" (Triandis, 1996, p. 408) reflecting shared social norms and value systems organised around a unifying theme.

Broadly, individualism is described as "*complex behaviour focused on concern for oneself or a person's immediate family or social group*", and Collectivism is "*behaviour focused on concerns for others, and shared values and traditions* (Shiraev & Levy, 2010, p. 25). Arguably, Individualist cultures prioritise autonomy, independence, and self-expression, while collectivist cultures emphasise social harmony, interdependence, and group obligations (Triandis, 1996). As the study of culture has evolved, alternative perspectives have emerged identifying culture as a dynamic context-specific process which is historically derived and selected, rather than a relatively fixed set of traits or beliefs (Schaller & Crandall, 2004).

Emotions are particularly sensitive to cultural influences, with each emotion requiring independent exploration (Matsumoto & Hwang, 2012) and distinguishing between emotion identification and expression (Van Hemert et al., 2007). Cultural context can shape what activates an emotion, how it is perceived, and its function (Chen et al., 2025). A wealth of research has explored how culture shapes the interpretation, expression, and regulation of emotions (Akutsu et al., 2022; Butler et al., 2007; Matsumoto & Hwang, 2012; Mauss & Butler, 2010). For example, cultural fit, the degree to which emotional experiences align with cultural norms, significantly impacted emotional health and adaptive functioning (De Leersnyder et al., 2014; Yoo & Miyamoto, 2018).

Early researchers posited that emotions are both universal and culturally variable, while others suggest that emotional meanings can only be interpreted within a cultural context, considering between-culture variation (Mesquita, 2003; Shweder et al., 2008). However, there are many methodological and interpretive challenges in cross-cultural emotion research (Akutsu et al., 2022). Limitations include a lack of attention to within-culture variation, situation specificity, and inconsistent measurement of emotion domains (Boiger et al., 2018; Matsumoto & Hwang, 2012). A meta-analysis of 190 cross-cultural studies found that cultural variation in basic emotions (i.e. anger) was influenced by both methodological and cultural factors (Van Hemert et al., 2007). Considering emotional context is crucial when comparing findings, as adaptive social responses may be nuanced (Mesquita & Frijda, 1992). Such limitations raise questions about the validity and comparability of findings and highlight the importance of conceptual clarity in emotion measurement.

Shame has received particular attention in cross-cultural research because it involves appraisals of the self in relation to others, making it potentially more susceptible to social norms (Yakeley, 2018). Shame is a broad construct, often used flexibly in the literature to describe a complex experiential schema or affect (Martens, 2005). It is widely accepted that

shame is a multidimensional construct, encompassing negative affective, physiological, cognitive, behavioural and relational domains (Cohen et al., 2011; Tracy & Robins, 2004). However, perspectives vary considerably, with some authors emphasising its primitive physiological basis as a threat response to social rejection (Martens, 2005) and others viewing it as a self-conscious emotion, requiring cognitive self-evaluation (Lear et al., 2022; Tignor & Colvin, 2017; Tracy & Robins, 2004).

Most researchers agree that shame involves appraisals of the self as flawed, inferior, or morally defective beyond repair (Nathanson, 1992; Tracy & Robins, 2004). Unlike guilt, shame provokes negative global evaluations of the self, rather than specific behaviours (Sheikh, 2014). From a functionalist perspective, shame is neither inherently adaptive nor maladaptive; the intensity, frequency, or situation determines its impact (Lear et al., 2022). Low-intensity or transient shame may reinforce moral behaviour or encourage social bonding, while chronic, high-intensity shame is associated with maladaptive outcomes (Bastin et al., 2016; Lear et al., 2022; Scheel et al., 2020). The more enduring form of shame, referred to as trait shame or shame proneness, reflects a stable disposition to experience shame across contexts (López-Castro et al., 2019) and has been strongly linked to psychopathology, including depression, anxiety, and post-traumatic stress (Callow et al., 2021; López-Castro et al., 2019; Saraiya & Lopez-Castro, 2016; Young et al., 2016).

Shame has also been differentiated by orientation as well as its presumed adaptive or maladaptive function (Scheel et al., 2020). Internal shame arises from self-criticism, whereas external shame is based on anticipated or perceived negative evaluation from others (Gilbert & Andrews, 1998). The diverse and sometimes contradictory findings in shame literature, are likely explained by this conceptual complexity, including distinctions between state and trait shame, adaptive versus maladaptive valence, internal versus external focus, and general versus situation specific (i.e. body related or mental health-related shame) (Cohen et al.,

2011; Elison et al., 2006; Lear et al., 2022; Sheikh, 2014). Inconsistent differentiation from related emotions, such as guilt, may further contribute to variability (Sheikh, 2014; Tracy & Robins, 2004). These distinctions reinforce the importance of clear operational definitions.

Cultural factors are also thought to shape shame-related thoughts and behaviours more strongly than individual-level variables such as gender or socioeconomic status (Boiger et al., 2018). For example, individuals in collectivist cultures (e.g., East Asia) may experience shame as socially constructive, enhancing group cohesion, while those in individualist cultures (e.g., Western Europe, North America) may view shame as isolating or stigmatising (Bear et al., 2009; Furukawa et al., 2012; Sheikh, 2014). The complex interplay between cultural values, social norms and relational expectations in shaping shame expression (Lear et al., 2022; Sheikh, 2014) underscores the need for culturally sensitive shame measurement.

Cross-cultural comparisons of shame are also essential to avoid reinforcing Western interpretations, often emphasising its negative aspects (Sheikh, 2014) and potentially overshadowing its restorative prosocial function in relationships (Menon & Shweder, 1994; Mesquita et al., 2017). Despite growing interest, the literature remains fragmented. Previous reviews have largely been theoretical or narrative, without application of systematic methods to assess quality or consistency across studies (Matsumoto & Hwang, 2012; Sheikh, 2014). A preliminary search using Scopus and Google Scholar found no existing systematic reviews synthesising empirical findings comparing trait-based shame across cultures. Although recent reviews have examined emotion regulation more broadly (Chen et al., 2025; Song et al., 2024). This represents a notable gap, particularly given the increasing emphasis on cultural competence in mental health practice and the need for evidence-based insights.

This review addresses that gap by systematically evaluating empirical cross-sectional studies that compare trait-based shame across culturally defined groups. The focus was on

trait shame to enhance conceptual comparability across studies. However, interpretive limitations must be acknowledged, particularly surrounding measurement equivalence. For example, even identical measures may not capture the same constructs across cultures due to differences in interpretation (i.e. language) (Heine et al., 2002; Van de Vijver & Leung, 2021). Likewise, socially matched samples across cultures (i.e. age, gender) cannot fully account for contextual differences in emotions (Matsumoto & Yoo, 2006).

Importantly, differences in shame scores may not reflect meaningful cultural variation in shame experience. As such, findings must be interpreted in the context of how shame and culture are operationalised. Some researchers support measurement of culture at the individual level, reflecting varying endorsement of cultural values rather than proxies of culture such as national identity, country-level ratings or assumptions of cultural dichotomies (Hofstede, 2011; Oyserman et al., 2002). However, both approaches have their limitations and will be discussed in the context of review findings.

Understanding cultural variation in shame is essential for psychologists, clinicians, educators, and researchers working with diverse populations. Culture plays a role in how emotions are expressed, interpreted, and regulated, particularly in contexts where mental health is associated with stigma (Yakeley, 2018). Therefore, the findings will help to map the current state of the literature and progress towards modern cross-cultural practice, which reflects dynamic and multi-layered identities (Shiraev & Levy, 2010).

Research Questions

- Is there empirical support for cross-cultural variance in trait-based shame?
- What measures have been used to assess trait-based shame across cultures?
- Which cultural factors impact the experience, appraisal, and regulation of shame?

Methodology

Quality and Transparency

The review was pre-registered on PROSPERO on the 3rd of May 2023 (CRD42023422586, https://www.crd.york.ac.uk/PROSPERO/view/CRD42023422586). To ensure transparency and methodological rigour, the review was conducted in accordance with the PRISMA guidelines (Page, McKenzie, et al., 2021) and the PRISMA Explanation and Elaboration paper (Page, Moher, et al., 2021) (See Appendix A & B).

Eligibility Criteria

Eligibility criteria were defined using the PICOS framework (Methley et al., 2014) and are summarised in Table 1. Studies were included if they: (1) included participants aged 16 and over from clearly defined cultural groups; (2) statistically compared at least two cultural groups; and (3) included a trait-based generalised shame measure, assessing any dimension of shame (i.e. cognitive, affective, regulatory). Exclusion criteria included: (1) unclear or undefined cultural groups; (2) child or adolescent samples; (3) state-based shame or context-specific shame (i.e. body or mental health shame); and (4) qualitative studies, reviews, book chapters, case studies, and conference abstracts. Grey literature was excluded to maintain methodological rigour, given that it is not often peer-reviewed (Alexander, 2020). Focusing on an adult population reduced developmental confounds in shame expression, and restricting shame measurement to generalised trait-based tools improved conceptual clarity.

Table 1

Inclusion and Exclusion Criteria Using the PICOS Tool (Methley et al., 2014)

PICOS Domain	Inclusion Criteria	Exclusion Criteria
Participants	Participants aged 16 and over from a clearly defined cultural group. Cultural identity was operationalised by classifications made by the study authors (i.e. nationality, ethnicity, or religion). No restrictions were applied based on participant demographics other than age (i.e. gender), context (i.e. community/clinical), or location.	Children and adolescents under the age of 16. The cultural or ethnic group is not distinguishable in the text or clearly defined by the author.
Exposure	Cultural group membership was the exposure. Eligible studies included a cross-cultural or cross-national comparison in generalised self-report measures of shame. To be eligible, cultural comparisons between at least two distinct groups must be examined regarding shame scores.	Studies which do not provide direct statistical comparisons between cultural groups in a shame measure.

Comparison	Studies must include between-group comparisons of shame outcomes. Statistically analysed comparisons were eligible, provided that culture was the grouping variable.	Studies focusing exclusively on within-culture variation of one group (e.g., individual differences without cultural comparison) or those without a clearly defined cultural comparator were excluded.
Outcome	Primary outcomes include generalised trait-based self-report measures of shame (validated measures are not required). No restriction was applied based on the component of shame measured (i.e. physiological, behavioural, cognitive appraisals, regulation). Shame can either be analysed as a composite score of all scale items or a sub-scale score.	Studies were excluded if shame was not an outcome. Domain-specific shame measures, like mental health, work-related, or body shame. Studies were excluded if shame was not analysed independently and was conflated with other emotions like guilt or embarrassment.
Study Design	Quantitative cross-sectional studies were eligible. Studies must report between-group statistical comparisons. Peer-reviewed articles published in English were included to ensure methodological quality. No restrictions were applied based on the date of publication or geographical location.	Qualitative studies and reviews (i.e. systematic, narrative). Book chapters, conference papers, case studies, conference abstracts, and grey literature.

Note. The table includes the most recent eligibility criteria, updated following a PROSPERO amendment, see methods for details.

Search Strategy

A systematic search was conducted on the 31st of March 2025 using three electronic databases: Scopus, MEDLINE, and PsycINFO. Search terms were identified following a preliminary scoping search via Google Scholar. The final search strings included (cultur* OR cross-cultural OR crosscultural OR cross-national OR crossnational) AND (shame) alongside relevant Medical Subject Headings (MeSH) where appropriate. Truncation (i.e. cultur*) was used to capture variations of root words. MeSH terms were not imploded, although related terms were reviewed for inclusion. A subject librarian at the University of Sheffield reviewed the search strategy for accuracy and comprehensiveness. Backwards citation chaining was conducted on included studies (*n*=9). Forward citation searching was completed using Google Scholar. The full search strategy is available in Appendix C.

Study Selection

Records retrieved from the database search were exported to Rayyan (Ouzzani et al., 2016), and duplicates were resolved and removed. Title and abstract screening were conducted by the primary reviewer. If there was uncertainty about the shame measure or cultural comparison, studies were retained for full-text screening. A second reviewer (Trainee Clinical Psychologist, Leicester University) independently screened a random 25% of articles to ensure relevant reports were not disregarded (*N*= 861). Agreement was high, 97.91% and Cohen's kappa coefficient demonstrated substantial agreement beyond chance (*k*=.70) (Landis & Koch, 1977). Discrepancies were resolved through discussion. Subsequently, full-text screening was conducted by the first reviewer. The second reviewer independently screened a random subsample (25%). Agreement was reached on 24 studies (96%), with one discrepancy resolved collaboratively, resulting in exclusion. Inter-rater reliability was excellent (Cohen's k = .92), indicating almost perfect agreement beyond chance (Landis &

Koch, 1977). Authors of included studies were contacted to identify additional studies; no response was received. Despite time restraints, efforts were made to include a dual reviewer at all stages of screening, aligned with Cochrane guidance (Lefebvre et al., 2025).

Eligibility criteria were revised in April 2025 prior to completion of full-text screening in consultation with the second reviewer and review supervisor. A major amendment was submitted to PROSPERO on the 3rd May 2025 (https://www.crd.york.ac.uk/PROSPERO/view/CRD42023422586). Revisions aimed to enhance conceptual clarity, methodological consistency, and feasibility.

The scope was narrowed to studies assessing generalised, trait-based shame in participants aged 16 years or older, excluding state-based and context-specific measures to better isolate stable, cross-culturally comparable shame constructs. It also reduces the likelihood of age, developmentally confounding the findings. The requirement for formal validation was relaxed to support the review's aim to document measurement diversity. For pragmatic and conceptual reasons, we restricted the analysis to between-group cultural comparisons, omitting associations with psychopathology to maintain specificity.

Data Extraction

Data was extracted using a standardised template (See Appendix D), which included but was not limited to author, year of publication, country, aims, cultural groups examined, study design, sample characteristics, shame outcomes, data analysis, key findings, noted limitations, and interpretations of cross-cultural findings.

Quality Appraisal

The methodological quality of included cross-sectional studies (n = 9) was appraised simultaneously alongside data extraction using the 20-item AXIS tool (Downes et al., 2016). The tool was selected due to its detailed focus on reporting, bias, and methodological rigour

in cross-sectional studies. The AXIS tool and supplementary guidance are available in Appendix E. Several alternative tools were considered, including the Newcastle-Ottawa Scale, the Downs and Black Checklist and the EPHPP (Downs & Black, 1998; Effective Public Health Practice Project (EPHPP). However, these tools were deemed less suitable as they generalised across study designs and were less applicable to cross-sectional emotion research. Summative scoring tools were avoided due to oversimplification in detecting bias and their lack of contextual sensitivity (Gebrye et al., 2023; O'Connor et al., 2015).

To enhance transparency and inter-rater reliability, a structured framework was developed to rate overall study quality. Each study was assigned a total AXIS score out of 20 based on whether it met the criterion (15-20 = high quality, 10-14 moderate quality, <10 low quality). Some AXIS items were grouped based on criticality; high criticality items were considered to directly threaten internal and external validity (items 5,6,7, 11, 13, 14, 19, 20). Medium criticality items (8, 9, 12, 15, 16, 17, 18) were important for interpretation and trust in the results, but less likely to introduce bias. Low criticality items were largely contextual and less likely to directly influence bias (1, 2, 4, 10). Studies could only be categorised as high quality if they met five of the high criticality items, even if total scores were 15 or above. A mixed-method approach allowed for more reliable judgments.

Two reviewers independently rated each study using the AXIS tool and scored overall quality using the structured approach designed. Discrepancies were resolved through discussion until consensus was reached. Due to the small number of included studies (n=9), inter-rater agreement on final quality ratings was calculated using percentage agreement, as Cohen's Kappa has known instability in small samples and could be misleading (Hallgren, 2012; McHugh, 2012). A percentage agreement of 75% or above was considered acceptable, in line with thresholds recommended in the JBI Manual (Moola et al., 2020).

Data Synthesis

A narrative synthesis was conducted due to heterogeneity in shame conceptualisations, outcome measures, and cultural groupings. Studies were grouped based on shame dimension (e.g., affective, cognitive, regulatory), shame measure type, and cultural comparator (e.g., ethnicity, nationality). Findings were summarised descriptively, and conceptual categories were created to explore cross-cultural patterns in shame experience, interpretation, and measurement. Results are presented in summary tables.

Results

Study Selection

Figure 1 outlines the study selection process. From 5,685 records, 2,241 duplicates were removed. After screening 3,444 titles and abstracts, 83 full-text articles were assessed. Eight met the inclusion criteria, with one additional study identified through citation searching, yielding a total of nine included studies.

Study Characteristics

The nine cross-sectional studies were published between 1998 and 2023, spanning journals like *Personality and Individual Differences* and *Current Psychology*. All studies were cross-sectional, but varied by location, sample size and cultural groupings.

Participants

Across the nine included studies, the total sample comprised 4,215 participants (Mean = 468.33; Median = 319; Range = 191 - 1,405). Most studies recruited university students exclusively (n = 7), while two studies recruited broader community samples (Kariyawasam et al., 2022; Matos et al., 2023) and one included a small clinical subgroup (5.94%) (Dorevitch et al., 2020). Demographic data, such as age and gender, were inconsistently reported. Only

one study provided complete demographic breakdowns (Matos et al., 2023). Reported participant ages ranged from 17 to 73 years, with available total sample means (n=4) indicating a skew towards participants in their twenties.

Gender was more frequently reported by percentage than by frequency counts. Five studies reported total gender proportions, typically with more females than males. One study had an all-female sample (Grey et al., 2018) and only two reported gender by count (Anolli & Pascucci, 2005; Matos et al., 2023). Two-thirds of studies reported gender percentages by cultural group, with a general trend of more females compared to males across groups. Lutwak, et al., (1998), was the only study reporting more males overall.

Data Collection

Participants were recruited from various geographical locations (See Table 2 and Figure 2). All studies used convenience sampling, primarily recruiting university students either on campus (e.g., through course classes or for course credit) or online via mailing lists and university research pools. Just over half of the studies (n = 5) did not specify the mode of survey delivery. Among those that did, surveys were either completed online via Qualtrics (Stone-Sabali et al., 2024) or paper-based in person (Zhong et al., 2008). Two studies utilised mixed formats depending on the cultural group (Dorevitch et al., 2020; Su & Hynie, 2022). Three studies expanded their recruitment beyond student populations by utilising social media networks (Kariyawasam et al., 2022; Matos et al., 2023; Su & Hynie, 2022).

Table 2

Cross-Cultural Representation Across Included Studies (N=9)

Region and Cultural Context	Countries Represented
Northern Europe (“Individualist”)	United Kingdom, Republic of Ireland

Region and Cultural Context	Countries Represented
Southern Europe (“Individualist”)	Italy, Portugal, France
North America (“Individualist”)	United States, Canada
Oceania (“Individualist”)	Australia
Eastern Asian (“Collectivist”)	China, Japan
Southern Asian (“Collectivist”)	India, Sri Lanka
South-East Asia (“Collectivist”)	Singapore
Middle East (“Collectivist”)	United Arab Emirates

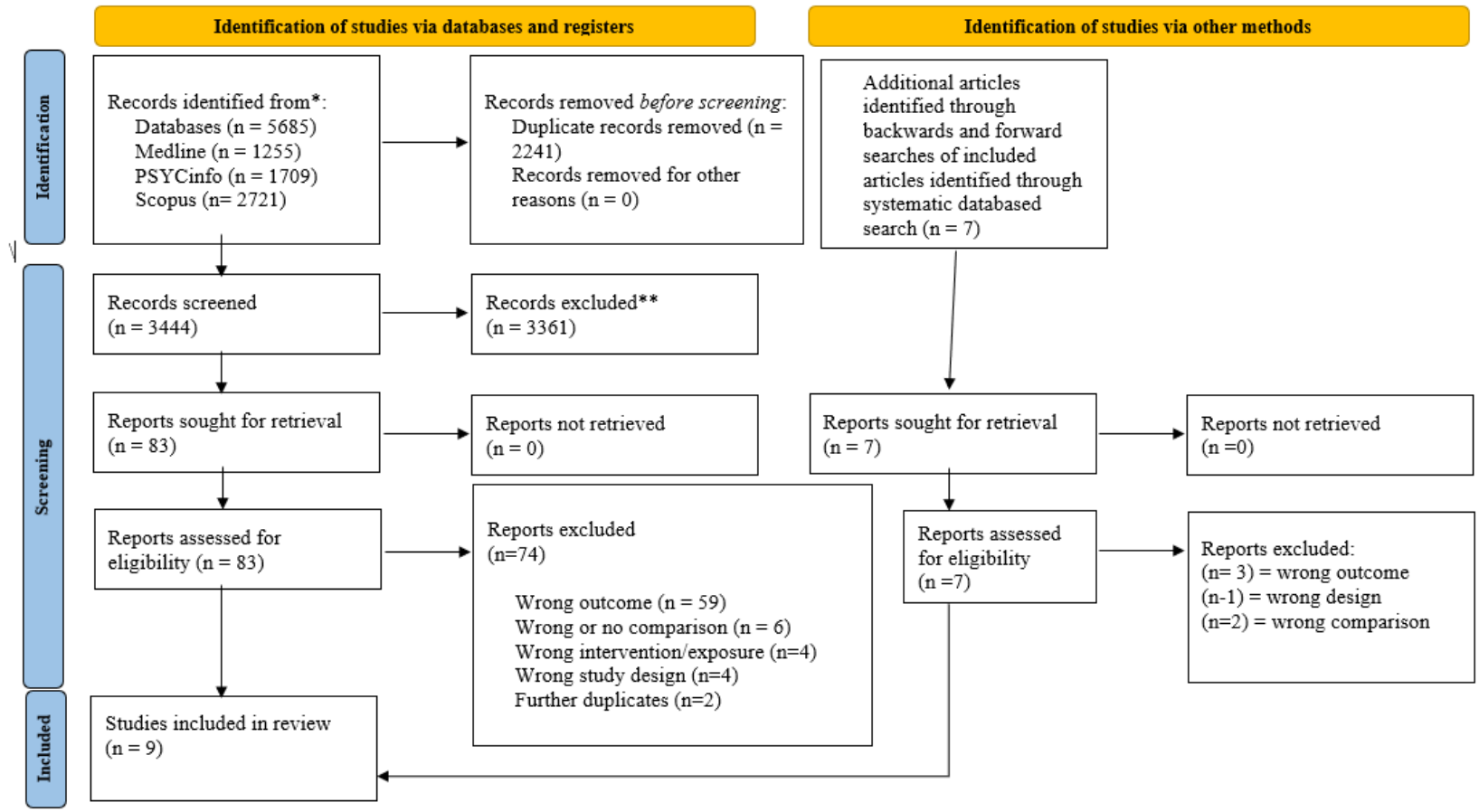

Figure 1

PRISMA Flow Diagram of study selection process. Adapted from Page et al. (2020)

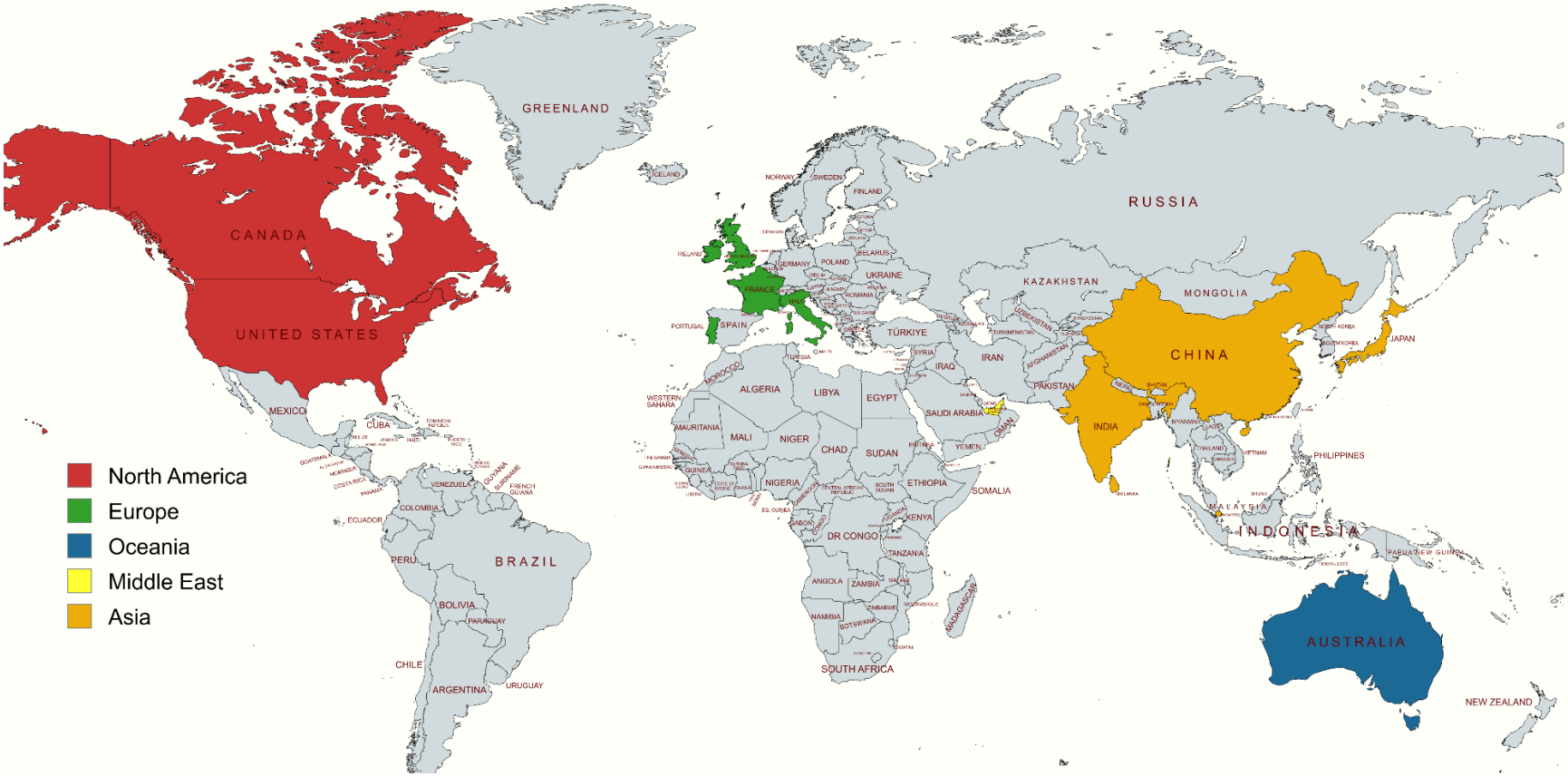

Figure 2

Geographical regions covered across the included studies (N=9)

Exposure

The operationalisation of culture varied across studies. Only one study examined individual cultural values to contextualise shame differences. Five studies made cross-national comparisons using nationality as the proxy for distinct cultural systems (Anolli & Pascucci, 2005; Grey et al., 2018; Kariyawasam et al., 2022; Matos et al., 2023; Zhong et al., 2008). Of these five studies, four compared participants across two countries, while Matos et al., (2023) included five national groups. In all five studies, culture was assumed to be shared and geographically bound. Two studies adopted an intra-national design comparing shame across ethnic groups within a single country, utilising ethnicity as a proxy for culture (Lutwak et al., 1998; Stone-Sabali et al., 2024). Two studies used mixed diasporic designs. Dorevitch et al., (2020) compared international and domestic students in Australia based on region of origin and presumed cultural orientation. Su & Hynie (2022) conducted cross-cultural and diasporic comparisons among ethnically distinct groups in Canada, using acculturation markers (e.g., student status) as proxies for cultural identity. All studies included a Western reference group.

Comparisons

Most studies ($N = 7$) used variations of ANOVA to analyse cultural group differences. One study used independent samples t-tests (Dorevitch et al., 2020) and another employed Bayesian linear modelling (Stone-Sabali et al., 2024). The majority compared two cultural groups ($N = 5$). Only two studies (Kariyawasam et al., 2022; Stone-Sabali et al., 2024). controlled for potential confounders such as age, gender, or religion.

An overview of study characteristics is presented in Table 3.

Table 3

Overview of Study Characteristics of Included Studies (N = 9)

Author, Year, Country	**Cultural Comparison**	**Sample Size (Population)**	**Age Range (M, SD)**	**Gender Distribution (N, %)**	**Shame Measure**	**Analysis**
Lutwak (1998) USA	Asian Americans (AS), Latin Americans (LA), African Americans (AA), European Americans (EA)	Total: 191 (University Students) AS = 66 LA = 44 AA = 43 EA = 38	Total: 17–34 years (M = 20.0, SD = 2.8) NR by cultural group.	Total sample NR AS: 42% Female, 52% Male LA: 41% Female, 59% Male AA: 42% Female, 58% Male	Test of Self-Conscious Affect (TOSCA)	One-way ANOVA Post-hoc Newman-Keuls Comparisons

				EA: 24% Female, 76% Male		
Anolli (2005) India, Italy	Indian, Italian	Total: 266 (University Students) Indian = 132 Italian = 134	Total: NR Indian (M=21.81, SD = 3.57) Italian (M=22.12, SD = 2.08) Age range by group NR.	Total: 141 female, 125 male (% NR). Indian: 66 Female, 66 Male (% NR) Italian: 75 female, 59 men (% NR).	Test of Self-Conscious Affect (TOSCA)	Mixed ANOVA
Zhong (2008) USA, China	Americans, Chinese	Total: 422 (University Students) USA = 211 China = 211	Total: NR (M=20.22, SD = 1.90) USA: 18–23 years (M = 18.8, SD NR).	Total: NR USA: 127 Male (55%), 104 Female (45%)	Experience of Shame Scale (ESS)	MANOVA. Post-hoc ANOVA's

			China: 18–23 years (M = 20.5, SD = NR).	China: 85 Male (46%), 100 Female (54%)		
Grey (2018) Republic of Ireland, United Arab Emirates (UAE)	Irish, Emirati	Total: 235 (University Students) Ireland = 120 UAE = 115	Total: 18–64 years (M, SD = NR) 18–29 (90.2%) 30-49 (9.4%) 50-64 (0.4%) Age NR separately by country	Total: Female (100%)	Guilt and Shame Proneness Scale (GASP) Two shame subscales: Negative Self-Evaluation, Withdrawal	Independent samples t-tests for each shame subscale
Dorevitch (2020) Australia	Australia, domestic (AD), Asian international (AI)	Total: 624 (University Students) AD = 308 AI= 316	Total: 17–55 (M = 20.0, SD = 4.38) Age by cultural group NR.	Total: 73.6% Female Gender by cultural group NR.	Internalised Shame Scale (ISS)	Independent samples t-tests

Su (2020) China, Canada	Mainland Chinese (MC), International Chinese (IC), Chinese Canadians (CC), European Canadians (EC)	Total: 319 (Undergraduate Students) MC = 69 IC = 65 CC = 86 EC = 99	NR	NR	Self-Regulation of Shame and Guilt Scale (SRSGS). 5 shame regulation sub-scales (problem-focused coping, support seeking)	2x4 MANOVA One-way ANOVA and Tukey comparisons
Matos (2021) Portugal, France, Australia, Singapore, Japan	Portuguese, French, Australian, Singaporean, Japanese	Total: 1,405 (General Population) Portugal = 398 France = 411 Australia = 266 Singapore = 130 Japan = 200	Total: 17-73 (M=26.48); SD = 11.75) Portuguese: 18-62 (M=26.40, SD = 8.95) French: 18-72 (M=28.15, SD = 13.00)	Total: 333 Male (23.7%), 1070 Female (76.2%) Portuguese: 310 Women: (77.9%), 88 Men (22.1%) French: 338 Women:	External and Internal Shame Scale (EISS)	ANOVA

			Australian: 17-73 (M=25.35, SD = 13.26) Singaporean: 17-71 (M=33.61, SD = 15.04) Japanese: 18-28 (M=20.08, SD = 1.77)	(82.2%), 73 Men (17.8%) Australian: 202 Women: (75.9%), 64 Men (24.1%) Singaporean: 75 Women (57.7%), 55 Men (42.3%) Japanese: 145 Women (72.5%), 53 Men (26.5%)		
Kariyawasam (2022) UK, Sri Lanka	UK, Sri Lankan	Total = 449 (UK and Sri Lankan Nationals) Sri Lanka = 149	Total: 18-62 years (M, SD = NR). Sri Lanka: 18–50 (M = 24.82, SD = 4.70)	Total: NR Sri Lanka: 52 Male (35%), 97 Female (65%)	Others As Shamer Scale (OAS)	ANCOVA

		UK = 300	UK: 18–62 (M = 20.95, SD = 6.11)	UK: 27 Male (9%), 272 Female (91%)		
Stone-Sabali (2023) USA	Asian Americans (AS), Latin Americans (LA), African Americans (AA)	Total: 304 (College Students) AS = 131 LA = 102 AA = 71	NR	Total: 60% Female and 40% Male AS: 58.7% Female LA: 59.8% Female AA: 66.1% Female	Test of Self-Conscious Affect (TOSCA-3)	Bayesian linear modelling. Pairwise comparisons between racial groups.

Note. All studies were cross-sectional. Only the first author is referenced for visual clarity. Pd = probability of direction and indicator of statistical significance; pd ≥ 95% demonstrates significance. MD = mean difference. P = significance value; $p<.05$ demonstrates significance. M = mean, SD = standard deviation. No information was deduced from the information reported in the main published article.

Quality Appraisal

The agreed dual quality ratings are reported in Table 4. Inter-rater agreement was reached in 7 out of 9 of the studies (77.8%). Although this falls slightly below the 80% threshold recommended by Centre for Reviews and Dissemination (2009), it exceeds the threshold in the JBI Manual (Moola et al., 2020). Given the small sample size of studies appraised, this level of agreement was considered acceptable. Reviewer transparency and consensus were prioritised, consistent with review guidance (Centre for Reviews and Dissemination, 2009; Higgins et al., 2024).

All nine studies met the four low criticality adapted AXIS criteria: clear study aims, design, target population, and statistical parameters. Among the seven moderate-criticality items, two were met by all studies: appropriate psychometric measures and reported limitations. Most employed well-validated shame measures and reported psychometric properties. Exceptions included Grey et al., (2018) who did not report validation data, and Su & Hynie (2022), who developed a novel, theoretically grounded and culturally adapted scale.

Just over half the studies ($N = 5$) provided sufficient methodological information to aid replication. Two-thirds were deemed internally consistent. Studies post 2008 were more likely to report all analyses described in their methods, while earlier studies (Anolli & Pascucci, 2005; Lutwak et al., 1998) omitted analytic plans or had insufficient detail, raising concerns about selective outcome reporting (Macura et al., 2010). Critically, sample size justification was absent across all studies, which can present ethical and statistical limitations (Biau et al., 2008; Lakens, 2022).

Despite some attempts to diversify recruitment, all studies demonstrated response bias due to reliance on student samples. Only Su & Hynie (2022) reported participant attrition and how it was addressed (i.e. mean replacement). Three studies lacked a conflict-of-interest

statement, and four (all pre-2020) failed to report ethical approval or participant consent, raising potential governance and safety concerns.

Using the developed structured AXIS framework, seven studies were rated as moderate quality and two as low quality. Later studies generally demonstrated better reporting and methodological rigour. The most frequent threats to validity included lack of sample size justification, omission of non-responder data, and unclear sampling procedures. Overall, Su & Hynie (2022) met the most highly critical items ($N = 4$).

Table 4

Main Reviewer AXIS Ratings Summary (colour-coded) and Inter-Rater Overall Quality Assessment Score

	Lutwak (1998)	Anolli (2005)	Zhong (2008)	Grey (2018)	Dorevitch (2020)	Kariyawasam (2022)	Su (2022)	Matos (2023)	Stone-Sabali (2023)
	Aims/Methods								
1. Aims/Objectives	+	+	+	+	+	+	+	+	+
2. Study Design	+	+	+	+	+	+	+	+	+
3. Sample Size	NR	NR	NR	NR	NR	NR	NR	NR	NR
4. Target Population	+	+	+	+	+	+	+	+	+
5. Sampling Frame	-	-	-	-	-	-	-	-	-
6. Selection Process	-	-	-	-	-	-	-	-	-
7. Non-responders	NR	NR	NR	NR	NR	NR	+	NR	NR
8. Appropriate Measures	+	+	+	+	+	+	+	+	+

9. Validated Measures	+	+	+	NR	+	+	-	+	+
10. Significance	+	+	+	+	+	+	+	+	+
11. Method Reporting	-	-	-	-	+	+	+	+	+
Results									
12. Basic Data Reporting	-	+	+	+	+	+	+	+	+
13. Response Bias*	NR	NR	NR	NR	NR	NR	+	NR	NR
14. Non-Responders	NR	NR	NR	NR	NR	NR	+	NR	NR
15. Internal Consistency	+	NR	-	+	+	+	-	+	+
16. Analysis Reporting	-	NR	+	+	+	+	+	+	+
Discussion									
17. Justified Claims	+	NR	+	+	+	+	+	+	+
18. Limitations	+	+	+	+	+	+	+	+	+
Other									
19. Conflict of Interest*	NR	NR	+	-	-	-	-	-	-
20. Ethics/Consent	-	NR	NR	NR	+	+	+	+	+
Total AXIS Items Score/20 (%)	9	8	11	11	14	14	14	14	14
Total High Criticality Items Met/8	0	0	0	1	3	3	4	3	3

Medium Criticality Items/7	5	4	6	6	7	7	6	7	7
Low Criticality Items/4	4	4	4	4	4	4	4	4	4
Overall Quality Rating	LOW	LOW	MOD	MOD	MOD	MOD	MOD	MOD	MOD

Note. NR = not reported in text or unclear, LOW = Low Inter-rater Quality Rating, MOD = Moderate Inter-rater Quality Rating. *Scoring. (*+) = criterion met, scored as 1, (-) = criterion not met, scored as 0, NR = criterion treated as not met and scored as 0. *except for items 13 and 19, where + or NR indicates bias and is therefore reverse scored as 0, and – indicates no bias and is scored as 1. Green = Positive quality indicator; Red = Negative quality indicator; Amber = Potential Source of Bias. Overall quality rating scoring system: 15-20 = high quality (strong methods, low risk of bias, good transparency), 10-14 = moderate quality (some methodological or reporting concerns, but findings are broadly trustworthy), <10 low quality (serious concerns about bias or validity, findings are less reliable for synthesis). To be categorised as high quality overall, at least 5/8 of high criticality items must be met, even when the score is 15+. High criticality items (shown in bold) → 3, 5, 6, 7, 11, 13, 14, 19, 20 *Items 7 + 14 combined in scoring, if either item is not met or NR, scored as 0. Medium criticality items – 8, 9, 12, 15, 16, 17, 18. Low criticality items (1, 2, 4, 10) = mostly contextual and less likely to directly influence bias.

Narrative Synthesis

To enhance clarity, the following narrative synthesis addresses the three research questions sequentially. See Table 5 for a thematic summary of cross-cultural shame patterns.

Cross-Cultural Variation in Trait-Based Shame

Cross-national Comparisons. All five studies examining cross-national differences in shame reported significant group differences. However, none reported standardised effect sizes, limiting the interpretation of the magnitude of these effects.

Anolli & Pascucci (2008) found Indian participants scored higher on the TOSCA than Italian participants, suggesting greater trait shame in assumed "*collectivist*" contexts. No significant differences emerged based on SES or education, and all participants were born and raised in their home countries, minimising the influence of acculturation. Similarly, Kariyawasam et al., (2022) found higher levels of external shame (OAS) among Sri Lankan nationals than UK participants. However, only religion was controlled for; other potential confounds, such as age, cultural norms, language, SES, and acculturation, were not. Contrastingly, Zhong et al., (2008) reported greater mean shame across multiple domains in American students compared to Chinese students, based on the culturally adapted ESS. Although all three studies focused on cognitive shame in large samples, Zhong et al., (2008) matched participants for age and gender, reported that all were non-religious, and confirmed that Chinese students had no Western living experience. Therefore, these findings may reflect culturally driven moderation of emotional expression rather than shame experience.

Grey et al. (2018) found that Emirati women (Middle Eastern context) reported significantly higher scores on shame-negative evaluation (NSE) and lower scores on shame-withdrawal (SW) compared to Irish women. Authors interpreted NSE as potentially adaptive in Muslim contexts, promoting moral responsibility, while lower SW was attributed to

cultural norms around conflict avoidance. However, no significant differences in collectivism were found between groups, thought to be the result of measurement error.

Matos et al., (2023) was the only multinational study which found small, significant cross-national differences in global, external, and internal shame. Japanese participants scored highest on global and external shame, followed by Australian participants. Japanese participants reported higher external and global shame than in Portugal, France, and Singapore, but not in Australia. Findings were interpreted in the context of social ecology and face-saving norms in collectivist cultures, despite not controlling for demographic variables.

Intra-national Comparisons. Two studies compared shame across ethnically diverse groups within the United States using the TOSCA (Lutwak et al., 1998; Stone-Sabali et al., 2024) enhancing comparability through a shared cognitive focus. However, studies differed in their analysis, with Lutwak et al., (1998) utilising an ANOVA across four groups (Asian, African, Latinx, European), while Stone-Sabali et al., (2024) used Bayesian linear modelling across three groups (Asian, African, Latinx). Both studies found that Asian Americans were most shame prone. However, neither study controlled for confounding factors and both used broad racial categories, potentially masking intra-group variation.

Mixed Design and Diasporic Comparisons. Two studies incorporated diasporic comparisons. Dorevitch et al. (2020) found no significant differences in internalised shame between Asian International and Australian Domestic students. In contrast, Su & Hynie (2022) found a main effect of cultural group on shame regulation, particularly in active strategies. These contrasting findings could be explained by the shame domains assessed (affective vs regulatory) and/or poor cultural sensitivity in shame measurement. Both studies acknowledged cultural influences on self-report (e.g. impression management) but did not control for key demographic or cultural confounds, like country of origin.

Su & Hynie (2022) reported multiple significant effects: Mainland Chinese participants scored higher on problem-focused coping, support seeking, and counterfactual thinking than Chinese and European Canadians. No differences were found for denial or avoidance. The authors interpreted these findings in the context of Chinese "*face-saving*" values and relational harmony. The only significant diasporic difference was higher support seeking in Chinese Canadians versus Chinese international students. Although both groups lived in Canada and shared heritage, greater acculturation appeared to support relational shame regulation within the context of Westernised norms.

Measures Used to Assess Shame Across Cultures

Measure Type. All studies used self-report questionnaires to assess trait shame (i.e. shame proneness). Three studies used the TOSCA-3 (Anolli & Pascucci, 2005; Lutwak et al., 1998; Stone-Sabali et al., 2024), while others used varied tools including the ISS, GASP, EISS, SRSGS, ESS, and OAS. A description of shame measures is available in Appendix F.

Validity. Most measures were externally validated and appropriate for cross-cultural comparisons, particularly the TOSCA-3, with the only exception being Su & Hynie (2022), who created a novel measure which lacked established psychometric validity. However, cultural sensitivity varied. Only one study (Matos et al., 2023) conducted multi-group confirmatory factor analysis to test measurement invariance (MI). MI was acceptable across the five national samples, suggesting mean differences are likely to reflect true cultural variation. Only three studies (Matos et al., 2023; Su & Hynie, 2022; Zhong et al., 2008) explicitly adapted or validated shame measures for specific cultural groups studied. The remaining six presumed cross-cultural validity without reporting adaptation procedures, raising concerns about linguistic or conceptual equivalence.

Most studies reflected on their findings in the context of theoretical cultural frameworks, and all but one (Anolli & Pascucci, 2005) acknowledged factors impacting the validity of comparisons, such as translation, acculturation, cultural values, and religion. Despite the use of culturally adapted measures, all rely on linguistic equivalence across shame-related words, creating potential for semantic and emotional variance in shame measurement, which can limit cross-national comparability (Matos et al., 2023).

Shame Domains. Although all studies assessed trait shame, the conceptual breadth varied, impacting how comprehensively the complexity of shame was captured.

- **Cognitive:** All nine studies measured cognitive aspects of shame and negative self-appraisals. Instruments like the TOSCA-3 and GASP assessed internal attributions of personal failure. The OAS captured the perceived negative evaluation from others.
- ***Affective.*** Six studies included the affective shame component and emotional distress, assessed directly in the ISS and EISS. The SRSGS (Su & Hynie, 2022) embedded emotional reactions within regulation styles.
- ***Regulatory.*** Only Su & Hynie's (2022) SRSGS focused explicitly on shame regulation, which included cognitive, behavioural, and somatic styles (e.g. avoidance, counterfactual thinking). The TOSCA and GASP may capture regulatory patterns, but do not treat them as explicit outcomes.
- ***Self or Other Focused.*** Few studies explicitly described how the shame measure assessed internal (self-judgment) and external shame (perceived negative judgment by others) or the context in which shame occurs (i.e. public vs private transgressions). Internal shame was measured in nearly all studies, whereas external shame was assessed in just three (Kariyawasam et al., 2022; Matos et al., 2023; Zhong et al., 2008). The OAS specifically targets external shame, and the EISS includes subscales

for both dimensions. External elements could be inferred in three studies, but were not directly assessed (Dorevitch et al., 2020; Grey et al., 2018; Su & Hynie, 2022).

Shame Domain Summary. Overall, most studies focused on cognitive aspects of shame, far fewer reported on affective, regulatory or external dimensions explicitly. The variability in shame measurement may influence the interpretation of shame across cultures.

Cultural Factors Influencing Shame Experience, Appraisal, and Regulation

This section explores potential cultural influences, such as values, beliefs, and practices, that may shape the experience and regulation of shame across studies. These interpretations are speculative, based on patterns rather than direct measurement and should be read with caution to avoid essentialist or stereotypical assumptions.

Face, Honour, and Social Harmony. Aligned with conventional cultural psychology, several studies interpreted group differences through frameworks of face and honour (Anolli & Pascucci, 2005; Kariyawasam et al., 2022; Matos et al., 2023; Zhong et al., 2008)**,** especially in Southern and Eastern Asian contexts. Shame was described as a relational, moral emotion tied to one's role and reputation in community or family life.

In Southern Asia, Kariyawasam et al. (2022) linked higher external shame in Sri Lankan participants to cultural and religious expectations around moral restraint and social conformity, which may increase sensitivity to social judgment. Similarly, Anolli & Pascucci (2005) associated with higher shame proneness among Indian participants, with a greater emphasis on social order and collectivist role responsibilities.

In Eastern Asia, Matos et al. (2022) interpreted high external shame scores in Japanese participants as reflecting honour-based systems that preserve relational harmony. In contrast, Zhong et al. (2008) found that American participants reported higher overall shame than Chinese participants. This was not attributed to true cultural differences in shame

sensitivity, but rather to culturally driven emotional expression styles; Chinese participants may have endorsed fewer shame responses to preserve face and avoid vulnerability.

External Shame vs. Internal Shame. Several studies explored whether culture influences self-appraisal (internal shame) versus relational appraisal (external shame). Broadly, findings suggested that external shame is more salient in collectivist cultures, while internal shame may be more typical of individualist contexts. Two out of three studies measuring external shame (Kariyawasam et al., 2022; Matos et al., 2023) found higher scores among collectivist groups (Sri Lankan, Japanese), attributing these to culturally embedded beliefs about social interdependence. Similarly, Grey et al., (2018) reported that higher NSE in Emirati women potentially reflects the cultural acceptability of this shame subtype within Muslim contexts. Across these settings, shame is considered relationally embedded and socially adaptive. However, other findings challenge this view.

Lutwak et al. (1998) found that Asian Americans scored highest on shame proneness using the TOSCA, which emphasises internal shame. This finding may reflect acculturation or bicultural identity. Likewise, Zhong et al., (2008) reported higher shame proneness in American than Chinese students, possibly due to conflated measurement of internal and external shame. Overall, patterns were mixed, suggesting both shame subtypes may operate across cultural contexts depending on identity and measurement.

Diasporic Identity. Three studies moved beyond simple cultural comparisons by examining diasporic identity or acculturation (Dorevitch et al., 2020; Grey et al., 2018; Su & Hynie, 2022). Su & Hynie (2022) demonstrated that shame regulation was influenced by both cultural heritage and exposure to host norms. Whereas Dorevitch et al. (2020) found no shame differences between Asian international and Australian domestic students. However, the latter study did not assess acculturation, integration, or cultural values, limiting its

interpretative power. Still, findings suggest that shame may be shaped not only by ethnicity but by familiarity and comfort with host culture norms, posing challenges for new migrants.

Cultural Regulation. The way shame is regulated also appears rooted in cultural values around emotional expression and social repair (Grey et al., 2018; Su & Hynie, 2022). Grey et al., (2018) found that Emirati women, compared to Irish women, were less likely to withdraw when feeling shame. This was interpreted as reflecting moral obligations and accountability within Muslim culture, positioning shame as reparative, not threatening. However, the generalisability of findings is limited to women. Similarly, Su & Hynie (2022) found that Mainland Chinese participants were more likely to seek support or problem solve when feeling shame, whereas avoidance-based responses did not vary by group. Together, findings suggest shame regulation differs cross-culturally, with proactive relational-based strategies potentially being more culturally influenced.

Summary

Overall, the synthesis revealed cross-cultural differences in shame, but explanations remain inconclusive due to inconsistent cultural design, varied measurement approaches, and uncontrolled confounders. While factors like independence, social harmony, and honour were proposed as cultural influences, most studies relied on broad cultural groupings without directly measuring cultural identity or values, limiting the strength of interpretation.

Table 5

Thematic Synthesis Matrix of Cross-Cultural Patterns in Shame

Study (Date)	**Cultural design (Grouping)**	**Shame Measure**	**Cultural Validity and Translation**	**Shame Pattern Across Cultures**	**Author's Cultural Interpretation**	**Limitations and Confounds**
Lutwak (1998)	Intra-national (US ethnic groups) Asian American, African American, Latinx American, White American	Test of Self-Conscious Affect (TOSCA)	NR	A one-way ANOVA revealed that levels of shame-proneness significantly differed across the four cultural groups, $F(3, 187) = 3.74$, $p < .01$. Asian Americans reported the highest mean levels of shame proneness ($M = 2.96$) compared to	Asian culture was interpreted as non-Westernised and collectivist, placing emphasis on social interdependence (i.e. communion). Western cultures like European American focus on independence (individualist). To preserve a communal, socially responsive orientation, individuals from non-Western cultures may have more frequent shame to meet	Gender was controlled for in cultural comparisons. Identification with culture or ethnic group norms and beliefs was not assessed. The sample was limited to college students. The authors did not assess whether participants were descendants or immigrants, nor did they assess the time they spent in the country.

				Latin, African, and European Americans. Differences were reportedly significant (p values NR for post hoc tests).	personal goals in line with the cultural group. Eastern cultures are likely more susceptible to shame (i.e. Asia) but less intense and for shorter durations than Western cultures. Therefore, higher shame proneness may not be "maladaptive" in such cultures. Cultural patterns in shame (appraisal, affect, regulation) are likely a result of cultural norms, self-identification (public, private, collective) and shame triggers.	Thus, acculturation was not controlled for.
Anolli (2005)	Cross-national (country of residence) Indian, Italian	Test of Self-Conscious Affect (TOSCA)	Cultural validation NR. TOSCA was translated into Italian	A mixed design ANOVA found significant differences between cultural groups, *F*	Differences between groups are likely to represent high social order, role obligations, and harmony in India. Shame may play a role in fulfilling collective responsibilities;	Evidence of selection bias due to limiting the sample to undergraduate students. All students were born and raised in their home countries and had no

			according to state guidelines and the back-translation procedure.	(1,2555) = 11.28, p<.001). Indian (M=58.06, SD = 8.13) participants reported higher mean levels of shame proneness than Italians (M=35.61, SD = 9.16).	focused on others rather than a solely personal failure. This challenges the simplistic East-West distinction of shame and guilt cultures, respectively. Both shame and guilt proneness are blended.	overseas experience, controlling for acculturation. No group differences were found in socio-economic status and educational level. Social desirability and difficulty recalling events could influence the validity of data collected from self-report questionnaires.
Zhong (2008)	Cross-national (country of residence) Chinese, American	Experience of Shame Scale (ESS)	The ESS was developed in China and has been psychometrically validated (internal reliability of	A MANOVA found a significant main effect for country in shame (F(11,408) = 38.670, *p*<.001). A post-hoc ANOVA found that American participants (M =	Finding reported to be inconsistent with other studies and could reflect to the cultural backgrounds of the two countries. Chinese culture is generally considered more implicit about saving face and outward emotional expression compared to American	Sampling bias was evident due to recruiting via universities. Within culture variation (i.e. urban vs rural areas) was not controlled for.

each subscale was between α = .7 to .86) The English version was retrieved by translation, and backwards translation was completed several times (found to be internally reliable, overall scale α = .92)	62.90, SD = NR) reported higher mean levels of shame proneness compared to Chinese participants (M = 58.71, SD =NR), which were significant (F = 8.04, p<.01).	culture, which may be more expressive. Therefore, the strength of feeling shame may not align with what was reported, with Chinese participants potentially more likely to provide a neutral than an extreme emotional response.	All Chinese students belonged to the Han nation (representing 90.56% of China's population) and did not have experience living in Western society. Therefore, acculturation was controlled for. Age and gender were matched across cultural groups. Participants were non-religious.

Grey (2018)	Cross-national (country of residence) Republic of Ireland, United Arab Emirates (UAE)	Guilt and Shame Proneness Scale (GASP)	NR.	UAE participants reported significantly higher shame–negative self-evaluation (M = 22.28, SD = 4.56) than Irish participants (M = 12.02, SD = 5.28), $t(233) = 16.00$, $p < .001$, $d = 2.08$. Irish participants scored significantly higher on shame–withdrawal (M = 16.43, SD = 4.40) than UAE participants (M = 14.28, SD = 4.63),	Negative self-evaluation is interpreted as a prosocial and adaptive response to shame, encouraging moral responsibility and behaviour. Negative self-evaluation is also correlated with measures of conscientiousness, altruism, and humility and less so with shame withdrawal. Such traits may enable participants from a Muslim culture to abide by their code of ethics. Shame withdrawal was interpreted as a maladaptive tendency rather than having a regulatory function. Irish cultures may promote a reaction of withdrawal from shame-inflicting transgression and avoidance of	Selection bias is evident due to recruiting only female university students, limiting the sample representativeness. The authors measured individualist and collectivist values, but there were no differences found between groups. A dichotomous view of culture is considered unhelpful and lacks nuances in cultural variation or multicultural values.

				t(232) = 3.63, p < .001, d = 1.47.	conflict, often associated with collectivism.	
Dorevitch (2020)	Mixed Intra-national and Diasporic (International student status as proxy) Asian International, Australian Domestic	Internalised Shame Scale (ISS)	NR.	No significant group differences were found in internalised shame between Australian domestic (M = 61.22, SD = 20.84) and Asian International (M = 61.16, SD = 20.72) students (t(622) = 0.03, p = .973).	Self-report measures rely on subjectivity; Asian participants may report less distress than Australians.	No significant differences were found for age and gender in shame. The generalisability of findings is limited to students. Socio-economic status and country of origin were not controlled for. Impression management, social desirability, and perceived mental health stigma could have influenced findings. No causal links can be made, nor can an assessment of changes over time.

Su (2020)	Mixed cross-national and diasporic (acculturation as proxy) Mainland Chinese (MC) International Chinese (IC) Chinese Canadian (CC) European Canadian (EC)	Self-Regulation of Shame and Guilt Scale (SRSGS)	MC participants completed the questionnaire in Mandarin. The SRSGS was developed by the author specifically for use with Chinese and Canadian participants. Shame categories were theoretically informed by literature and	A MANOVA found a significant main effect for cultural groups on shame regulation ($F(15, 839) = 3.60$, $p < .01$, $\eta^2 = 0.06$). A one-way ANOVA demonstrated a significant effect of cultural group on problem-focused coping ($F(3, 308) = 12.56$, $p < .01$, $\eta^2 = 0.11$), support seeking ($F(3, 308) = 7.17$, $p < .01$, $\eta^2 = 0.07$), and counterfactual thinking ($F(3, 308) =$	MC participants may be more likely to endorse the principles of "saving face" and not exposing shortcomings. Once cultural norms are violated, they might be more motivated to repair and problem solve to reestablish harmony in relationships. Action orientated responses may be part of identity development for MC participants living in collectivist cultural contexts. Shame is described as a functional emotion which motivates people to repair and restore self-image. Cultural norms are likely to shape this process and how shame is internalised and acted on.	Most participants were undergraduate students (potentially more individualist). Data was not collected from Hong Kong or Taiwan, which may have different cultural influences. Self-report bias with measurement. The affective experience of shame was not directly measured and therefore could be linked to both experience and regulation. Gender examined within MANOVA. Main effect and interactions with culture found on shame responses.

interviews, and therefore culturally tailored.	3.45, $p < .05$, $\eta^2 = 0.03$).
The SRSGS was forward and back-translated by two bilingual Chinese English Speakers and reviewed by a female experimenter.	No group differences were found for denial or avoidance. MC participants scored significantly higher on problem-focused coping (M = 1.44, SD = 0.11), support seeking (M = 0.99, SD = 0.1) than all other groups. MC participants reported significantly more counterfactual thinking (M = 1.57, SD = 0.12) than EC and CC's.

Matos (2021)	Multi-national (country of origin) Portugal, France, Australia, Singapore, Japan	External and Internal Shame Scale (EISS)	The measure was originally developed in Portuguese and validated. The Portuguese version was translated into English and French using the forward and backwards procedure. The Japanese version was translated from the	Significant differences were found between cultures for all shame dimensions, including global shame ($F(4, 1400) = 17.07$, $p < .001$), internal shame ($F(4, 1400) = 3.98$, $p = .004$) and external shame ($F(4, 1400) = 31.97$, $p < .001$). Post-hoc comparisons demonstrated that Japan had the highest level of external ($M=1.89$, $SD=0.89$, $p<.01$) shame and	Social ecology is likely to impact differences in what is considered shameful (collectivist vs individualist values). Collectivist cultures tend to view themselves in terms of their connections with others, and external influences more easily shape experiences. Higher shame in Japanese sample is likely protective to prevent bringing shame to others (i.e. family). Therefore, shame and honour systems are likely linked to people's behaviour and experience and appraisal of shame.	Comparisons rely on the assumption that shame-related words are equivalent, when they are not in their meaning and valence. An uneven gender distribution is evident within the sample, which could confound results. There is a lack of sample representativeness and selection bias. Ethnicity, social position, and marital status was not assessed or adjusted for. Age differences were found across the groups.

English version using the same procedure. Translations were completed by bilingual psychologists and researchers who were independent and native speakers.	global shame (M=1.76, SD = 0.76, p<.01) compared to all other countries, except for Australia, which showed no difference. Portugal, France, Australia and Singapore showed lower external shame scores than internal shame scores, while Japan showed the opposite pattern.	Singaporean participants composed of more westernised participants.
Translated items were inspected by individuals from the	Portugal (M=1.46, SD = .73) had lower internal scores compared to France (M=1.63, SD = .68)	

general population to assess clarity.	and Australia (M=1.67, SD = .92).
Singaporean participants completed the English version of the EISS.	
Pre-testing and clarity interviews were conducted in each country to confirm comprehension.	

Kariyawasam (2022)	Cross-national study (country of origin) *English speaking only Sri Lanka, UK	Others As Shamer Scale (OAS)	Cultural validation NR. All participants completed the English version of the questionnaire.	Sri Lankans (M=35.50, SD = 18.53) reported significantly higher external shame than UK (M=26.68, SD = 14.91) participants (F = 27.55, p < .001).	Cross-cultural differences in shame are also influenced by self-compassion. For example, in the UK group, higher external shame increased self-compassion, mediated by self-reassurance. In the Sri Lankan group, there were significantly higher levels of self-compassion compared to the UK group, thought to be a result of spirituality (Buddhism) and lack of fear of self-compassion. Interpretation of shame differences NR.	Religion was controlled for as a possible variable of cross-cultural differences observed (74% of Sri Lankans were Buddhist, 62% of the UK group were Atheists). Sri Lankans were significantly older than UK participants. Age and gender were controlled for. No direct assessment of cultural or group norms (i.e. collectivistic/individualistic. The samples were predominantly university students and only included English speakers, limiting generalisability.

Stone-Sabali (2023)	Intra-national (ethnicity-based) Asian Americans (ASA) African Americans (AFA) Latinx Americans (LA)	Test of Self-Conscious Affect (TOSCA)	NR.	ASA's reported significantly higher shame scores than AFA's (Mean Difference = 0.16, pd = 96%). No other racial-ethnic comparisons reached the 95% probability of direction (pd) threshold for significance.	Asian cultures have been characterised as shame-based, where shame is perceived as a socially useful emotion rather than unwanted or maladaptive in nature. Shame is thought to guide individuals in interpersonal relationships. Qualitative studies may be needed to understand why there are higher shame scores, as this is reportedly uncertain.	The location of the study was predominantly a white institution. The sample is non-representative and is limited to students. There may be unknown confounding variables. Self-report surveys increase the risk of social desirability, which is not adjusted for.

Note. Cognitive = Negative self-appraisal or beliefs about moral failings (i.e. I am a bad person); Affective = emotional intensity and self-feelings, i.e. worthlessness; Regulatory = Behavioural or coping response to shame (i.e. withdrawal, repair, or avoidance); TOSCA = Test of Self-Conscious Affect, GASP = Guilt and Shame Proneness Scale; ISS = Internalised Shame Scale; SRSGS = Self-Regulation of Shame and Guilt Scale; SCEQ = Self-Conscious Emotions Questionnaire; EISS = External and Internal Shame Scale; OAS = Others as Shamer Scale.

Discussion

This systematic review aimed to examine cross-cultural differences in trait-based shame, identify how shame was measured, and explore cultural factors influencing how shame is experienced and expressed. Across nine studies, the findings offered partial support for shame as a culturally patterned emotion, with socio-cultural context influencing shame expression. However, methodological and conceptual constraints impacted interpretation. This discussion summarises key findings in the context of the theoretical literature, highlights clinical implications, and provides directions for culturally sensitive research.

Summary of Main Findings

Most studies found significant cross-cultural differences in trait shame, with one exception (Dorevitch et al., 2020). Differences were shaped by region, study design, and the shame domain assessed. Cross-national studies generally reported higher global shame scores, particularly external, relational shame, in participants from traditionally collectivist countries (e.g., India, UAE, Japan, Sri Lanka) compared to individualist Western countries (e.g., Italy, Ireland, UK). While none of these studies directly measured cultural identity, their findings align with literature suggesting that collectivist cultures emphasise interconnectedness and social harmony, which may heighten shame in relational contexts (Kim et al., 2010; Kitayama & Salvador, 2024). In contrast, individualist cultures are described as more unique, autonomous and self-expressive (Kim & Sherman, 2007; Markus & Kitayama, 1991), with shame conceptualised as isolating and stigmatising (Bear et al., 2009; Furukawa et al., 2012; Sheikh, 2014). Shame context is deemed important to determine whether it is adaptive for survival (Mesquita & Frijda, 1992).

Importantly, cultural patterns were not uniform; Zhong et al. (2008) found that American participants reported higher shame proneness compared to Chinese participants, a

finding that the authors interpreted as potentially reflecting cultural display rules which promote emotional restraint in East Asian contexts (Kang et al., 2003; Mesquita & Frijda, 1992). Recent evidence supports this interpretation, as East-Asian participants relied heavily on shame avoidance, potentially as a means to preserve group harmony and fulfil relational obligations, even when internal distress existed (Chen et al., 2025; Song et al., 2024).

There are several potential explanations for these unexpected findings. First, the EISS encompasses multiple shame domains, including characterological, behavioural, bodily and familial shame. This broader scope and conflation of internal and external shame could have influenced participants' responses. Furthermore, authors recruited participants who were "Han Chinese" with no Western living experience, potentially minimising confounding from acculturation. Lower acculturation and/or completing the survey in person could have increased emotional restraint associated with face-saving norms, potentially inhibiting endorsement of shame via self-report, even if distress was high.

Shame Dimension as a Moderator

There was substantial heterogeneity in shame measures across studies, with the domain assessed appearing to moderate cultural findings. For instance, Asian participants in two studies scored higher on both internal and external shame compared to European groups (Anolli & Pascucci, 2005; Kariyawasam et al., 2022), while Emirati women (Grey et al., 2018) had higher cognitive NSE but lower shame withdrawal compared to Italian women. These domain-specific effects reinforce that trait shame is multidimensional, encompassing cognitive, emotional, and behavioural facets which may be differentially shaped by culture (Lear et al., 2022; Scheel et al., 2020).

Beyond Individualism vs Collectivism

Only one study tested measurement invariance across cultures (Matos et al., 2023), finding modest differences across five nations. Interestingly, shame levels varied even within "Western" countries (e.g., Portugal vs. France), and Japanese participants reported similar levels of external shame to Australians. These results highlight the limits of dichotomous cultural frameworks. For example, Singaporean participants, despite regional proximity to Japan, scored differently, likely due to multicultural influences (Huat, 2003). Cultural identity may be better understood through nuanced contextual factors rather than national categories.

Acculturation & Diasporic Identity

Studies utilising a diasporic design assume shame is shaped by both heritage and host culture. In the Australian study (Dorevitch et al., 2020) no significant differences in shame were reported between Australian and Asian International Students. One possible explanation for this divergent finding is the role of cultural adaptation and acculturation, which is known to shape emotion regulation (Butler et al., 2007; Cheung & Park, 2010; Ford & Mauss, 2015; Song et al., 2024). These findings could reflect convergent values within Australia's multi-cultural context, or International students internalising host-culture norms (Koleth, 2010). However, the cultural identity of participants and how identity changed over time could not be established, highlighting the benefit of assessing individual differences (Klein et al., 2024). Secondly, the ISS focuses primarily on cognitive internalised shame, which may lack cultural sensitivity, particularly in East-Asian contexts where external shame was more salient (Matos et al., 2023).

Thirdly, broader cultural fit, defined as the alignment between an individual's cultural values and those reinforced in their current environment, may also influence shame expression (Kang et al., 2003; Mesquita & Frijda, 1992). For recent migrants, poor cultural fit may inhibit emotional expression, increasing reliance on maladaptive coping (De Leersnyder

et al., 2014; Yoo & Miyamoto, 2018). Conversely, feeling understood or included may facilitate safe shame expression. These dynamics emphasise the need to operationalise and directly assess acculturation, cultural fit and individual differences (i.e. emotional norms) in future studies to understand variation in shame-related processes (Kitayama & Salvador, 2024). This is especially important in cultural contexts where mental health is stigmatised, as cultural factors may have a greater influence on shame than individual characteristics like gender or socio-economic status (Boiger et al., 2018; Yakeley, 2018).

Critical Appraisal

With this review being conducted as part of a Doctoral degree, it was necessary to balance pragmatics and methodological rigour. This review adhered to PRISMA reporting guidelines (Page et al., 2021) (See Appendix A and B) and the Cochrane Handbook for Systematic Reviews (Yenal et al., 2017), with particular attention paid to transparency and reproducibility. Pre-registration of the review protocol and amendments reduced the risk of selective reporting. The inclusion of a second reviewer at the screening and quality assessment phases enhances the credibility and reproducibility of the findings, especially as high agreement was reported.

A comprehensive and sensitive search was conducted using a robust and broad search strategy to retrieve relevant papers and balance breadth and precision. The search strategy was cross-checked by a specialist librarian and complemented by forward and backwards chaining, increasing confidence that a representative proportion of the empirical literature was synthesised up until March 2025. However, following the application of pre-defined eligibility criteria, the review sample ($N = 9$) was small. This could reflect the specificity of shame conceptualisation (trait-based generalised shame) and/or focusing on shame

specifically, rather than emotions as a group (Chen et al., 2025; Klein et al., 2024; Song et al., 2024; Van Hemert et al., 2007), highlighting a gap in cross-cultural emotion research.

Despite review strengths, there are several notable limitations to acknowledge. First, with shame being a multi-dimensional and conceptually complex construct, it is possible that the author inadvertently excluded potentially eligible studies when determining whether a study assessed "trait-based shame". Despite operationalising shame, articles did not always define trait shame, or the dimensions assessed, nor was the author aware of available coding systems, which adds a layer of subjectivity. A more thorough examination of measurement frameworks during protocol development would have enhanced consistency.

Second, the search strategy was limited by publication and language bias (Dundar & Fleeman, 2017) and only included peer-reviewed studies published in the English language. It would not have been pragmatically possible to translate papers meaningfully, especially given the contention around linguistic equivalence in shame terms cross-culturally (Liu & Giner-Sorolla, 2023; Sheikh, 2014). Grey literature was excluded due to feasibility constraints and to eliminate any potential sources of bias associated with the uncertainty of peer review. This decision risked excluding potentially high-quality eligible studies (i.e. doctoral theses) and culturally skewing the findings (Hopewell et al., 2007). However, the aim was to complement broad theoretical reviews and maintain methodological rigour (Alexander, 2020).

Third, while a standardised data extraction template was developed and piloted to ensure accuracy, it was conducted independently by the lead reviewer and could lead to human error in reporting. Dual data extraction would mitigate this risk for future reviews and enhance validity (Buscemi et al., 2006). Lastly, despite the review focusing on cross-sectional observation data to enhance comparability, there was considerable heterogeneity in cultural designs, which may ask different questions and limit the interpretability and cohesion of the

data synthesis (Matsumoto & Yoo, 2006). Finally, cross-sectional studies cannot infer causality or assess temporal change in shame; longitudinal or experimental designs would be necessary, especially when trait shame can fluctuate under stress (Seah et al., 2023; Spector, 2019).

Study Limitations

A range of methodological, cultural, and conceptual limitations were observed across the included studies, which influence the trust and interpretation, credibility, and generalisability of findings. Despite the inclusion of studies from various regions, there were notable absences geographically. Studies did not examine populations in Eastern Europe and Slavic cultures (i.e. Poland, Russia, Ukraine, Hungary), Central Asia (Uzbekistan, Kazakhstan), and the Pacific Islands (i.e. Fiji, Papua). Some ethnic origins were only represented in a USA context, such as Africa and Latin America. Participants from Singapore and the UAE were included; however, other regions of Southeast Asia (i.e. Thailand, Indonesia, Malaysia) and the Middle East (i.e. Saudi Arabia, Iran, Egypt) were absent. There was also a lack of breadth across East (i.e. Taiwan) and South Asia (i.e. Pakistan).

A key limitation across studies was how culture was operationalised. Most studies relied on broad cultural groupings based on nationality or ethnic origin as a proxy for cultural identity, interpreting findings through the collectivism-individual framework (Hofstede, 2011; Triandis, 1996) without direct measurement of individual differences. Assuming homogeneity across nations or ethnic groups overlooks within-group variation and has been discouraged by the American Psychological Association (2021). While such approaches are often pragmatic and offer insight into cultural trends, especially when resources are limited, they risk oversimplifying culture as a fixed entity with ascribed inherent properties, rather than dynamic and multifaceted (Adams & Markus, 2004).

Few studies consider more nuanced cultural definitions and adjust for potentially confounding factors such as acculturation, cultural fit, religion, or demographics. Therefore, limited conclusions were drawn regarding the mechanisms by which culture shapes shame. Individual-level approaches may offer a more nuanced approach to shame research, but may pose challenges to researchers. For example, authors would have to theoretically define cultures assessed, retrieve a random sample of participants from a large population embodying defined cultural characteristics, and individually measure the social, cultural, and psychological characteristics of participants (Matsumoto & Yoo, 2007).

Cultural limitations were also evident in shame measurement. Most studies inadequately reported cultural validation or adaptation of shame measures, with some exceptions. It was often unclear whether the measures selected were valid for the population sampled. Furthermore, several authors noted bias in assuming language equivalence when translating measures. Lastly, heterogeneity was evident in shame measures, spanning various emotion domains, which limits comparability across studies.

Overall, studies were of moderate quality but had key sources of methodological bias, which reduces trust in the findings, including reporting sample size justification, participant demographics, and attrition. Many studies relied on student populations from urban academic settings. Students are likely to represent a more individualist culture and have an independent self-construal, even within collectivist societies (Hofstede, 2001; Na et al., 2010). Student populations raise questions about WEIRD bias (Westernised, Educated, Industrialised, Rich, and Democratic) and their lack of representation of the wider population (Henrich et al., 2010). Self-report designs are particularly sensitive to response bias (van de Mortel, 2005) and potentially even more so in contexts where emotions are avoided (Song et al., 2024).

Clinical and Theoretical Implications

The findings of this review have several clinical and theoretical implications for cross-cultural researchers or professionals working with clients distressed by shame. Notably, the review partially supports shame being culturally patterned and highlights variance in how shame is experienced, appraised, and regulated across various cultural groups. Therefore, clinicians and therapists have a role in engaging in culturally sensitive assessment, formulation, and intervention, with an aim to understand shame within a person's cultural context. Attention should be paid to avoid making blanket assumptions across cultural, ethnic, or national groups, or relying on universal responses to shame.

Furthermore, if practitioners seek to understand shame via psychometric assessment, culturally adapted or validated tools are necessary to ensure validity in culturally diverse clients. It may also be worthwhile considering a holistic assessment of various shame dimensions (internal vs external, experience vs regulation) and complement psychometric tools with qualitative approaches (i.e. clinical interviews) to understand the person's cultural, social, and ecological context. Culturally grounded psychoeducation may be important when working with adults who experience shame, so they can understand the impact and function of shame in the context of perceived cultural fit and their cultural identity.

Future Direction

Most studies in this review assessed shame cross-culturally in broad national or ethnic groups, with only one study specifically measuring cultural values, which highlights the need for future studies to contextualise shame experiences to allow for a nuanced understanding. Future reviews should consider focusing on phase IV cultural research, which directly measures and links key cultural logics (i.e. cultural practices or attitudes) with differences found between groups, and empirical support for cultural emotion theories (Matsumoto & Yoo, 2006) such as Hofstede et al,, (2001, 2011) work on cultural dimensions, self-construal

(Kitayama & Salvador, 2024) or Schwartz's Universal Values Theory (Schwartz, 1994, 2012).

Despite cross-cultural psychology relying historically on dichotomous distinctions, several authors discuss the importance of moving away from making blanket assumptions and directly assessing culture and individual differences. However, even then, measures may lack cultural sensitivity (Grey et al., 2018). Therefore, utilising mixed-method and qualitative approaches may be important to understand shame within its socio-cultural context. For meaningful conclusions to be drawn, shame measures should be specific, operationalised, and culturally validated. Transparency should also be improved by reporting the full demographic participant profile across the sample and split by cultural groups.

Furthermore, despite challenges to the inclusion of a representative sample (i.e. subject availability, researcher geographic location), overcoming these longstanding challenges is necessary by utilising systematic sampling procedures, rather than relying on non-probability sampling (Ilesanmi, 2009). Lastly, improved reporting and quality are necessary to advance research, including reporting of sample size justifications, demographic information, sampling procedure, and methods for dealing with attrition.

To address limitations and enhance the comparability, researchers should consider the creation of a formal shame classification taxonomy, against which shame questionnaire items are mapped. As a minimum, cross-cultural shame studies should specify: (i) whether the measure is trait or state; (ii) global or context-dependent; (iii) self-focused or other-focused; and (iv) which psychological domain is assessed (i.e. cognitive, affective, regulatory). This specification is crucial for ensuring cross-cultural comparisons are meaningful.

Conclusion

This review found partial support for cross-cultural patterning of trait-based shame, with variability across regions and shame domains assessed. Cross-cultural differences were interpreted as representing different social norms and values. However, results remain largely inconclusive due to conceptual inconsistency, methodological limitations, and the limited geographic scope covered. To advance the field, cross-cultural researchers must prioritise definitional clarity, cultural sensitivity, and methodological transparency. Shame may be treated as a culturally embedded experience, requiring nuanced assessment in both research and clinical practice. The findings reflect growth in methodological quality over time; however, the underlying mechanism explaining cultural differences warrants investigation.

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Appendices

Appendix A: PRISMA 2020 Abstract Checklist (Adapted from Page et al., 2021)

Section and Topic	Item #	Checklist item	Reported (Yes/No)
TITLE			
Title	1	Identify the report as a systematic review.	Yes
BACKGROUND			
Objectives	2	Provide an explicit statement of the main objective(s) or question(s) the review addresses.	Yes
METHODS			
Eligibility criteria	3	Specify the inclusion and exclusion criteria for the review.	Yes
Information sources	4	Specify the information sources (e.g. databases, registers) used to identify studies and the date when each was last searched.	Yes

Risk of bias	5	Specify the methods used to assess risk of bias in the included studies.	Yes
Synthesis of results	6	Specify the methods used to present and synthesise results.	Yes
RESULTS			
Included studies	7	Give the total number of included studies and participants and summarise relevant characteristics of studies.	Yes
Synthesis of results	8	Present results for main outcomes, preferably indicating the number of included studies and participants for each. If meta-analysis was done, report the summary estimate and confidence/credible interval. If comparing groups, indicate the direction of the effect (i.e. which group is favoured).	Yes
DISCUSSION			
Limitations of evidence	9	Provide a brief summary of the limitations of the evidence included in the review (e.g. study risk of bias, inconsistency and imprecision).	Yes
Interpretation	10	Provide a general interpretation of the results and important implications.	Yes

OTHER			
Funding	11	Specify the primary source of funding for the review.	Yes
Registration	12	Provide the register name and registration number.	Yes

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71.

Appendix B: PRISMA Main Checklist (Page et al., 2021)

Table B1

Checklist of Preferred Reporting Items for Systematic Reviews and Meta-Analyses

Section and Topic	Item #	Checklist item
		TITLE
Title	1	Identify the report as a systematic review.
		ABSTRACT
Abstract	2	See the PRISMA 2020 for Abstracts checklist.
		INTRODUCTION
Rationale	3	Describe the rationale for the review in the context of existing knowledge.
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.

METHODS		
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.

Data items	0a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.
	0b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.
Study risk of bias assessment	1	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.
Effect measures	2	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.
Synthesis methods	3a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).

	3b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.
	3c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.
	3d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.
	3e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).
	3f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.
Reporting bias	4	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).

Certainty assessment	5	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.
		RESULTS
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.
	6b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.
Study characteristics	7	Cite each included study and present its characteristics.
Risk of bias in studies	8	Present assessments of risk of bias for each included study.

Results of individual studies	9	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.
Results of syntheses	0a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.
	0b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.
	0c	Present results of all investigations of possible causes of heterogeneity among study results.
	0d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.
Reporting biases	1	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.

Certainty of evidence	2	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.
DISCUSSION		
Discussion	3a	Provide a general interpretation of the results in the context of other evidence.
	3b	Discuss any limitations of the evidence included in the review.
	3c	Discuss any limitations of the review processes used.
	3d	Discuss implications of the results for practice, policy, and future research.
OTHER INFORMATION		
Registration and protocol	4a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.
	4b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.

	4c	Describe and explain any amendments to information provided at registration or in the protocol.
Support	5	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.
Competing interests	6	Declare any competing interests of review authors.
Availability of data, code and other materials	7	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.

Appendix C: Database Search Strings

Table C1

Search Strings and Limits Applied Across Databases

Database	Search Terms
SCOPUS	cultur* OR cross-cultural OR crosscultural OR cross-national OR crossnational AND shame Limits applied: Document type: article; Language: English
PsycINFO	"Culture (anthropological)"/ OR cross cultural psychology/ OR cultural diversity/ OR "racial and ethnic groups"/ OR cultur*.mp. OR cross-cultural.mp. OR crosscultural.mp. OR cross-national.mp. OR crossnational.mp. OR exp Cross Cultural Psychology/ OR exp Cross Cultural Differences/ AND shame.mp. OR Shame/ Limits applied: Peer-reviewed journals; Language: English

MEDLINE	1: culture/ OR cross-cultural comparison/ OR cultural diversity/ 2: cultur*.mp. 3: cross-cultural.mp. 4: cross-national.mp/ 5: crosscultural.mp. 6: crossnational.mp. 7: 1 OR 2 OR 3 OR 4 OR 5 OR 6 8: shame.mp. OR Shame/ 9: 7 AND 8 10: Limit to English language

Appendix D: Data Extraction Template

Study details (author, title, location, design, cross-cultural comparison, aims)
Sample characteristics (age range, gender, any other relevant information) Mean and SD by total sample and group
Outcome Measures (reliability, validity, cultural validity, translation)
Statistics of primary comparisons/analysis plan (in relation to RQ – shame measure)

Key findings of primary comparisons (in relation to RQ- shame measure)
Quality indicators (any key information reported)
Limitations Reported

Interpretations of cross-cultural findings (Discussion)
Relevant references

Appendix E: ***AXIS Tool (Adapted from Downes et al., 2016)***

Appraisal tool for Cross-Sectional Studies (AXIS)

	Question	Yes	No	Don't know/
Introduction				
1	Were the aims/objectives of the study clear?			
Methods				
2	Was the study design appropriate for the stated			
3	Was the sample size justified?			
4	Was the target/reference population clearly			
5	Was the sample frame taken from an appropriate			
6	Was the selection process likely to select			
7	Were measures undertaken to address and			
8	Were the risk factor and outcome variables			
9	Were the risk factor and outcome variables			
10	Is it clear what was used to determined statistical			
11	Were the methods (including statistical methods)			
Results				
12	Were the basic data adequately described?			
13	Does the response rate raise concerns about non-			
14	If appropriate, was information about non-			
15	Were the results internally consistent?			
16	Were the results presented for all the analyses			
Discussion				
17	Were the authors' discussions and conclusions			
18	Were the limitations of the study discussed?			
Other				
19	Were there any funding sources or conflicts of			
20	Was ethical approval or consent of participants			

Appendix F: ***Table of Shame Measures Utilised across the Included Studies***

Table F1

Description of Shame Measures Used Across Studies

Measure	**Cited Paper**	**Description**	**Dimension and Focus**	**Strengths and Limitations**
Test of Self-Conscious Affect (TOSCA)	Tangney et al., (1992) Tangney & Dearing (2002)	The TOSCA is a scenario-based measure of characteristic shame and guilt-proneness. It consists of 15 brief scenarios (10 negative, five positive), each with associated responses for separate subscales for shame, guilt, externalisation and detachment. Participants rate each scenario on a 5-point scale (1 = not likely, 5 = very likely), indicating their likelihood of responding in the manner described (i.e. "*feel like you wanted to hide*"). Higher scores reflect greater shame and guilt proneness.	Cognitive Regulatory* Internal/Self-Focused	The scenarios and responses were generated initially from the affective, behavioural, and cognitive reactions of college students and adults rather than the experimenter, which enhances ecological validity. The TOSCA is a widely utilised shame and guilt proneness measure from which other measures have been developed and/or are compared against.

		The TOSCA-3 is an updated original version, which includes 16 refined scenarios and response options for enhanced reliability. Participants read a scenario (i.e. "*You make plans to meet a friend for lunch. At five o'clock, you realise you have stood your friend up*") and indicate their most likely response (i.e. "*I would think I'm inconsiderate*"), mirroring the original version.		The original TOSCA demonstrated retest reliability of .85 for shame and acceptable internal consistency (α = .76) (Tangney et al., 1992). Psychometric properties were maintained for the TOSCA-3 (α =.76 to .88, (Tangney & Dearing, 2002). A key limitation of the TOSCA is that emotional and behavioural responses to transgressions are confounded. There is no clear differentiation between negative evaluation and withdrawal.
Experience of Shame Scale (ESS)	Qian et al., (2000)	The English version of the ESS questionnaire includes 29 items measuring three areas of shame (characterological, behavioural, and body).	Cognitive Affective	The Chinese version of the ESS was validated on a large sample of 984 Chinese college students.

The items cover four areas of characterological shame (personal habits, manner with others, sort of person you are, personal ability) and three areas of behavioural shame (doing something wrong, saying something stupid, failure in competitive situations). Bodily shame refers to feeling ashamed of any part of the body. For each area of shame covered, there are three related items which ask about the experiential component (i.e. *have you felt ashamed of*), cognitive component ("*have you worried about what other people think of your personal habits*") and behavioural component ("*Have you tried to cover up or conceal any of your personal habits*").	Regulatory Internal, Self-Focused External, Other-Focused	The study demonstrated test-retest reliability (0.88), internal reliability of subscales (α = 0.70 to 0.86) and confirmed factor structure (Qian et al., 2000). The English scale without the family shame component demonstrated test-retest reliability over 11 years (0.83) and high internal consistency (α = 0.92) (Andrews et al., 2002) amongst 163 English college students. Construct validity was also established by items in the ESS being significantly correlated with the TOSCA shame subscale (Andrews et al., 2002).

		Participants respond on a Likert scale representing how often they have felt shame in each condition in the past year (1 = not at all, 4 = often). Higher total scores indicate higher shame proneness, ranging from 25 to 100. The alternative Chinese version of the ESS developed includes a fourth shame dimension, focusing on shame concerning the family.		
Guilt and Shame Proneness Scale (GASP)	Cohen et al., (2011) Makogon and	The GASP is a self-report scenario-based measure examining individual differences in trait-based shame and guilt in the context of public transgressions. Respondents are presented with 16 real-life scenarios featuring a range of personal transgressions and typical reactions. Respondents must rate their propensity to	Cognitive Affective* Regulatory	The GASP directly examines negative self-evaluation and behavioural tendencies, separating the two dimensions of shame proneness so they can be evaluated across cultures.

Enikolopov (2013)	experience shame and guilt by rating how likely they are to react as described in the item-scenario (1=very unlikely, 7 = very likely). For example, "*You make a mistake at work and find out a coworker is blamed for the error. Later, your coworker confronts you about your mistake. What is the likelihood that you would feel like a coward*?".	Internal, Self-Focused	Makogon and Enikolopov (2013) argue that the GASP is a progressive tool in assessing moral emotions and has both theoretical and practical value as it differentiates between guilt and shame proneness and was developed from a combination of pre-established validated measures, such as the TOSCA-3.
	The GASP includes two guilt subscales (negative behaviour evaluations and repair action tendencies) and two shame subscales (negative self-evaluation = 4 items, and withdrawal = 4 items). Shame negative self-evaluation items describe feeling bad about oneself (i.e. *you would feel like a bad person*) and shame withdrawal items describe action tendencies focusing on hiding or		All four subscales have been found to be internally reliable amongst a sample of 862 adults (across 45 US States) and 450 undergraduate students in the United States. The four-factor structure demonstrated good model fit in a sample (Cohen et al., 2011).

		withdrawing from public (i.e. *you would avoid guests until they leave*). Shame subscales are described to be indicative of dispositional shame proneness and focus on public transgressions, as opposed to private.		All internal reliability scores exceeded the benchmark of .60, which is considered clear evidence of reliability for a scenario-based measure with four items per subscale (Cohen et al., 2011).
Internalised Shame Scale (ISS)	Cook (1988)	The ISS is a 30-item measure designed to assess trait shame through an underlying factor termed "*inferiority*" (one's self-evaluation as being deeply inferior). Participants respond to a series of statements on a 5-point rating scale (1 = never, 5 = almost always). The measure comprises two subscales, a 24-item scale measuring internalised shame and a 6-item self-esteem scale. Of the total items, 24 items are summed to create a total shame score ranging from 24-120, with higher	Cognitive Affective Regulatory Internal, Self-Focused	The ISS has demonstrated high temporal stability and internal consistency (α = 0.88 to 0.96) and adequate construct validity in clinical and non-clinical populations (Del Rosario & White, 2006; Rybak & Brown, 1996). Both subscales have also demonstrated a high level of stability across a 14-week test–retest period.

		scores indicating greater internalised shame. Six of the included items assess self-esteem. The ISS items are based on intensely negative language and phenomenological descriptions of the experience of shame. For example: "*I would like to shrink away when I make a mistake*", "*I feel like I am never quite good enough*", "*I think others are able to see my defects".*	External*	The internal reliability within the study utilising this measure in the review was also high (α = 0.97) (Dorevitch et al., 2020). Therefore, the ISS appears to be a reliable instrument for measuring trait shame across various populations and study samples. The ISS has been widely used and found to be a useful tool for research as well as clinical screening and treatment monitoring (Del Rosario & White, 2006).
Self-Regulation of Shame	Su & Hynie, (2022)	The SRSGS is a newly developed 30-item scale measuring shame and guilt regulation (responses to feeling shame or guilt). 23 item responses were created	Regulatory (Cognitive,	The original 17-item scale from which it was developed had high internal consistency in

and Guilt Scale (SRSGS)	Qian-Mingyi, et al., (2003)	from 17 items in a study with Chinese participants (Qian-Mingyi et al., 2003), and seven items were supplemented from the TOSCA. The SRSGS is a multimodal shame regulation measure encompassing cognitive, behavioural, and somatic shame response strategies across repeated hypothetical scenarios, capturing trait-like response tendencies. Respondents are asked to imagine themselves in five scenarios (i.e. "*you are at a party and talking with some friends about classes you took last term. You make a joke about how easy one class is, and how dumb a person would have to be not to get an A in this class. One of your friends looks shocked and hurt, and you suddenly remember her telling you she only got a D in*	Behavioural, Somatic Styles) Self/Other dimension N/A	Chinese participants (α = .94) (Qian-Mingyi et al., 2003). The measure was created to address gaps in the literature and examine shame regulation strategies that were culturally represented in Chinese and North American respondents. The original scale (Qian-Mingyi et al., 2003) was amended by separating compound items into individual components and combining redundant items, which improves measurement precision. The 30 items were initially categorised into nine response types and piloted with Chinese and European Canadians to confirm the main themes

the course last term and had to take the course again. You realise that she must think you are talking about her") and indicate how likely they are to use each strategy from -3 to 3 (-3 = Never, 0 = Unsure, 3 = Definitely). Example response strategies include: "Confront the problem directly", "apologise for my bad behaviour", "wish I had never done it".

In total, there are five shame regulation sub-scales, including: approach, avoidance, counter-factual thinking, support seeking, and self-soothing. Counterfactual thinking is defined as thinking of something that is contrary to fact and how the past might have turned out differently to achieve a better outcome. Approach strategies are ideas or actions intended to deal with the situation. Avoidance is keeping and final five strategies. This enhances cultural sensitivity, validity, and conceptual clarity. A rigorous approach was taken to develop the questionnaire (Su & Hynie, 2022)

A broad range of shame regulation strategies is captured, offering insight into typical response styles across interpersonal contexts. However. while responses reflect trait-like tendencies, the scenario-based format does not assess shame proneness or internalised appraisals directly.

Unlike measures that conceptualise behaviours like withdrawal as part of the shame experience, this scale frames them as post-shame regulatory strategies, which may limit direct comparability with trait shame measures.

		away from or preventing something from happening. Self-soothing is calming and relaxing the body or mind, and seeking social support is asking for help.		
External and Internal Shame Scale (EISS)	EISS; Ferreira et al., 2020)	The EISS is an eight-item self-report instrument designed to measure trait shame (the propensity to experience shame across various scenarios). The measure is separated into three sub-scales, including external Shame (4 items), internal Shame (4 items) and global shame (global sense of the entire shame experience). Participants are asked to rate each item in relation to how they feel in several aspects of their life, using a 5-point scale (0 = never, 4 = always) with higher scores representing higher trait shame.	Cognitive, Affective Internal, Self-Focused External, Other Focused	In the original Portuguese version, all three EISS scales were found to be internally consistent (α = .89 global, α = .80 external, α = .82 internal (Ferreira et al., 2020). The scale was developed based on a literature review and a solid theoretical foundation, which identified four core clinically relevant shame domains related to the shame experience and present in both external and internal shame. However, given that shame is now understood as a multi-dimensional construct, content areas besides

		Each item is based on four shame domains, including Inferiority/Inadequacy, Exclusion/Isolation, Emptiness and Criticism. For example, *"other people see me as inferior to them", "I don't feel part of any friend group", I am unworthy as a person" and "I am judgmental and critical of myself".*		these for domains are not explicitly measured and may be important. The EISS is a brief and reliable self-report measure which operationalises shame by assessing both external and internal shame as conceptualised by the biopsychosocial model. Concurrent validity has also been demonstrated by strong, significant associations being found with other shame measures such as the OAS (Goss et al., 1994) and the self-criticising subscale of the Forms of Self-criticising and self-reassuring scale (SC-FSCRS) (Halamová et al., 2018).
Others As Shamer	Allan et al., 1994)	The Other As Shamer Scale (OAS; Goss et al., 1994) is an 18-item measure developed to assess external shame, specifically, how individuals believe they are evaluated	Cognitive, Affective*	The development of the measure contributed to gaps in the current literature, as there was no measure that simultaneously assessed both

Scale (OAS)	Goss et al., (1994)	by others. Goss et al. (1994) proposed that trait shame encompasses not only internal self-evaluations of inferiority but also the perceived negative judgments of the self by others. To capture this dimension, they modified the Internalised Shame Scale (ISS), reframing items to reflect others' perspectives. The OAS items follow the format "*others see me as*…", focusing on perceived external judgment. For instance, the ISS item *"I feel like I am never quite good enough"* was adapted to *"I feel other people see me as not good enough."*. Six items from the ISS were excluded as they could not be meaningfully transformed to reflect an external viewpoint. The scale uses a 5-point Likert scale ranging from 0 (*never*) to 4 (*almost always*), asking participants to rate how often they believe others make	External, Other Focused	external and internal shame feelings, as well as a global sense of shame. This development advances the research on shame and its transdiagnostic nature. A high internal consistency (α = .96) was reported in a sample of Sri Lankan and UK participants (Kariyawasam et al., 2022). Formal psychometric properties for the OAS were not documented in the two validation papers reported by the study authors (Allan et al., 1994; Goss et al., 1994). The OAS was found to correlate significantly with the ISS, was described to have satisfactory internal reliability and strong concurrent validity.

	certain evaluations of them. A total score is calculated by summing item responses, following the same scoring procedure as the ISS.	A three-factor structure was identified and included Inferiority (being seen as less than others), Emptiness (being perceived as lacking essential qualities or fulfilment) and mistakes (beliefs about being judged harshly for errors).

Note. Where relevant information about the shame measures was not fully reported in the included studies, details were supplemented using original validation papers or key sources cited by the authors to enhance clarity and contextual understanding of the shame measures used. It was not possible to retrieve the full list of items for several measures as the measure was not provided in the study or the validation paper (i.e. TOSCA). Sample items are included instead, as full access typically requires author permission or purchase through a test publisher. Therefore, only information freely available is reported. Domains are categorised as follows: (1) Cognitive - thoughts, beliefs, and appraisals about the self or others. (2) Affective - emotional responses or feelings. (3) Regulatory – strategies or processes used to manage thoughts or emotions. (4) Internal (self-focused) - reflecting how individuals view or evaluate themselves. (5) External (other-focused) - reflecting how individuals believe others view or evaluate them. Shame measures were marked according to whether they explicitly assessed a domain. An asterisk (*) indicates that an item implicitly infers or taps into the domain without directly measuring it, which could have implications for conceptual comparisons made. Some of the references were not retrievable and are included to credit the authors cited in the studies that met eligibility for inclusion in this review.

Section Two: Empirical Study

Examining relationships between benevolent childhood experiences, shame regulation and somatic symptoms in adolescents: a cross-sectional study

Abstract

Objectives: Shame is a multidimensional self-conscious emotion which has both adaptive and maladaptive qualities. While shame is linked with adolescent psychopathology, its association with somatic symptoms is underexplored. This study examined whether shame regulation predicted somatic symptoms after controlling for demographics and benevolent childhood experiences (BCE's), replicated associations between shame and internalising symptomology, and examined whether BCE's had a protective role.

Methods: A cross-sectional survey was conducted between 24th March 2023 and 23rd June 2023. A convenience sample of 239 adolescents (13 to 17 years) was recruited from mainstream schools in Yorkshire and completed validated self-report measures of BCEs, shame regulation, anxiety, depression, and somatic symptoms. Data was analysed in SPSS-29 using non-parametric correlation and two hierarchical regression models.

Results: Maladaptive shame regulation styles were significantly and positively associated with all distress measures. Regression models (controlling for age, sex, socio-economic status, ethnicity, and BCE's) demonstrated that internalising shame regulation (attack self and withdrawal) uniquely predicted both somatic ($\beta = 0.480$, $p < .001$) and internalising symptoms ($\beta = 0.644$, $p < .001$). Attack-other also predicted internalising ($\beta = 0.165$, $p = .005$) but not somatic symptoms. Neither avoidance nor adaptive shame regulation reached significance.

Conclusion: Findings suggest that shame regulation is an important transdiagnostic mechanism in adolescent psychopathology. Specifically, the combination of heightened conscious awareness of shame, immediate withdrawal and self-blame warrants further investigation, given that they underlie internalising shame regulation styles.

Practitioner Points

- Shame regulation, especially internalising styles, strongly predicted adolescent emotional and physical distress. Clinicians should seek to understand and contextualise shame regulation in adolescence as part of routine assessment and formulation, to help young people build self-awareness.
- Psych-social treatments could target internalising shame regulation, and the underlying psychological process (i.e. self-blame and criticism) to promote mental health and wellbeing in adolescents.
- Externalising shame regulation may also contribute to internalising symptoms, highlighting the importance of recognising hidden vulnerabilities, especially when shame is directed outward (i.e. blaming others, aggression).
- Somatic symptoms may represent unresolved shame distress in adolescents. Targeting shame through psychoeducation or emotional processing may reduce both psychological and physical symptoms.
- BCEs appeared to have a small independent contribution to adolescent distress, suggesting a potentially protective effect. BCE's could be a key target for psychosocial interventions and encouraging relational safety in family systems.
- As age was positively associated with somatic symptoms and avoidance, clinicians could screen and target these groups proactively, as problems may occur later in life.
- Adaptive shame regulation had a weak association with anxiety and depression symptomology but did not predict outcomes. Healthy shame processing may need to be explicitly taught or developed through shame-specific skills building.
- Validated shame regulation tools could be utilised and developed to guide interventions and reduce the risk of internalising and somatic distress.

Introduction

Adolescence is a prolonged developmental period characterised by various cognitive, social, and psychological changes (Cunha et al., 2012; Reimer, 1996). During this period, adolescents can struggle with identity and become increasingly self-aware, which may heighten sensitivity to shame (Cunha et al., 2012; De France et al., 2017; Gilbert & Irons, 2009) and vulnerability to mental health difficulties (Ghandour et al., 2019). Shame is strongly associated with psychological distress in both adults (Fergus et al., 2010; Kim et al., 2011; Schoenleber et al., 2014; Shahar et al., 2015; Sullivan et al., 2020a) and adolescents (Gambin & Sharp, 2018; Muris & Meesters, 2014; Wu et al., 2021). However, the somatic association with shame is underexplored, with few studies focused on adults (Erbildim & Nweke, 2025a; Fritch, 2018; Popoluska et al., 2024) and even fewer on adolescents.

While Adverse Childhood Experiences (ACE's) are well-known predictors of shame and characteristics captured in measures of somatisation, potentially protective factors, like Benevolent Childhood Experiences (BCE's) are often overlooked. BCE's reflect early positive experiences featuring relational safety, social support, and predictability (Almeida et al., 2021). This cross-sectional study addresses these gaps by exploring these three key areas: adolescent shame regulation, somatic distress, and the role of BCE's (Nahar et al., 2025).

Conceptualising Shame in Adolescence

Shame is a complex and multidimensional emotion (Lear et al., 2022; Rodrigues, 2013; Tignor & Colvin, 2017) comprised of a biological affective experience, cognitive appraisals, and action tendencies theorised to aid self-preservation in social relationships (Gilbert, 2007; Martens, 2005; Tracy & Robins, 2004). Shame is defined as a self-conscious emotion as it involves negative global evaluations of the self as flawed or defective (Lear et al., 2022; Miceli & Castelfranchi, 2018; Nathanson, 1992) and typically arises from

perceived failure to meet personal or interpersonal standards and/or the threat of being rejected (Martens, 2005). Shame shifts cognitive attention towards incompetence, inhibits positive affect (Nathanson, 1992) and leads to global attributions of the self as flawed, negatively impacting self-esteem (Tangney & Dearing, 2002). This study focused on shame, given its maladaptive consequences when internalised or ineffectively regulated (Elison, Pulos, et al., 2006; Lear et al., 2022).

Shame is believed to emerge between the ages of 18 and 24 months, and continues to evolve throughout the lifespan (Lewis, 2007). Adolescence is a critical time for the development of self-conscious emotions, with shame intensifying during this period due to increased self-awareness, peer sensitivity, and identity concerns (De France et al., 2017; Gilbert & Irons, 2009). Adolescents are overly focused on social threat and evaluation, which are common shame triggers (Gilbert & Irons, 2009). Adolescence provides an optimal developmental window for exploring how individuals cope with shame, as relationships change and relational meaning is constructed (Lazarus, 2006; Lazarus & Folkman, 1984).

To date, a strong-established link has been found between shame and both internalising (i.e. anxiety, depression) and externalising symptoms (i.e. anti-social behaviour, aggression) (Gambin & Sharp, 2018; Liang et al., 2024; Muris et al., 2015; Reimer, 1996; Stuewig & McCloskey, 2005; Sullivan et al., 2020a; Wu et al., 2021). However, the findings largely represent specific populations (i.e. forensic, clinical), shame regulation and bodily distress continue to be understudied, and many authors do not control for contextual confounders. Social context and shame dimension have the potential to differentially impact psychopathology (Rollins & Crandall, 2021; Scheel et al., 2020). Therefore, replicating and extending these findings is necessary to broaden our understanding of adolescent distress.

Shame Regulation

While transient experiences of shame can be adaptive, motivating moral behaviour, prosocial repair and social cohesion, the psychological impact of shame is arguably shaped by its persistence, intensity, and relational context (Bastin et al., 2016; Lear et al., 2022; Lewis, 1992; Tignor & Colvin, 2017). Shame coping, in particular, is believed to influence long-term emotional well-being and vulnerability to psychopathology (Dyer et al., 2017). This study draws on Nathanson's (1992) Compass of Shame model (See figure 1), which conceptualises four defensive shame scripts: Withdrawal, Attack Self, Attack Other, and Avoidance. These scripts are theorised to develop in early childhood as defensive adaptations to overwhelming affect and social threat, providing short-term relief without addressing the shame source (Nathanson, 1992). Avoidance involves denial, suppression or distraction; Withdrawal reflects rapid disengagement and behavioural isolation; Attack Self involves internalised self-criticism or contempt; and Attack Other externalises distress through blame, hostility or aggression (Elison, Lennon, et al., 2006; Elison, Pulos, et al., 2006; Nathanson, 1992). Shame scripts can be adopted situationally or simultaneously, but are thought to become stable over time (Elison, Lennon, et al., 2006; Elison, Pulos, et al., 2006).

These theoretical foundations underpin the Compass of Shame Scale (CoSS), a widely used shame-specific emotion regulation measure employed in this study (Elison et al., 2006). The CoSS has a strong theoretical grounding, is sensitive to individual differences, and has been psychometrically validated in adolescents (Nyström & Mikkelsen, 2013; Paulo et al., 2020). Maladaptive shame scripts, which detract from social repair, have been linked to anxiety, depression, low self-esteem and relational difficulties (Elison, Pulos, et al., 2006; Leach & Cidam, 2015; Nyström & Mikkelsen, 2013; Szentágotai-Tătar & Miu, 2017), with avoidance in particular, implicated in poor acknowledgement of distress and psychosomatic expression (Okur Güney et al., 2019). This study builds on these findings by examining how shame regulation styles differentially relate to somatic symptoms in adolescence.

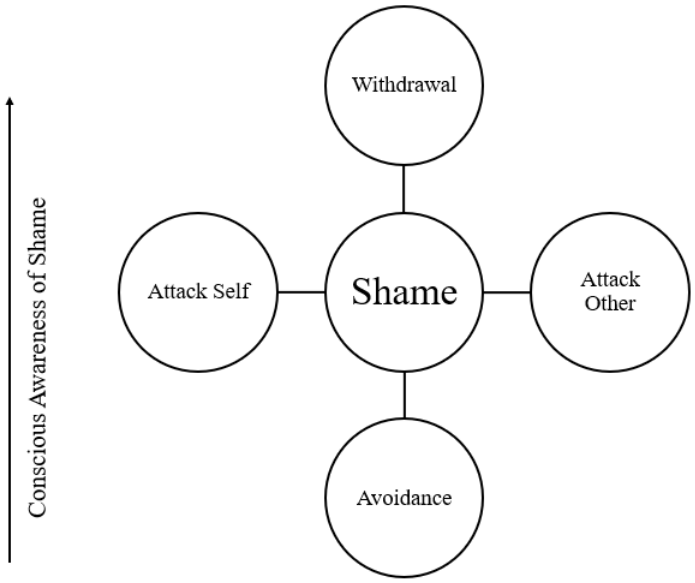

Figure 1

Shame compass model adapted from Nathanson (1992)

Adolescent Somatic Symptoms

Somatic symptoms are bodily complaints (e.g. headaches, fatigue) not fully explained by medical conditions (Henningsen et al., 2018; Okur Güney et al., 2019). Somatic symptoms are common in adolescence, with a prevalence as high as 25%, especially among those diagnosed with somatic symptom disorder (SSD; Van Geelen et al., 2015; Yavuz et al., 2018, 2019). With SSD being frequently comorbid with psychological distress, researchers have sought to understand the link between somatic symptoms and psychopathology (BMJ, 2023; Van Geelen et al., 2015; Yavuz et al., 2019) to prevent its development.

Various demographic and psychological risk factors for adolescent somatic symptoms have also been explored, including gender, with females reporting higher somatic symptoms than males (Janssens et al., 2014). Emotion-specific physiological responses have also been implicated, with shame being associated with increased proinflammatory cytokine activity

and cortisol, contributing to negative physical health outcomes (Dickerson, Gruenewald, et al., 2004; Dickerson, Kemeny, et al., 2004). The role of internalising mental health symptomology in somatic symptom development has yielded contradictory findings. For example, depression but not anxiety was found to increase the risk of persistent somatic symptoms (Janssens et al., 2014). Resultantly, attention has moved toward underlying regulatory processes, such as self-blame, which were found to be more strongly linked with adolescent somatic symptoms than physical illness severity (Ten Klooster et al., 2014).

Emotion regulation has received particular attention in the somatisation literature, especially its mediating role between early life experiences and somatic complaints in adulthood (Annemiek Van et al., 2011; Kealy et al., 2018). Maladaptive strategies like poor meta-cognition (Okur Güney et al., 2019), avoidant coping (Erbildim, 2024; Heshmati et al., 2021) and alexithymia (Ogrodniczuk et al., 2014; Raffagnato et al., 2020) have all been identified as risk factors. All three regulatory styles share a tendency towards emotional suppression and poor emotional awareness (Kishon et al., 2020; Panayiotou, 2018), and it may be this underlying concept which increases vulnerability to somatic symptoms.

Avoidant coping, in particular, has been linked with somatic symptoms, likely through poor emotional processing and social repair (Chaim et al., 2024). However, unpublished findings using the CoSS (J. Elison, personal communication, January 17, 2022) suggested shame avoidance did not correlate with somatisation. These discrepancies may be influenced by the severity of avoidance, the socio-cultural context (Christiansen et al., 2008; Su & Hynie, 2022) or measurement method variance. Understanding psychological mechanisms underpinning somatisation remains a priority, especially in adolescence, as symptoms predict poor health outcomes in adulthood (Bohman et al., 2012, 2018; Shanahan et al., 2015). This study extended the current literature by examining shame regulation and adolescent somatic

symptoms in the context of BCEs and demographics. A contextual approach was necessary as social factors strongly predict somatisation (Berg et al., 2022).

Shame Measurement

With shame being multi-dimensional, it can be difficult to conceptualise. Nathanson (1992) has criticised reductive conceptualisations of shame, which fail to capture the breadth of shame experience. The CoSS was utilised in this study as it assesses defensive responses across four domains, with the latest version capturing an "*adaptive*" prosocial style (Elison, 2000; 2006). Shame is also influenced by socio-cultural context and individual differences, such as age, gender, and culture (Durik et al., 2006; Edelstein et al., 2007; Else-Quest et al., 2012; Stone-Sabali et al., 2024; Su & Hynie, 2022). Gender differences in shame expression are well studied (Fischer et al., 2004; Velotti et al., 2017), with females generally reporting higher shame sensitivity (Benetti-McQuoid & Bursik, 2005; Ferguson et al., 2000; Velotti et al., 2017; Wright. et al., 1989). Males have been found to endorse higher avoidant coping and emotional distancing, whereas females rely on self-attack and support seeking (Elison, 2000). Therefore, this study prioritised controlling for demographic factors to contextualise findings.

The Role of Childhood Experiences

An individual's development, including the ability to regulate shame, is shaped by early caregiving and relational environments (Nahar et al., 2025). A substantial body of research has identified how ACE's (negative and traumatic life events) increase the risk of disrupted emotional development and increased shame proneness (Aakvaag et al., 2016; Claesson & Sohlberg, 2002; Sedighimornani et al., 2021; Stuewig & McCloskey, 2005; Weaver & Sullins, 2022; Webb et al., 2007). ACE's predict both psychopathology (Chen et al., 2025; Pinto-Cortez et al., 2023; Rollins & Crandall, 2021; Sebalo et al., 2023; Toth & Cicchetti, 2013) and somatisation (Adamowicz et al., 2024; Fischer et al., 2014; Loeb et al.,

2018; Sansone et al., 2009; Spertus et al., 2003). Whereas, BCE's are only recently becoming recognised for their protective qualities. BCE's are early positive experiences (i.e. warmth, social support, predictability), occurring before the age of 18, which promote emotional safety, secure attachment, positive self-image, and effective emotion regulation (Almeida et al., 2021; Feiler et al., 2023; Rollins & Crandall, 2021). Despite studies demonstrating an inverse correlation between BCE's and ACE's, their relationship is not linear, as some children adapt to adversity while others do not (Almeida et al., 2021; Feiler et al., 2023).

Recent studies found that BCE's were associated with reduced anxiety, depression, and post-traumatic stress, with emotion regulation mediating the relationship (Feiler et al., 2023). BCE's were also found to have a limited moderating impact on the relationship between ACE's and psychopathology, suggesting that BCE's buffer the effect of ACE's up to a certain threshold (Nahar et al., 2025). A recent review found few studies evidencing an interaction between BCE's and ACE's, and more highlighting a direct relationship between BCE's and favourable outcomes (Han et al., 2023). On the contrary, a review of longitudinal studies (Kallapiran et al., 2025) found that cumulative BCEs moderated the impact of ACEs on adverse outcomes, especially when measured prospectively.

Despite progress, very few studies to date have examined the protective effects of BCEs on psychological distress to draw strong conclusions. Furthermore, samples are largely limited to adult retrospective accounts or focused on general well-being and resilience (Kocatürk & Çiçek, 2023; Shaw et al., 2023). Even fewer studies have focused on shame regulation or examined how BCE's might buffer against somatic distress in adolescence.

The Current Study

Shame is a self-conscious emotion which plays a role in adolescent psychopathology even in the absence of trauma (Cheung et al., 2004; Cunha et al., 2012; Gilbert & Irons, 2009;

Lee et al., 2014; Sadath et al., 2024; Tilghman-Osborne et al., 2008). However, the contribution of shame regulation to somatic symptoms in the context of BCEs is a notable gap. A link between internalising symptoms and adolescent somatisation (Bohman et al., 2018; Campo, 2012) and between shame and adult somatisation (Erbildim & Nweke, 2025b; Fritch, 2018; Pineles et al., 2006) has been established. Evidence also suggests adolescents are particularly sensitive to shame, increasing the risk of both psychological distress and somatic complaints (Yavuz et al., 2018). However, despite these established connections, how shame regulation contributes to adolescent somatic distress has not been addressed. The current study aims to explore how shame regulation styles differentially predict somatic symptoms in adolescents, after controlling for BCE's and demographics.

While ACEs are often studied as predictors of psychopathology, they are not measured in this study to safeguard adolescents, especially when using self-report questionnaires without clinical oversight (Strand et al., 2005). This study offers a developmentally sensitive model of adolescent emotional health by exploring relationships between BCEs, shame regulation, and somatic symptoms. To the author's knowledge, this is the first study to explore these potentially interrelated processes together, and whether implications reflect developmental trends or individual differences (Bornstein et al., 2013)

Research Aims and Hypotheses

Primary Aim

To investigate whether shame regulation styles are associated with somatic symptoms, over and above demographics (age, gender, ethnicity, socio-economic status) and BCE's.

- H^1: Shame regulation will significantly predict variance in adolescent somatic symptoms after controlling for demographics and BCE's.

- H^{1a}: Shame avoidance will show the strongest positive association with somatic symptoms compared to other regulation styles.

Secondary Aim

To extend and replicate previous findings linking shame and internalising symptoms (depression, anxiety) in adolescents.

- RQ^{1}: Are shame regulation styles significantly associated with internalising symptoms (depression, anxiety) in adolescents?
- H^{2}: Shame regulation styles will significantly predict variance in anxiety and depression after controlling for demographics and BCE's.

Exploratory Aim

To examine the role of BCEs in adolescent distress, particularly their association with shame regulation, internalising symptoms, and somatic symptoms.

- RQ^{2}: Are higher levels of BCE's associated with lower use of maladaptive shame regulation styles and greater use of adaptive shame regulation?
- RQ^{3}: Do BCE's account for unique variance in somatic and internalising symptoms?

Methodology

Study Design

The current study utilised a cross-sectional questionnaire-based design and was approved by the Department of Psychology Research Ethics Committee at the University of Sheffield (Ref: 048962; See Appendix A). Ethical integrity and consent were prioritised and sought from all participants, adhering to good practice guidance (BPS, 2021).

Quality Control

This study adhered to the Journal Article Reporting Standards (JARS) and addressed STROBE items for cross-sectional studies for transparent reporting (See Appendix B).

Public Participation

A researcher with expertise in developmental psychology collaborated throughout all study phases. The questionnaire was piloted with four adolescents before data collection commenced. The focus was to: (1) examine potential distress caused by study measures, (2) ensure emotional safeguards were satisfactory, and (3) determine accessibility across ages. Qualitative feedback was retrieved verbally through a short, informal interview or by written response. Anonymised quotes are provided in Appendix C.

The questionnaire took 15-20 minutes to complete, as anticipated. Positive attitudes were expressed, as adolescents believed the questions gave them a voice, challenged stigma, and provided an opportunity to share feelings confidentially. Some adolescents acknowledged the difficulty in describing their feelings, but none were upset afterwards. Adolescents valued the motivational components, being signposted to emotional support, and having the opportunity to win a £20 voucher. Some practical errors were noted and resolved (i.e. raffle link). Adolescents suggested minor alterations to response options (i.e. anxiety scale) to better determine symptom frequency. Adolescents also expressed how increasing questionnaire length could be a barrier for completion, which aligns with our rationale for including a short questionnaire battery to improve response quality (Omrani et al., 2019). The shame regulation scale demonstrated face validity; adolescents reported how the questions aligned with their lived experience and reflected differences in how adolescents cope. Overall, minimal amendments were made as the study was deemed accessible.

Eligibility Criteria

A community sample of adolescents aged 13 to 17 who could read and understand English were eligible for inclusion. Adolescents were not excluded based on diagnosis (i.e. mental health, physical, neurodevelopmental), as self-report tools may not be diagnostically reliable without clinical corroboration from a professional (Cristovam et al., 2019). No further exclusions were made based on demographics, beyond age and language ability.

Sampling Strategy & Setting

The study was conducted online within the United Kingdom. A non-probability sampling approach was used, combining convenience and purposive strategies (Bornstein et al., 2013; Taherdoost, 2016). Predominantly, adolescents were recruited by emailing mainstream schools in West and South Yorkshire, listed on council directorates. Sixty-six schools were approached, eight expressed interest, and three participated. Schools participating had diverse demographic contexts (i.e. affluence). A small proportion ($N = 5$) of participants were recruited via word-of-mouth (e.g., professional or personal contacts) and completed the questionnaire at home. Recruitment advertisements are available in Appendix D. Adolescents were incentivised by providing the opportunity to enter a voucher prize draw.

Sample Size Justification

A priori power analysis was conducted on G*power version 3.1.9.2 (Faul et al., 2007) to determine the minimum sample size required to test the primary study hypotheses. The estimated effect size was based on a study by Fritch et al. (Fritch, 2018), who examined the relationship between shame and somatisation in an adult sample. In this study, both internalised and externalised shame significantly predicted 10% of the variance in adult somatic symptoms ($R^2 = .100$, *Adjusted* R^2 .081, F=5.238, p<.007). This converts to a small to medium effect size (0.11) according to Cohen's f^2 (Cohen, 1998). The required sample size

to achieve 80% power for detecting a small to medium effect, at a significance criterion of α=.05, was 174 for a linear regression with 13 predictors.

Following our sensitivity analysis, a post-hoc power analysis using the effect size from the primary regression model ($R^2 = .541$) indicated that with 13 predictors and a subgroup sample size of 64, the power to detect an effect of this size was 70.7% (Cohen's $f^2 = 1.18$), suggesting adequate power for large effects.

Data Collection

Participating schools were provided with a head-teacher information sheet, consent form (Appendix E) and teacher guidance (Appendix F) prior to data collection. Data collection was staggered and occurred between 24th March 2023 and 23rd June 2023.

Adolescents accessed a short online questionnaire via a Qualtrics QR code. Participants reported their age to determine eligibility and reported whether they had been told about the study by an adult at school ($N = 1$) or at home ($N = 2$). Option one forwarded participants directly to the adolescent information sheet and consent form (See Appendix G), whereas option two first forwarded participants to parent versions (Appendix H). Once appropriate consent was provided, participants progressed to a battery of study measures. Once completed, a saveable adolescent debrief sheet was provided (Appendix I).

Motivation was encouraged by providing a progress bar at the top of the screen, visual animations and praising statements, i.e., "*Keep it up, you are almost halfway through!*". Teachers were encouraged to follow standardised guidance and were responsible for distributing a study participation letter to caregivers (Appendix J). The primary researcher oversaw data collection onsite for one out of three schools.

Measures and Covariates

The questionnaire battery comprised six components and 102 items (See Appendix K). Psychometric properties for this study are available in Table 1. All measures but BCE's (α = .64) demonstrated good to excellent internal reliability.

Demographics

Demographic information about ethnicity, gender (self-defined), sex alignment (whether gender aligns with sex at birth), first language, education, and physical health/ neurodevelopmental conditions was obtained. Socioeconomic status (SES) was assessed using the Home Affluence Scale for Children (HASC) (Wardle et al., 2002), comprising four items about home, car, and computer ownership and access to free school meals. Total scores range from 0 to 6, with higher scores indicating higher SES. The HASC is associated with other SES measures (i.e. parental income), has a good adolescent response rate, moderate internal reliability (α=0.55) and external validity (Guglani et al., 2015; Wardle et al., 2002).

Anxiety

The Generalised Anxiety Disorder Questionnaire (GAD-7) was utilised to assess anxiety symptoms (Spitzer et al., 2006). The GAD-7 is a quick, convenient measure requiring respondents to self-report seven symptoms on a four-point scale (*0 = not at all, 1 = several days, 2 = more than half the days, or 3 = nearly every day*). Scores range between zero and 21, with scores of five, ten, and 15 representing cut-off points for mild, moderate, and severe anxiety, respectively. Clinical anxiety is indicated by scores of 10+ (Williams, 2014). The GAD-7 has demonstrated acceptable sensitivity for adolescents (Mossman et al., 2017), excellent reliability (α = .91) and construct validity (Tiirikainen et al., 2019).

Benevolent Childhood Experiences

The Benevolent Childhood Experiences Scale (BCE's) assessed reported positive childhood experiences occurring between birth and 18 years (i.e. *Did you have at least one*

caregiver with whom you felt safe?) (Narayan et al., 2018). Scores ranged between zero and 10, with higher scores representing a higher frequency of BCE's. The scale has high test-retest reliability (*r*-.80, *p*<.01), cultural generalisability, and internal reliability (α=.94) in adolescents (Redican et al., 2023).

Depression

The Patient Health Questionnaire (PHQ-8) (Kroenke & Spitzer, 2002) was utilised to measure depression, which omits the question relating to suicidal or self-injurious behaviours. Composite scores range from zero to 24, with higher scores indicating higher depressive symptoms. A score of 10 or more indicates clinically significant depression (*5-9 = mild, 10-14 = moderate, 15- 19 = moderately severe and 20-24 = severe*). The PHQ-8 is similarly effective as the PHQ-9, demonstrates excellent reliability (α = .89) (Shin et al., 2019) and is an accessible tool to assess adolescent depression (López-Torres et al., 2022).

Shame Regulation

The Compass of Shame Scale, Fifth Version (CoSS-5) was utilised to assess shame regulation styles, with written permission from the author (Elison, Lennon, et al., 2006). The CoSS-5 is the most recent version of the CoSS and is grounded in Nathanson's (1992) Compass of Shame model. The model conceptualises four core shame scripts which defend against the painful experience of shame, without directly addressing its source. Elison et al., (2000; 2006) coins these four defensive scripts as maladaptive shame regulation styles, as they include behaviours or cognitions which minimise or magnify shame experiences, rather than problem-solving (Elison, 2000).

Broadly, the four maladaptive styles include: Withdrawal (i.e. rapid effort to escape and isolate from others), Attack Self (i.e. shame directed inward through processes of self-blame, criticism and contempt), Attack Other (i.e. externalising shame towards others,

through bullying, criticising, devaluing), and Avoidance (i.e. self-preservation over time through denial, minimisation, and emotional suppression). Each style reflects a different coping tendency, either externalising, internalising, or disconnection (avoidance).

The CoSS-5 includes 12 hypothetical shame-inducing scenarios followed by four regulatory responses, which represent each pole of the shame compass. Participants rate each maladaptive response from one to five (*1 = never, 5 = almost always*) to indicate frequency of use and level of defensive shame regulation. In addition, the scale includes ten adaptive shame scenarios, each with one corresponding "adaptive" shame regulation strategy (i.e. "*When I feel rejected by someone, I spend time with other friends*"). Adaptive strategies are conceptualised as constructive, featuring reflection, self-compassion, or repair. Sub-scale scores range between 12 and 60 (maladaptive styles) and 10 and 50 (adaptive styles), respectively. The CoSS has acceptable to good reliability in community adolescents (i.e., α = 0.90 for Attack Self, α = 0.67 for Avoidance) (Nyström & Mikkelsen, 2013; Paulo et al., 2020). The adaptive scale also demonstrates satisfactory psychometric properties (Schalkwijk et al., 2016; Vagos et al., 2019).

Somatic Symptoms

A shortened version of the Patient Health Questionnaire (PHQ-15) was utilised to measure somatic symptoms, coined the Somatic Symptom Scale (SSS-8) (Gierk et al., 2014; Kroenke et al., 2002; Zijlema et al., 2013). Participants rated somatic symptoms on a five-point scale. Scores ranged from 0- 32; higher scores indicated higher somatic symptom distress. Severity categories include low (4- 7), medium (8-11), high (12-15), and very high (16-32). The SSS-8 has demonstrable reliability (α = 0.81) and validity (Gierk et al., 2014).

Table 1

Internal reliability of study measures, assessed using Cronbach's Alpha

Scale	Alpha (α)
BCE's (10 items)	.64
PHQ-8 (8 items)	.89
PHQ-GAD Composite (15 items)	.95
GAD-7 (7 items)	.91
CoSS-5 Composite (58 items)	.94
SSS-8 (8 items)	.88
Avoidance	.85
Attack self	.95
Withdrawal	.92
Attack other	.89
Adaptive	.88

Note. Reliability scores are based on raw data with missing values, prior to imputation. George and Mallery's (2005) rule of thumb: ".9 = Excellent, .8 = Good, .7 = Acceptable, .6 = Questionable, .5 = Poor, and <.5 = Unacceptable" (*p*. 231). Adaptive scale reversed in CoSS-5 composite. The BCE scale had lower internal reliability (α = .64), consistent with its multidimensional checklist format, but was retained due to theoretical and ethical relevance.

Data Diagnostics

Data was exported from Qualtrics to IBM SPSS Statistics (Version 29), screened and cleaned. Composite scores were created for all psychometric measures. Dummy variables were created for gender, ethnicity, and diagnosis. Participants who marked "*prefer not to say*" for ethnicity were aggregated into the "*ethnic-other*" category rather than excluding cases (N = 4). (ONS, 2021). Similarly, participants who gender identified as "*non-binary*" or "*other*" were aggregated for entry into further analysis (N = 12).

Continuous data were examined for missing patterns across the sample and variables (Table 2), then addressed using the Expectation-Maximisation (EM) method. EM is considered appropriate under the assumption that the data is Missing at Random (MAR) or Missing Completely at Random (MCAR), and missingness is low to moderate (Little & Rubin, 2002, 2020). EM was chosen as a robust approach as it maintains statistical power by preserving data characteristics and providing unbiased parameter estimates (Enders, 2001; Graham, 2009; Little & Rubin, 2002; Newman, 2014; Nicholson et al., 2017; Scheffer, 2002).

Statistical assumptions were examined using histograms, scatterplots, skewness and kurtosis values, and the Shapiro-Wilk (SW) (Gray, 2012; Kwak & Park, 2019). Outliers were examined using box plots, standardised Z scores, and Cook's distance. Levene's test and variance ratios were utilised to examine homogeneity of variance across demographic groups. P-P plots and standardised residuals were inspected to determine normality of residuals, linearity and homoscedasticity. Bivariate correlations, tolerance, and VIF values evaluated multicollinearity and additivity (Field, 2013).

Analytic Strategy

Data was analysed using IBM SPSS Statistics for Windows (Version 29). Descriptive statistics (frequencies, means, and distributions) were calculated for all study variables by total sample (N = 239) and by gender (Table 4). Exploratory between-group effects for

somatic symptoms were conducted for diagnosis, age, gender, and ethnicity using an independent t-test, a non-parametric Kruskal-Wallis Test and two Univariate ANOVA's. As the assumption of normality was violated, non-parametric Spearman's Rho correlations were reported and compared against parametric equivalents in direction and significance.

To adjust for multicollinearity and statistical overlap, composite scores were created for internalising symptoms (anxiety, depression) and internalising shame regulation (withdrawal and attack self) for entry into regression. Combining scores was informed by theoretical and empirical literature, which evidenced their strong psychometric properties (Chilcot et al., 2018; Kroenke et al., 2019; Paulo et al., 2020).

Two hierarchical multiple regressions were performed (Figure 1) with somatic symptoms and internalising symptomology as the outcome variables. The primary analysis examined how variables predicted somatic symptoms in three steps: (i) demographics, including age, gender, socio-economic status, and ethnicity; (ii) BCEs; and (iii) shame regulation style (internalising, attack-other, avoidance, adaptive).

Finally, a sensitivity analysis was conducted to determine whether being neurodivergent or having a physical health condition influenced findings. Adolescents were grouped based on self-reported diagnosis, and regressions were re-run separately by group.

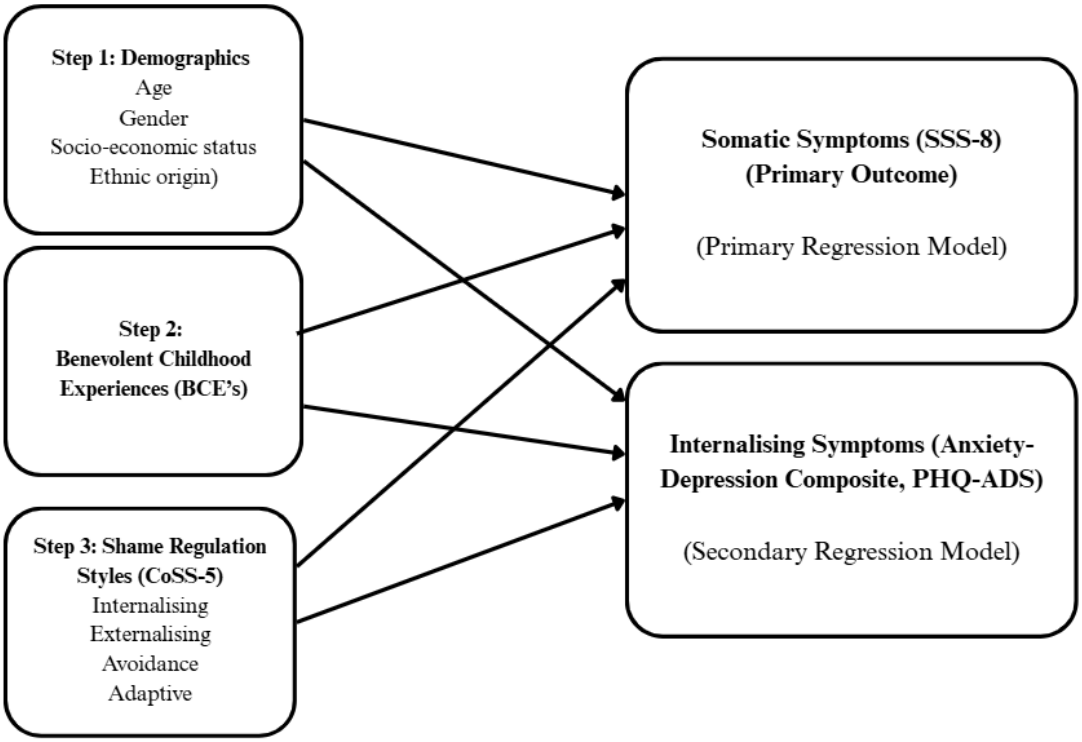

Figure 1

Hierarchical regression models showing the order and type of variables entered

Results

Participant Flow

Raw data entries from 325 adolescents were exported into SPSS-29. Data from non-completers (N = 81) or non-eligible participants (N = 2) were removed, leaving 239 data cases for inclusion in the analysis (Figure 2).

Missing Data

Overall, there were 474 missing values, representing 10.31% of the total dataset, across 105 participants (43.39%) and 10 variables (52.63%). The proportion of missing data on the primary outcome variable, somatic symptoms, was 7%, which is considered low. Little's MCAR test was non-significant, $\chi^2(56) = 58.79$, $p = .374$, indicating that the data were MCAR (Little, 1988) and supporting the use of EM to produce reliable estimates (Enders, 2001; Little & Rubin, 2002; Scheffer, 2002).

Test Assumptions

Visual inspection of scatterplots demonstrated linear relationships between the predictor and outcome variables. 20 outliers were identified, three of which were extreme cases and were excluded. The primary analysis was run with and without the 17 less extreme outliers, which did not have any undue influence on outcomes (Cook's Distance <1) (Dhakal, 2017; Field, 2013) and were therefore retained.

Histograms and QQ plots demonstrated that most continuous variables were non-normally distributed, which was corroborated by a significant Shapiro-Wilks Test (p<.001). A significant positive skew (p<.001) for age, depression, anxiety, and somatic symptoms was evident. Whereas, SES, BCEs, and "adaptive" shame regulation were negatively skewed, with all Z values falling within the range of -3.29 and +3.29 (Field, 2013). Despite this,

normality was assumed for regression models, especially as the sample exceeded 200; statistical tests for normality are likely to be inaccurate, due to the central limit theorem (Demir, 2022; Field, 2013). Data points on P-P plots were also close to the line.

Participant Characteristics

The demographic composition of the total sample is available in Table 3 ($N = 239$). Adolescents were aged between 13 and 17, with a mean age of 15.03 (SD = 1.39). While 14 and 16-year-olds are slightly more represented, their age was generally balanced across age groups. The mean questionnaire completion time was 24 minutes. Most adolescents ($N = 234$, 97.9%) completed the questionnaire in school and were in full-time education ($N = 237$, 99.2%). The sample was ethnically diverse, with almost half of the adolescents (46.9%) from the global majority, and 14.6% had a first language other than English. 33 adolescents (13.9%) self-reporting a neurodevelopmental condition or mild learning disability.

Descriptive Statistics

Descriptive statistics for study variables are reported in Table 4. The number of self-reported BCE's across the sample ranged between 2 and 10 (M = 8.19, SD = 1.58). Total somatic symptoms ranged between 0 and 32 (M = 9.29, SD = 7.47), with the mean score falling within the medium severity category. Mean scores for depression (8.02) and anxiety (6.65) across the sample did not meet the clinical threshold.

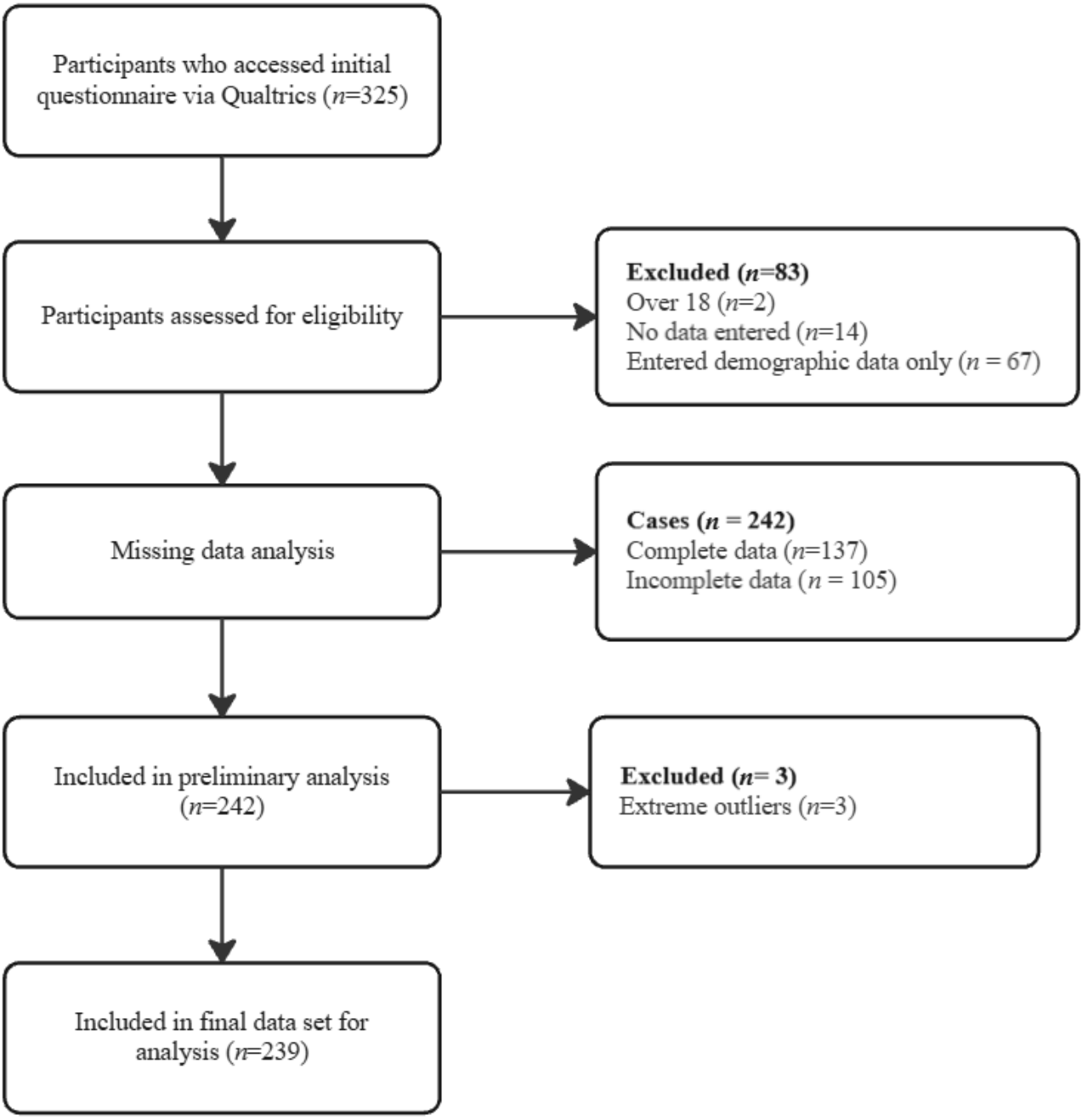

Figure 2

Participant Flow Diagram

Table 2

Missing data (%) distributions across variables in the observed dataset (N = 244)

Variables		Distribution
Socio-economic status (HASC)	No of missing values (%)	36 (14.9)
	Mean (SD)	4.04 (1.35)
BCE's	No of missing values (%)	5 (2.1)
	Mean (SD)	8.10 (1.81)
Withdrawal	No of missing values (%)	75 (31)
	Mean (SD)	29.71 (11.93)
Attack self	No of missing values (%)	75 (31)
	Mean (SD)	31.36 (13.53)
Attack other	No of missing values (%)	75 (31)
	Mean (SD)	22.27 (8.38)
Avoidance	No of missing values (%)	75 (31)
	Mean (SD)	29.65 (9.45)

Table 2

Missing data (%) distributions across variables in the observed dataset (N = 244)

Adaptive	No of missing values (%)	85 (35.1)
	Mean (SD)	28.75 (9.13)
Anxiety	No of missing values (%)	16 (6.6)
	Mean (SD)	6.69 (6.04)
Depression	No of missing values (%)	15 (6.2)
	Mean (SD)	8.01 (6.39)
Somatic Symptoms	No of missing values (%)	17 (7.0)
	Mean (SD)	9.46 (7.98)
Total Variables	No of missing values (%)	10 (52.63)
Total Cases	No of missing values (%)	105 (43.39)
Total Missing Values	No of missing values (%)	474 (10.31)

Note. Demographic data 100% complete; HASC = Home Affluence Scale for Children; SD = Standard Deviation; Imputation Method: Estimation Maximum (25 iterations).

Table 3

Descriptive Frequencies of Participant Characteristics of the Total Sample (N= 239)

Demographics	*N* (%)	%
Age (years)		
13	38	15.9
14	65	27.2
15	31	13.0
16	61	25.5
17	44	18.4
Ethnic origin		
White	127	53.1
Black	31	13.0
Asian	45	18.8
Mixed	13	5.4
Other	19	7.9
Prefer not to say	4	1.7
Gender		
Male	99	41.4
Female	128	53.6
Non-binary	7	2.9
Other	5	2.1
Sex Alignment		
Transgender	15	6.3
Cisgender	224	93.7

Table 3

Descriptive Frequencies of Participant Characteristics of the Total Sample (N= 239)

Demographics	*N* (%)	%
First Language		
English	204	85.4
Any other Language	35	14.6
Education		
Full-Time	237	99.2
Part-Time	2	0.8
Questionnaire Setting		
Home	5	2.1
School	234	97.9
Diagnosis		
None	175	73.2
Neurodivergent	33	13.8
Physica Health	27	11.3
Dual	4	1.7

Note. Neurodivergent = Autistic, Attention Deficit Hyperactivity Disorder (ADHD), Dyspraxia, Dyscalculia, Learning Disability, Other; Dual diagnosis = Physical Health Condition and Neurodivergent.

Table 4

Demographic characteristics of the study measures by the total sample (N = 239) and split by gender (Female; N = 128, Male; N = 99)

Measure	Mean	SD
Age Scale		
Total Sample	15.03	1.38
Female	15.29	1.44
Male	14.62	1.18
Socio-economic Status		
Total Sample	4.04	1.23
Female	4.08	1.21
Male	3.99	1.27
BCE's		
Total sample	8.19	1.58
Female	8.25	1.49
Male	8.28	1.49
Withdrawal		
Total sample	30.00	10.66
Female	33.26	10.03
Male	24.79	9.13
Attack Self		
Total sample	31.70	12.08
Female	35.16	12.06
Male	26.28	9.83
Internalising Shame Regulation		
	61.70	22.09

Table 4

Demographic characteristics of the study measures by the total sample (N = 239) and split by gender (Female; N = 128, Male; N = 99)

Measure	Mean	SD
Female	68.42	21.26
Male	51.07	18.38
Attack Other		
Total sample	22.45	7.29
Female	24.34	7.55
Male	19.66	6.02
Avoidance		
Total sample	29.78	8.15
Female	31.88	7.49
Male	26.61	8.08
Adaptive Shame Regulation		
Total sample	28.84	7.49
Female	30.75	6.39
Male	26.22	7.91
Depression		
Total sample	8.02	6.11
Female	9.49	6.06
Male	5.53	4.91
Anxiety		
Total sample	6.65	5.80
Female	7.92	5.82
Male	4.44	4.74

Table 4

Demographic characteristics of the study measures by the total sample (N = 239) and split by gender (Female; N = 128, Male; N = 99)

Measure	Mean	SD
Internalising Symptomology		
Total sample	14.67	11.49
Female	17.42	11.36
Male	9.97	9.24
Somatic Symptoms		
Total sample	9.29	7.48
Female	11.18	7.58
Male	6.20	5.76

Note. BCE's = Benevolent childhood experiences; Internalising Shame Regulation = withdrawal and attack self-aggregated; Internalising symptomology; anxiety and depression scales aggregated. SD = standard deviation rounded to 2 decimal places.

Statistical Analysis

Preliminary Exploratory Analysis of Somatic Symptoms Across Subgroups

A nonparametric Kruskal-Wallis test was conducted to explore whether the frequency of somatic symptoms reported differed by gender identity (female, male, non-binary/other). Mean ranks of somatic symptoms were 138.70, 90.86, and 160.88, for females, males, and non-binary/other, respectively. There was a significant difference in mean ranks across the three groups, H (3, 239) = 31.22, p<.001. Post-hoc comparisons using Dunn's test with Bonferroni correction revealed that females had significantly higher somatic symptom scores than males (p < .001). No other pairwise comparisons reached statistical significance.

A one-way exploratory ANOVA examining ethnic differences in somatic symptoms did not reach significance across five ethnic groups ($F(4,234) = .612$, $p = .655$). A further ANOVA explored age differences in somatic symptoms, which indicated a statistically significant difference between groups, $F(4,234) = 3.22$, $p=.014$. Tukey's HSD test indicated significant mean differences between adolescents aged 17 and adolescents aged 13 (*p=.017, 95% C.I. = .60, 9.60)* and 14 *(p=.017*, 95% C.I. = .54, 8.37), with adolescents approaching adulthood reporting higher somatic symptoms.

An exploratory independent sample t-test revealed significant differences in somatic symptoms between the diagnosis groups, t (92.30), $p=.003$. Adolescents with a diagnosis had higher somatic symptom scores (M = 11.81, SD = 6.76) compared to those without (M = 8.37, SD = 8.69), indicating a small effect (d = -.470) measured by Cohen's *d.* SPSS output for exploratory between-group analysis is available in Appendix L.

Relationships between BCE's, shame regulation, demographics, anxiety, depression, and somatic symptom distress

Parametric Spearman's Rank correlations were conducted to examine relationships between variables (Table 6). Significant positive correlations were found between all shame regulation styles. The largest positive association was noted between withdrawal and attack self, r (237) = .89, p = <.001. Adaptive shame regulation was positively and significantly associated with all maladaptive styles, with moderate associations to withdrawal and avoidance and weak associations to attack self and attack other.

Somatic symptoms were significantly and moderately associated with maladaptive shame regulation, with somatic symptoms increasing as maladaptive shame regulation use increased. Withdrawal had the strongest relationship with somatic symptoms (r (237) = .694, p = <.001), whereas avoidance had the relative weakest (r (237) = .521, p = <.001). Weak

positive associations were found between adaptive shame regulation and adolescent distress. Somatic symptoms, however, were strongly and positively associated with internalising symptomology (r (237) = .833, p = <.001.

BCEs were significantly associated with all shame regulation styles, other than avoidance; however, effect sizes were negligible. A weak negative association was found between BCEs and somatic symptoms (r (237) = -.368, p = <.001), anxiety (r (237) = -.351, p = <.001), and depression (r (237) = -.367, p = <.001. As positive early life experiences increased, psychological distress decreased.

SES was not associated with any study variables. A weak positive association was found between age and avoidance; as age increased, shame avoidance increased (r (237) = -.362, p = <.001). Correlations are available in Appendix N.

Table 5

Between-group differences in mean somatic symptoms (n=239)

Characteristics		Mean (SD)	Test Values	95% Significance Level (one-tailed)
Age (*n*)	13 (37)	7.38 (6.76)		
	14 (67)	8.02 (7.56)		
	15 (30)	9.49 (8.12)	$F(4,234) = 3.22$	$p = .014$
	16 (61)	9.43 (6.72)		
	17 (44)	12.48 (7.71)		
Gender (*n*)	Male (99)	6.20 (5.77)		
	Female (128)	11.18 (7.58)	$H(3, 239) = 31.22$	$p<.001$.
	Non-binary/other (12)	14.58 9.44)		
Ethnicity (*n*)	White (127)	9.50 (7.27)	$F(4,234) = .612$	$p=.655$
	Black *(*31)	7.66 (8.29)		

Table 5

Between-group differences in mean somatic symptoms (n=239)

Characteristics		Mean (SD)	Test Values	95% Significance Level (one-tailed)
	Asian (45)	10.10 (8.48)		
	Mixed (13)	9.77 (6.76)		
	Other/PNS (23)	8.43 (5.66)		
Diagnoses (*n*)	None (175)	8.37 (6.76)	*t*(92.30)	*p*=.003
	Diagnoses (64)	11.81 (8.70)		

Note. Diagnosis = self-reported physical health condition or cognitive difference (autism, attention deficit hyperactivity disorder, dyspraxia, dyslexia, learning disability, other); Mean and standard deviation for gender is for reference only, test statistics for gender are based on mean ranks reported in the text.

Table 6

Spearman's Rho Correlations Among Continuous Variables (N = 239)

	1	2	3	4	5	6	7	8	9	10	11
1. Age	-										
2. SES	-.056	-									
3. BCE's	.054	-.088	-								
4. Depression	.229**	-.080	-.367**	-							
5. Anxiety	.182**	.026	-.351**	.844**	-						
6. Withdrawal	.294**	.048	-.213**	.722**	.764**	-					
7. Attack self	.288**	.081	-.250**	.706**	.762**	.894**	-				
8. Attack Other	.260**	.130*	-.169**	.611**	.654**	.713**	.737**	-			
9. Avoidance	.362**	.067	-.037	.567**	.500**	.723**	.707**	.683**	-		
10. Adaptive	.249**	.020	.207**	.283**	.350**	.507**	.491**	.459**	.627**	-	
11. Somatic	.230**	-.013	-.368**	.811**	.785**	.694**	.687**	.593**	.521**	.278**	-

Note. SES = Socioeconomic status; BCE's = Benevolent childhood experiences; SSS-8 = Somatic symptoms; Shame regulation = "maladaptive" shame regulation styles composite. Spearman's rho was calculated for all variables. **p*<.05, ***p*<.01 * Sensitivity - running analysis split by diagnosis (diagnosis = 64, none = 175). No major difference between associations. Absolute Value of r Strength of Relationship; r < .30 = None or very weak; .30-.49 = weak; 50–.69 = moderate, and ≥ .70 = strong.

The role of BCE's and shame regulation in predicting somatic symptoms

Demographic variables explained a significant 16% of the variance in somatic symptoms, $R^2 = .158$, F (8, 230) = 5.40, $p < .001$. Only gender significantly contributed to variance at this step, with males reporting lower somatic symptoms ($\beta = -.307$, $p<.001$). Adding BCEs in block two accounted for an additional 14% of variance, $\Delta R^2 = .139$, F (1, 229) = 45.47, $p < .001$, with the addition of BCE's leading to age becoming significant ($\beta = .118$, $p=.047$), with older adolescents reporting a greater number of somatic symptoms. After adding shame regulation styles in block three, which explained an additional 24.3% of variance, $\Delta R^2 = .243$, F(4, 225) = 29.83, $p < .001$, age was no longer significant.

Interestingly, SES became significant after adding shame regulation ($\beta = -.100$, $p=.044$). Internalising shame regulation was the only significant predictor after controlling for demographics and BCE's ($\beta = -.48$, $p <.001$). The final model was statistically significant, F (13, 225) = 20.40, $p < .001$, explaining 54.1% of the variance in somatic symptoms (Adjusted $R^2 = .514$) and converting to a large effect. Gender remained significant. Regression coefficients are reported in Table 5.

The role of BCE's and shame regulation in predicting internalising symptomology

Demographic variables explained a significant 16% of the variance in internalising symptoms, $\Delta R2 = .16$, $F\Delta(8,230) = 5.48$, $p<.001$. Both gender dummy variables (males, non-binary/other) significantly predicted somatic symptoms compared to females. Males reported significantly lower levels of internalising symptomology ($\beta = -.307$, $p = .045$), with a moderate effect size, while non-binary/other participants reported significantly higher levels ($\beta = .124$, $p = .042$), but the effect was small. Adding BCEs in block two explained an additional 15% of the variance, $\Delta R2 = .15$, F(1,229) = 49.25, p <.001, with BCEs negatively predicting internalising symptoms. The effect for non-binary/other identity at this step

became non-significant, meaning BCE's may explain variance in internalising symptoms for gender diverse participants.

The final step, which included shame regulation styles, explained a further 37% of the variance in internalising symptoms (ΔR2 =.37, FΔ(4, 225) = 65.16, p <.001). Once shame regulation was accounted for, identifying as Asian (compared to White) and lower SES was associated with higher internalising symptomology. Internalising shame regulation was the strongest predictor (β = .644, $p < .001$), although externalising shame regulation was also a significant predictor (β = .165, $p = .004$). The overall model was significant, $F(13, 225) = 36.73$, $p < .001$, Adjusted $R^2 = .661$, with variables together predicting a large proportion (66.1%) of variance in adolescent internalising symptoms. See Appendix O for SPSS output.

Does having a self-reported neurodivergent or physical health condition change how BCE's and shame regulation predict somatic symptoms?

Regression models remained robust when split by diagnosis (Appendix P). The full model explained 52.7% of the variance in somatic symptoms for adolescents without a diagnosis. All model steps were significant. In the diagnosed group, the full model explained 50.8% of the variance; however, demographics alone were not significant (ΔR2 =.18 X, ΔF(8,55) = 1.53, p=.167) and became statistically significant after adding BCEs and shame regulation. BCEs and shame regulation retained predictive value in both groups.

For internalising symptomology, the full model explained 62.7% of variance in the undiagnosed group, with significant contributions from demographics, BCEs, and shame regulation. Whereas, in the diagnosed group, the model predicted a larger proportion of the variance (81.0%) relative to the total sample and undiagnosed group, the variance of which was driven primarily by shame regulation ($\Delta R^2 = .480$). Demographic predictors were weaker in this group, but BCEs remained significant in both models.

Table 5

Hierarchical regression for variables predicting somatic symptoms and anxiety and depression symptomatology (N = 239)

Block	Predictors	Dependent					
		Somatic Symptoms			Internalising Symptomology		
		ΔR2	ΔF	β	ΔR2	ΔF	β
1	Age			.101			.083
	Male			-.307**			-3.07**
	Non-Binary/Other			.102			.124*
	SES	.158	*F* (8,230) = 5.40**	-.058	.160	*F* (8,230) = 5.470**	-.057
	Black			-.090			-.017
	Asian			.047			.088
	Mixed			.003			.072
	Other/ PNS			-.053			-.034
2	Age			.118*			.100
	Male			-.301**			-3.01**
	Non-Binary/Other			.028			.048
	SES	.139	*F* (1,229) = 45.47**	-.065	.149	*F* (1,229) = 49.206**	-.064
	Black			-.061			.014
	Asian			.047			.088
	Mixed			-.002			.066
	Other/ PNS			-.049			-.030

	BCE's			-.382**			-.394**
3	Age			-.012			-.048
	Male			-.108*			-.063
	Non-Binary/Other			.016			.034
	SES			-.100*			-.101*
	Black			-.069			.009
	Asian			.057			.098*
	Mixed	.243	*F* (1,228) = 29.826**	-.062	.371	*F* (4,225) = 65.160**	-.009
	Other/ PNS			-.038			-.012
	BCE's			-.248**			-2.08**
	Internalising			.480**			.644**
	Attack Other			.092			.165*
	Avoidance			.046			-.044
	Adaptive			-.007			-.035

Note. BCE's = benevolent childhood experiences; Internalising = anxiety and depression symptoms composite score; PNS = Prefer not to say; Gender was dummy coded with females as the reference category, with male and non-binary/other dummies entered in both regression models. Four ethnicity dummy variables (Black, Asian, Mixed, Other/PNS) were entered in both regression models with White as the reference category. *p<.05 **p<.001. (-) = negative relationship. β Effect sizes based on Cohen's d, <.10 = trivial, .10 – .29 = small, .30 – .49 = moderate, .50 – .69 = large effect, ≥ .70 = very large.

Discussion

Building on prior literature linking shame with psychopathology, this research specifically explored how shame regulation styles predicted adolescent internalising and somatic distress. Examining these relationships in the context of BCE's and demographic factors offers a nuanced understanding of emotional processes in adolescence. Key findings are presented, followed by a critical appraisal, and directions for future research.

Summary of Findings

As predicted, all four maladaptive shame regulation styles were positively associated with somatic and internalising symptomology, addressing RQ^1, with shame withdrawal demonstrating the strongest association. These findings align with prior research (Gambin & Sharp, 2018; Muris et al., 2016; Sullivan et al., 2020b) and highlight the relevance of shame in adolescent distress. Our primary regression model explained 54.1% of the variance in somatic symptoms, supporting H^1. Notably, gender emerged as the strongest demographic predictor, with males reporting fewer somatic symptoms than females, as found in the literature (Romero-Acosta et al., 2013; Weitkamp & Seiffge-Krenke, 2024). However, gender-linked distress may be better explained by differences in how shame is managed and internalised, as the gender effect was dampened once shame regulation was accounted for.

Internalised shame regulation was the strongest predictor of somatic symptoms. The moderate effect of withdrawal and attack self may be explained by heightened conscious awareness of shame and self-blame underpinning these styles (Elison, Lennon, et al., 2006; Nathanson, 1992). Self-blame, in particular, is thought to link shame and physical symptoms (Ten Klooster et al., 2014). These emotional processes have been linked with both emotional suppression and heightened autonomic nervous system activation (Chaim et al., 2024; Compas et al., 2017) which could explain their predictive role in somatic symptoms.

Similarly, internalised shame regulation was the strongest predictor of internalised distress, supporting H^2 and echoing previous findings (Gilbert & Irons, 2009; Muris et al., 2015, 2016; Muris & Meesters, 2014). Externalising regulation showed different patterns, with attack-other predicting internalising but not somatic symptoms. These findings are consistent with research linking externalised coping and psychological distress (Hudson et al., 2025; Polier et al., 2012; Schalkwijk et al., 2016; Vagos et al., 2019; Wilkinson et al., 2000) and highlights the importance of supporting adolescents whose behaviour (i.e. hostility) may mask internalised distress (Campbell & Elison, 2005; Compas et al., 2006).

Shame avoidance was moderately associated with emotional and somatic distress, but its effects were relatively weak compared to other maladaptive styles, contradicting H^{1a}. After controlling for demographics and BCEs, avoidance did not predict psychopathology. This could be explained by the difficulty in detecting avoidance through self-report, especially as it is theorised to work unconsciously and involve emotional denial (Elison, Lennon, et al., 2006; Nathanson, 1992). In this study, avoidance had the strongest association with withdrawal, likely through the shared process of escape. However, they differ in pace and function, with withdrawal being immediate and avoidance reflecting disengagement from shame over time (Nathanson, 1992). Therefore, avoidance may offer short-term protection, temporarily reducing awareness of distress (Compas et al., 2006; Janssens et al., 2014).

Supporting this, avoidance was the only style positively associated with age, increasing across adolescence. Given the established link between longer-term emotional disengagement and adverse outcomes (Compas et al., 2006; Herman-Stabl et al., 1995), avoidance may delay shame processing and be more closely linked with mechanisms like emotional suppression, not targeted in this study but cited in the literature (Erbildim, 2024; Ogrodniczuk et al., 2014; Okur Güney et al., 2019; Raffagnato et al., 2020).

Adaptive coping was positively associated with anxiety, but showed no relationship with BCEs, depression or somatic symptoms, nor did it predict variance in regression models. This was surprising given the proposed link between BCE's and effective emotion regulation (Feiler et al., 2023). One possible explanation is that the CoSS-5 captures the use of simultaneous styles, masking the potential unique protective effects of adaptive strategies (Elison, Lennon, et al., 2006). Adolescents are unlikely to rely on a single style, especially with shame being context-dependent (Lazarus, 2006; Lazarus & Folkman, 1984; Rollins & Crandall, 2021). However, this study does not capture the sequence of strategies to draw meaningful conclusions. Interestingly, adaptive and avoidant coping were most strongly related, which could reflect temporary distraction from shame. With avoidance being linked to self-reassurance (Vagos et al., 2019) and defined as the most effective maladaptive style, the relationship with adaptive shame regulation could reflect protective qualities. For example, avoidant strategies such as humour are protective in some contexts (Christiansen et al., 2008), whilst others (i.e. substance use) are more harmful. Similarly, pro-social coping may be effective in some situations but not universally (Hudson et al., 2025).

To examine RQ3, associations between BCE's and shame regulation were examined, and BCE's were entered into regression models at step 2. Despite being in the expected direction, very weak negative correlations were found between BCE's and shame regulation styles. Given recent research suggests BCE's have a greater influence on positive outcomes (Han et al., 2023), this finding was unexpected, especially for adaptive regulation, as research has illustrated the protective role of prosocial coping on adolescent distress (Compas et al., 2017). The weak influence of BCEs could also reflect poor internal consistency. Despite these findings, BCE's negatively predicted emotional and somatic distress after controlling for demographics and shame regulation. Albeit a small effect, BCEs may have a protective role in adolescent distress, reinforcing how relational experiences may act as developmental

buffers (Han et al., 2023; Narayan et al., 2018; Redican et al., 2023). With the predictive strength of BCE's reducing when shame regulation was accounted for, a mediatory effect could be inferred (Feiler et al., 2023).

Our exploratory between-group analysis demonstrated that females and older adolescents (aged 17) reported the greatest somatic symptom distress. Demographic influences on adolescent distress were generally weaker than emotional ones, with ethnic differences being largely non-significant. However, within the internalising symptomology model, Asian ethnicity became significant at step three once shame regulation was added. Although the effect is trivial ($\beta = .098$, $p = .017$) and should be interpreted cautiously, it warrants further investigation, as it mirrors findings suggesting cultural differences in shame regulation (Su & Hynie, 2022). Similarly, SES independently and negatively predicted internalising and somatic symptoms at step 3, suggesting that low SES could be a contextual vulnerability for adolescent distress initially masked by BCEs. These findings align with research linking family climate, SES and adolescent mental health (Maurer et al., 2025).

Our sensitivity analysis demonstrated the model's robustness across clinical and non-clinical adolescents. The overall model variance was larger in the clinical sample, suggesting shame regulation had a greater influence on adolescents who self-reported neurodivergence or a physical health condition. Very few studies have examined shame and psychopathology in neurodivergent subgroups (Davidson et al., 2018), which may warrant further exploration.

Strengths and Limitations

This study had several strengths. First, the novel combination of shame regulation, BCE's, and distress in our study is theoretically original. Ethical integrity was prioritised through sensitive procedures and public involvement to ensure adolescent accessibility and safety. The inclusion of a large, diverse community sample allows for greater generalisation

across non-clinical adolescents. Efforts were made to maintain cohort similarity and minimise time-related confounds (i.e. exam stress) by limiting data collection to a two-month window. Reliability and construct validity were also enhanced by standardising data collection and utilising psychometrically sound adolescent distress measures.

Nonetheless, limitations must be acknowledged. The cross-sectional design limits causal inferences and conclusions about the directionality of relationships. As the study was mainly conducted in schools, reliance on self-report measures may have led to under-reporting of symptoms, especially those deemed socially undesirable (Perinelli & Gremigni, 2016; van de Mortel, 2005). There was also a risk that adolescents experienced subtle pressure from teachers and had limited time to answer questions.

The BCES was the only measure found to have questionable internal consistency, possibly representing its multi-dimensional nature, but still limiting its precision. While the CoSS-5 was selected for its strong theoretical basis, especially in adolescent populations, it focuses on behavioural responses to shame and each script encapsulates multiple overlapping psychological processes (i.e. self-criticism, shame awareness), which limits clarity on the specific mechanism driving associations with adolescent distress.

Further, while ethnic groups were not aggregated into a dichotomous White vs non-White binary to reduce the risk of racial essentialism (Adebiyi et al., 2023), sample sizes of ethnic groups were small, similar to gender diverse groups, which reduces statistical power and potentially obscures the true impact of demographics. Overall, findings are generalisable to a community sample of adolescents, however, data collection occurred within one sub-region of the UK, and findings may differ within different educational or cultural contexts.

Clinical Implications and Future Directions

Findings suggest that shame regulation, particularly internalising styles, is predictive of somatic and emotional distress. Targeting shame regulation in assessment and formulation may support adolescents in building awareness of their coping style and the potential short and long-term impact. Adolescents may benefit from psycho-social interventions which reduce self-blame and internalised shame, enhance confidence in relational repair, and build skills to process emotions or temporarily shift cognitive attention from bodily distress (Volkaert et al., 2020). Building self-compassion may be one approach to countering the negative impacts of self-attack on adolescent well-being (Gilbert & Irons, 2009).

The finding that externalising shame only predicted variance in internalising symptoms highlights the importance of viewing outward behaviours such as aggression or blame as potential indicators of hidden vulnerability and distress. Even when externalising behaviours are mild, global adversity, including mental health in adulthood, is more common than in adolescents without externalising behaviour (Colman et al., 2009). Therefore, clinicians should offer therapeutic support proactively and consider the emotional underpinnings of adolescent behaviour to avoid them being mischaracterised.

Although adaptive and avoidant regulation did not predict distress, their strong correlation suggests that these styles may interact or evolve over time. Future interventions might aim to strengthen adaptive shame coping by helping adolescents move away from disengagement and toward active emotional processing. The null findings also raise questions about the measurement sensitivity of adaptive and avoidant coping. Further validation of shame regulation measures for this age group is warranted.

Future research could address study limitations by replicating findings across different regions in the UK or cross-nationally, with particular focus on inclusive sampling strategies for underrepresented groups, so more reliable inter-sectional analysis can be conducted.

Focusing on specific clinical populations may also be beneficial, especially given that shame regulation had a stronger predictive value among adolescents reporting physical health conditions and neurodivergent profiles. This would require accurate methods to identify clinical diagnoses for meaningful interpretation.

Moreover, the current model of shame regulation could be formally tested with shame regulation as a mediator between BCE's and adolescent distress. Given that somatic and internalising symptoms were strongly related, future studies may also consider integrating outcomes within a single model. Utilising longitudinal designs, path analysis or structural equation modelling could be useful, although such methods require large sample sizes.

Importantly, future studies could explore how adaptive and avoidant coping develop over time and whether this influences the relationship with somatic symptoms. Objective or experimental measures of avoidance might help clarify its impact, especially given conceptual confusion and potential for it to be underreported. For example, short-term cognitive distraction or humour may differ significantly from chronic avoidance. Thus, conceptual clarity is required as these distinctions may partly explain null findings.

Finally, further refinement and validation of measures used to assess potential protective factors (i.e. BCE's, adaptive shame regulation) is required. The relationship between BCEs and adaptive shame regulation remains an insightful avenue of exploration.

Conclusion

This study offers preliminary evidence that shame regulation plays a key role in adolescent distress, with internalising styles, particularly withdrawal and attack-self, emerging as the strongest predictors of both somatic and emotional symptoms. Externalising shame was uniquely linked to internalising distress, highlighting that both inward and outward shame responses matter for adolescent mental health.

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Appendices

Appendix A: Ethical Approval

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Appendix A: Ethical Approval

The University Of Sheffield.

Downloaded: 11/06/2025
Approved: 02/02/2023

Chelsea Cade
Registration number: 200183688
Psychology
Programme: Doctorate in Clinical Psychology (DCLINPSY)

Dear Chelsea

PROJECT TITLE: Examining relationships between benevolent childhood experiences, shame regulation, psychopathology, and somatisation in adolescents: Testing a structural equation model
APPLICATION: Reference Number 048962

On behalf of the University ethics reviewers who reviewed your project, I am pleased to inform you that on 02/02/2023 the above-named project was **approved** on ethics grounds, on the basis that you will adhere to the following documentation that you submitted for ethics review:

- University research ethics application form 048962 (form submission date: 31/01/2023); (expected project end date: 06/07/2023).
- Participant information sheet 1113922 version 2 (31/01/2023).
- Participant information sheet 1113923 version 2 (31/01/2023).
- Participant information sheet 1113924 version 1 (14/11/2022).
- Participant consent form 1113925 version 1 (14/11/2022).
- Participant consent form 1113926 version 1 (14/11/2022).
- Participant consent form 1113927 version 1 (14/11/2022).

The following amendments to this application have been approved:

- Amendment approved: 10/02/2023
  - 1._Recruitment_Advertisement_V3_10-02-2023.pdf
  - 2._Parent_Information_Sheet_V3_10-02-2023.pdf
  - 3._Parent_Consent_Form_V3_10-02-2023.pdf
  - 4._Headteacher_Email_V2_10-02-2023.pdf
  - 5._Headteacher_Information_Sheet_Jan_23.pdf
  - 6._Headteacher_Consent_Form_V3_10-02-2023.pdf
  - 7._Teacher_Guidance_V3_10-02-2023.docx
  - 8._Parent_Letter__School_Recruitment__10-02-2023.pdf
  - 9._Teenager_Information_Sheet_V3_Jan_23.pdf
  - 10._Teenager_Consent_Form_V3_10-02-2023.pdf
  - 11._Teenager_Debrief_Sheet_V3_10-02-2023.docx.pdf
  - 12._Teenager_Demographic_Questions_Feb_23.pdf

If during the course of the project you need to deviate significantly from the above-approved documentation please inform me since written approval will be required.

Your responsibilities in delivering this research project are set out at the end of this letter.

Yours sincerely

Department Of Psychology Research Ethics Committee
Ethics Admin
Psychology

Please note the following responsibilities of the researcher in delivering the research project:

- The project must abide by the University's Research Ethics Policy: https://www.sheffield.ac.uk/research-services/ethics-integrity/policy
- The project must abide by the University's Good Research & Innovation Practices Policy: https://www.sheffield.ac.uk/polopoly_fs/1.671066!/file/GRIPPolicy.pdf
- The researcher must inform their supervisor (in the case of a student) or Ethics Admin (in the case of a member of staff) of any significant changes to the project or the approved documentation.
- The researcher must comply with the requirements of the law and relevant guidelines relating to security and confidentiality of personal data.
- The researcher is responsible for effectively managing the data collected both during and after the end of the project in line with best practice, and any relevant legislative, regulatory or contractual requirements.

Appendix B: STROBE Checklist

STROBE Statement—Checklist of items that should be included in reports of ***cross-sectional studies***

	Item No	Recommendation
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found
Introduction		
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported
Objectives	3	State specific objectives, including any prespecified hypotheses
Methods		
Study design	4	Present key elements of study design early in the paper
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group
Bias	9	Describe any efforts to address potential sources of bias
Study size	10	Explain how the study size was arrived at
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding
		(*b*) Describe any methods used to examine subgroups and interactions
		(*c*) Explain how missing data were addressed
		(*d*) If applicable, describe analytical methods taking account of sampling strategy
		(*e*) Describe any sensitivity analyses
Results		
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed
		(b) Give reasons for non-participation at each stage
		(c) Consider use of a flow diagram
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders
		(b) Indicate number of participants with missing data for each variable of interest
Outcome data	15*	Report numbers of outcome events or summary measures
Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included
		(*b*) Report category boundaries when continuous variables were categorized
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses

1

Discussion		
Key results	18	Summarise key results with reference to study objectives
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence
Generalisability	21	Discuss the generalisability (external validity) of the study results
Other information		
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based

*Give information separately for exposed and unexposed groups.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.

Appendix C: Participant Participation, Adolescent Quotes

Questionnaire Feedback

"I liked the way it was set out, it was visually pleasing, and the really long message at the end was nice, it was good to say thank you, and it was helpful."
(Aged 15 - Male)

"It will be easy, it takes 15 minutes if that, it gave a detailed description of what you had to do. The information sheet made it feel like it wasn't an intense thing and made it calm to do" (Aged 15 - Male)

It is really important because there is a stigma around boys and men not expressing their emotions, it is important for girls too, but boys don't talk about how they feel in certain situations, it is a good thing to do, and we don't do it enough"
(Aged 15 - Male)

"I like the feelings bit, it was hard admitting the truth and explaining how I felt. I understood it, even though I don't normally understand stuff like that"
(Aged 13 - Female)

"I think it is good enough and 100% amazing already; there was only one question I didn't understand"
(Aged 13 - Female)

Good use of the teenager information sheet and consent form, good variety of questions, I liked the motivational points it was quite cute"
(Aged 16 - Non-Binary)

"It is good to know there is a lot you can do to be supported, like helpline or going back to the research support officer. The prize draw is so cool, you can do a survey that takes 15 minutes and can win £20, that is not even like a pound a minute"
(Aged 16 - Non-Binary)

"It is quite easy and you do not need to think hard, but there was a lot to read. I could have done it in the middle of form, or philosophy morals and ethics. There isn't any problems I can think of, you have done a good job and nothing was worrying"
(Aged 16 - Non-Binary)

"Sometimes this is very important, there is difficulties with kids speaking up, but if you know it is independent and your parents won't see it, it feels private. I can answer what I want and it was clear about privacy"
(Aged 16 - Non-Binary)

"The questionnaire was easy to complete and quick which was nice, I don't think there will be many issues for younger people. I did not feel worried at any point, the questionnaire was supportive and simple, and straightforward to complete"
(Aged 14 - Male)

"The consent form and debrief sheet were easy to understand, but I think some open-ended questions could help like what is causing you the most stress, but this might be a problem for collecting data"
(Aged 14 - Male)

Appendix D: Recruitment Advertisements

Recruitment Advertisement | Version 3 | 10-02-23

The University Of Sheffield.

WE NEED YOUR HELP!

We are looking to recruit teenagers between 13 and 17 to participate in a research study as part of the Doctorate in Clinical Psychology at the University of Sheffield. The study will investigate relationships between positive life experiences and well-being in teenagers. All teenagers who take part will have the option to be entered into a **prize draw** to win **one of ten £20** Amazon vouchers. If you know someone aged between 13 to 17 or you are a parent/carer or guardian, please get in touch.

Participation is voluntary, and all data collected will be anonymised. You can find out more about the research project or ask questions by contacting the lead researcher at ccade1@sheffield.ac.uk. Alternatively, you can call the Research Support Officer Amrit Sinha on the contact details below and request a callback.

HOW TO PARTICIPATE:

(1) **If you are a parent, carer or guardian** of a child aged 13-17, you can access the study link below. If your child is aged between 13 and 15, then it is important you are with your child to read the parent information sheet and consent form. Once you sign permission for your child to participate, they will be redirected to a child-friendly information sheet and consent form. Once they provide consent, will they be able to complete the main study questions. Please find a quiet, private, distraction-free environment for your child to complete the questionnaire independently.

(2) **If you are not a parent, carer or guardian** but know someone aged between 13 and 17 who you think might want to participate, please share this information with their parents/carers or guardians. **Do not** directly share the study link with children unless they are 16 or 17. This is to ensure we safeguard young people and for parental consent to be sought.

WHAT DOES PARTICIPATION INVOLVE FOR A CHILD?

Your child will be asked to complete a short online questionnaire which takes up to 30 minutes. To do this they will need to click the study link or QR code below. They will first see a welcome screen. The child will be automatically redirected to the parent information sheet and consent form, followed by child-friendly information sheets. Your child can then choose

Appendix E: Head Teacher Email, Information Sheet and Consent Form

Headteacher Email | Version 2 | 10-02-2023

Dear [insert headteacher name]

We need your help! We request your support in recruiting young people between **13 and 17** to participate in our research study being conducted with the University of Sheffield.

The study will investigate the relationships between positive life experiences and well-being in teenagers. We understand that you are likely very busy; however, we would appreciate it if you could take the time to read the attached information and consider your school's participation. The study has been approved by the University of Sheffield Ethics Committee (Reference Number 048962).

This research is fundamental and will help us better understand how to support young people with emotional difficulties. We hope the results will be shared in an academic publication so that professionals better understand how children cope.

As a thank you, the lead researcher (Trainee Clinical Psychologist & Alumnus of Tong Leadership Academy, University of Leeds, and Liverpool John Moores University) would like to offer her time to provide some career support and inspiration to your students. This could be in the form of an assembly or online workshop. Young people who take part also have the option to be entered into a raffle prize to win a £20 Amazon voucher.

To participate, students must complete a short online questionnaire that can be accessed on any electronic device. Together, we hope we can think flexibly and pragmatically about when young people might be able to complete this, so there is minimal disruption to their school activities and learning.

You can find further details about the study using the attached information sheet, consent form, and teacher guidance. Do not hesitate to get in touch if you have any questions.

We hope to hear from you soon.

Yours sincerely,

[redacted]

Chelsea Cade (Lead researcher)
Trainee Clinical Psychologist
Clinical Psychology Unit
University of Sheffield
ccade1@sheffield.ac.uk

Under the supervision of.

The University Of Sheffield.

Department Of Psychology.
Clinical Psychology Unit.

Doctor of Clinical Psychology (DClinPsy) Programme Clinical supervision training and NHS research training & consultancy.

Clinical Applied Psychology Unit
Department of Psychology
University of Sheffield
Floor D, Cathedral Court
1 Vicar Lane
Sheffield
S1 1HD

Amrit Sinha Research Support Officer
Telephone: 0114 2226650
Fax: 0114 2226610
Email: a.sinha@sheffield.ac.uk

[Date]

Headteacher Information Sheet

Research project title:
Investigating relationships between life experiences and well-being in teenagers

Invitation to participate:
Dear head-teacher, we are writing to invite students in your school to participate in a research project. Before you decide to take part, please take time to read this information carefully. We have also provided supplementary teacher guidance if you consent to your school's participation. Your school's participation is voluntary, and there will be no negative consequences if you decide not to participate. We are aware that schools are under extreme time pressure. Therefore, we would like to work with you to ensure that there is minimal disruption and mutual benefit if your school participates.

What is the project's purpose?
Previous studies suggest that healthy development of shame regulation (coping with feelings of shame) depends on a child's experience of a safe, supportive environment in their early years. We also know how we cope with shame can influence how we think and feel. Based on this, we aim to better understand the relationship between positive early life experiences, emotion regulation and psychological well-being in teenagers aged 13 to 17. This includes symptoms of anxiety, depression, and somatic symptoms (bodily complaints).

Research with teenagers is fundamental as it is a critical stage of life where biological, social, and psychological changes occur. By investigating which factors impact well-being, professionals can be better equipped to understand and support young people. So the results of this study can be used to their full advantage, we aim to publish anonymised results in an academic journal. This will be accessible to researchers and professionals in the clinical and academic fields. We hope this will help provide information about how young people cope with emotional challenges and how their coping style can impact their physical and mental health. Knowing the key processes that impact adolescents' well-being provides an opportunity for early intervention and a target for interventions to avoid poor well-being continuing into adulthood.

This project is part of a doctorate qualification in Clinical Psychology (DCLINPsy). Students must complete a research project and submit a research report as evidence of their

academic work to fulfil the requirements to become a qualified and chartered Clinical Psychologist. It allows trainees to experience conducting psychological research in the clinical field and develop skills in producing academic publications. Data collection for this project will occur for up to 6 months, between February and July 2023, until our required sample of 300 students is met.

What would my school's participation involve?

The study involves young people aged 13-17 completing a secure online questionnaire. The lead researcher will provide class teachers of students aged 13-17 with a QR code or secure link to participate in the study. We would expect students to have completed the questionnaire within 30 minutes. The survey should be completed in a quiet, distraction-free environment like a computer room, during an afterschool club, break time, morning tutor group, or lesson. Please tell us what would be most suitable for your teachers and students.

Teachers would need to supervise the completion of the questionnaire with support from the lead researcher. The time and date of the visit can be agreed upon beforehand. Young people must answer the questions independently unless a student has support needs. Students will need access to an electronic device like their mobile phone. The student will access a child-friendly information sheet, followed by six short questionnaires. Following this, they will be provided with an electronic debrief sheet. They can choose to save the study documents to their electronic device.

Example questions:

Over the past few weeks, how often have you felt tired or had little energy?

Growing up, did you have at least one good friend?

How often have you been bothered by worrying too much about different things?

During the past 7 days, how much have you been bothered by stomach or bowel problems?

In situations where I feel insecure or doubt myself, I do the following:

1. *I shrink away from others*
2. *I blame other people for the situation*
3. *I act more confident than I am*
4. *I feel irritated with myself*

We gathered feedback from four young people when developing this questionnaire. All four children, aged 13, 15, and 16, took between 15 and 20 minutes to complete it.

"It was quite easy, you didn't have to think too hard" (16)
"There was nothing worrying about it" (16)
It is difficult for kids to speak up, but it was really clear about privacy (16)
It was a good thing to do, there is stigma about boys expressing emotions (15)
It will be easy for young people, it takes 15 minutes if that (15)
It is 100% amazing, it was hard admitting the truth and explaining how I felt" (13)
"I understand it, even though I don't usually understand things like that" (13)

Risks and benefits of taking part:

We recognise that schools may be under extreme pressure to deliver the academic curriculum to students, and therefore participation in this project may be difficult. However, we hope we can work together to make your participation possible with minimal disruption to students' learning. The lead researcher can be available to talk through any practical barriers you feel may impact your school taking part. We have provided some teacher guidance to support your teachers in setting up the classroom environment.

The lead researcher would also like to be available in the classroom to support your teachers with overseeing the completion of the project by students. The questionnaire is a one-off short survey which we hope you would consider being within usual curriculum activities and low risk to students.

We do not anticipate that there will be any significant disadvantages or risks to the children when taking part in this study. The questionnaires have been carefully selected to reduce the risk of children becoming distressed. Although some children may experience some natural discomfort when answering questions about emotions. We consider this to be a low-risk study and will provide children with some sources of support on completion, such as ChildLine.We can provide a copy of the child information sheet, consent form, and debrief sheet at your request.

You may wonder about parents and their involvement in this process. Based on the information above and in line with guidance from the British Psychological Society (BPS) Code of Human Research Ethics, we hope that you agree this research is low-risk and that the questionnaire could be considered part of a child's routine school activity. We will also provide students or teachers with a letter to parents regarding their child's involvement in the research. It will provide a link to a more detailed parent information sheet, as well as contact details of the researchers if they wish to raise any concerns or have any worries about their child's participation.

How is data stored?
Anonymised data (data that cannot personally identify a student) will be stored on a University of Sheffield secure database for up to 10 years after data collection. This will be used for academic assignments and research purposes.

What is the legal basis for processing personal data?
According to data protection legislation, we are required to inform you that the legal basis we are applying in order to process your personal data is that 'processing is necessary for the performance of a task carried out in the public interest' (Article 6(1)(e)). Further information can be found in the University's Privacy Notice https://www.sheffield.ac.uk/govern/data-protection/privacy/general.

Who is the data controller?
The University of Sheffield will act as the data controller for this study. This means that the university is responsible for keeping your data safe and using it properly.

Who has ethically approved this project?
This research study has been approved by the University of Sheffield Ethics Review Procedure, as administered by the Clinical Psychology Department. Reference no: TO INSERT HERE

How do I report a concern?

If you wish to report a concern or incident relating to any potential harm resulting from your school's involvement in this project, then please contact the project lead (Chelsea Cade) or supervisor (Markus Reuber). If the concern relates to Chelsea or Markus or you feel your concern has not been handled satisfactorily, please contact the Head of the Psychology Department, Professor Elizabeth Milne (psy-hod@sheffield.ac.uk, 01142226558) and/or the University's Research Ethics & Integrity Manager (Lindsay Unwin, l.v.unwin@sheffield.ac.uk).

If the complaint relates to how your school's personal data has been handled, you can find information about how to raise a complaint in the University's Privacy Notice: https://www.sheffield.ac.uk/govern/data-protection/privacy/general

How does my school opt-in?
If you wish to participate, please sign and return the head-teacher consent form. Upon receiving this, we could arrange a telephone conversation to discuss practical issues regarding recruitment within your school environment. We hope to agree on a date/time for the lead researcher to come into the school to support teachers with supervising students completing the questionnaires. If you have any questions about your school participating in this research project, please contact the lead researcher on the contact details below.

Thank you very much for taking the time to read this information sheet.

Yours sincerely,

Chelsea Cade (Lead Researcher)
[redacted]
Trainee Clinical Psychologist
Clinical Psychology Unit
University of Sheffield
ccade1@sheffield.ac.uk

Under the supervision of.
Professor Markus Reuber MD PhD FRCP
[redacted]
Professor of Clinical Neurology
Department of Neuroscience
Honorary Consultant Neurologist, Sheffield Teaching Hospitals NHS Foundation Trust
m.reuber@sheffield.ac.uk

Research Collaborator:
Dr Liat Levita BSc, PhD
[redacted]
Reader in Behavioural and Clinical Neuroscience
University of Sussex, School of Psychology
L.Levita@sussex.ac.uk

The University Of Sheffield.

HEAD-TEACHER CONSENT FORM

Research Study: Investigating relationships between positive life experiences and well-being in teenagers

Please read the following questions carefully to let us know if you understand what the study involved and if you are happy for your child to take part (do so by ticking each of the following statements)	**Yes**	**No**
I have read and understood the information sheet and teacher guidance [date] for this study, or it has been read to me. I have had the opportunity to think about the information and ask questions in regards to my school's participation in this research project.	☐	☐
I understand that taking part in the study will involve teenagers (aged between 13 and 17) within my school completing a secure online questionnaire accessed via a secure link or QR code which takes up to 30 minutes.	☐	☐
I agree that the researcher can collaborate with teachers or other staff members within my school to help supervise completion of the study questionnaire. I also agree that my students will have a quiet and confidential space to complete the questionnaire.	☐	☐
I understand the importance of maintaining the child's confidentiality at all times, and the expectation that the child will complete the questionnaire independently.	☐	☐
I understand that each child's participation is voluntary. They are free to stop taking part at any time without giving a reason. They do this by closing their browser at any point and continuing with any assigned academic tasks.	☐	☐
I understand that the information the children provide will be held securely for up to 10 years (in line with data protection requirements at the University of Sheffield) and that no one will be able to identify the children who take part from the information they provide.	☐	☐
I agree for the information my students provide to be used anonymously for research, study, and publication purposes.	☐	☐
Due to the nature of this research, it is very likely that other researchers may find the data collected to be useful in answering future research		

questions. I consent for the anonymous data of students within my school to be stored in a secure university archive and data repository for other researchers to use.	☐	☐
I understand that my consent replaces parental consent for young people below the age of 16.	☐	☐
I agree that the study does not pose any significant risk to young people (low risk study) and I am satisfied that completion of the questionnaire would be very similar to or fall within usual curriculum activities. I know that I can conduct my own risk assessment if necessary before consenting to take part and that I have weighed up the risks and benefits.	☐	☐

Based on all the above, I consent for teenagers aged between 13-17 within my school to take part in this research study ☐

Headteacher Name [PRINTED]: _____

School Name: _____

Headteacher Signature: _____

Date:_____

Contact email address: _____

Contact Number:_____

Name of researcher: [PRINTED]:_____

Signature:_____

Date:_____

[redacted]
Trainee Clinical Psychologist
Clinical Psychology Unit
University of Sheffield
ccade1@sheffield.ac.uk

Under the supervision of.
Professor Markus Reuber MD PhD FRCP
[redacted]
Professor of Clinical Neurology
Department of Neuroscience
Honorary Consultant Neurologist, Sheffield Teaching Hospitals NHS Foundation Trust
m.reuber@sheffield.ac.uk

Research Collaborator:
Dr Liat Levita BSc, PhD
[redacted]
Reader in Behavioural and Clinical Neuroscience
University of Sussex, School of Psychology
L.Levita@sussex.ac.uk

Thanks again for reading this consent form!

Appendix F: Supplementary Teacher Guidance

Teacher Guidance | Version 3 | 06-02-2023

Teacher Guidance

The headteacher [INSERT NAME] has consented that students between the ages of 13 and 17 within your school can be voluntarily involved in research being conducted by the University of Sheffield.

The current study is investigating relationships between positive life experiences and wellbeing in teenagers. This guidance has been developed by the researcher to support teachers with the data collection procedure.

At your request, the lead researcher can be onsite to support the oversight of data collection and completion of the questionnaires. They can also answer any of your questions, including questions raised by students. This is to ensure that the study does not add any additional pressure or burden onto your current curriculum activities. If covid-19 guidance changes then support will be available by telephone.

The research study aims to understand the link between positive early life experiences, emotion processing, and wellbeing in teenagers aged between 13 to 17. Students who are eligible to take part will be able to access an online questionnaire via a secure link or QR code. The questionnaire should take between 20-30 minutes to complete. We recommend that the questionnaire is completed in one sitting during tutor groups or non-core subjects. However, you can decide when would be most appropriate and least disruptive to your students.

If you want more information about the study, you can request to see the information sheet provided to the head-teacher. This will have contact details of the research team who are available to be contacted if you have any questions or concerns.

We do not anticipate that the questionnaire will be distressing to young people, although it does ask about their emotions and feelings which some young people might struggle to do. Therefore, we would encourage you to briefly check in with students following completion and signpost to the appropriate support if necessary.

Sources of support will be found on the child-friendly debrief form the students will have accessed online. They can also contact the researchers, who can be on hand to support students in the classroom if needed. The head-teacher will have only provided consent for young people to take part if they agree that the study is low risk to students. Therefore, it is unlikely that students will be distressed.

Appendix G: Adolescent Information Sheet and Consent Form

Adolescent Information Sheet | Version 3| 31-01-2023

The University Of Sheffield.

RESEARCH STUDY TITLE: Investigating the relationship between life experiences and wellbeing in teenagers


INVITATION

You are being invited to take part in this research because you are a teenager aged between 13 and 17. Please read the information below and take some time to decide whether you want to take part.

If you need more information or don't understand something you can ask an adult to explain it to you. There are no silly questions.

You can also ask the researchers using the contact details at the end of this document. Nothing bad will happen if you decide that you do not want to be involved in this research study, it is your choice.

WHAT IS THIS STUDY ABOUT?

We are inviting young people aged 13-17 to complete an online questionnaire so we can understand how you experience emotions and how this might impact your mental and physical wellbeing.

WHY IS STUDY BEING DONE?

Being a teenager can be tricky at times. During this stage of life, you are working out lots of different things. Such as how you fit into groups, what is important to you, or how you manage your feelings.

Researchers know that being able to do all these things can be impacted by our experiences in life. By doing this research study we hope to work out what things make teenagers feel better or worse.

WHAT WILL I HAVE TO DO?

After you have read this information sheet you can click "**NEXT**" on the online questionnaire. You will then need to read a consent form and check some boxes so we know you agree to taking part.

Once you have done this you will complete a questionnaire that should take you up to 30 minutes. You can take a break if you like, but please finish the whole questionnaire the same day.

The first part of the questionnaire will ask things about you such as your age, gender, school, and ethnicity.

The second part will ask you about how you have been feeling recently, how you manage feelings in certain situations and your life experiences.

EXAMPLES OF QUESTIONS YOU WILL BE ASKED:
How often have you felt tired or had little energy?

Growing up did you have at least one good friend?

Over the last two weeks, have often have you been bothered by

worrying too much about different things?

During the past 7 days, how much have you been bothered by stomach or bowel problems?

In situations where I feel insecure or doubt myself: (choose one)

1. I shrink away from others
2. I blame other people for the situation
3. I act more confident than I am
4. I feel irritated with myself

WHERE AND WHEN WILL THE STUDY BE DONE?
You will complete the questionnaire entirely online via a secure link. You might do this at home or school on an electronic device.

★ If you are completing the questionnaire at home, you can choose when you want to complete it

- ★ If you are completing the questionnaire at school your teachers will tell you when you can complete it
- ★ Please do this questionnaire on your own in a quiet space where other people cannot see your responses, this is to protect your privacy and confidentiality
- ★ If you need help with reading or understanding information you can ask your teacher or parent to help you

HOW DO WE KEEP YOUR INFORMATION SAFE?

All information you provide will be anonymous. This means that no one will be able to identify who you are by the information you give us. We do not ask for your name, address or other personal information. All your anonymous data will be stored securely by the University of Sheffield for up to 10 years. After this, it will be destroyed.

Sometimes other researchers might want to access your anonymous information. We share this so they can look at what we have found and so they can do more research like this. This is a common thing to do these days. You can find more information here: (Privacy notice: people who are neither staff nor students | Governance and Management | The University of Sheffield. The University of Sheffield will act as the data controller for this study. This means that the university is responsible for keeping your data safe and using it properly.

WHAT ARE THE BENEFITS OF TAKING PART?

Taking part helps us to understand better how teenagers manage their feelings and the impact this might have on their well-being. It will also help professionals such as doctors to help people your age.

Also, as a thank you for completing the questionnaire you have the option to be entered into a prize draw to win a £20 amazon voucher.

ARE THERE ANY RISKS TO ME TAKING PART?

We do not think there will be any negative effects from completing the questionnaire. Naturally, some teenagers might find it difficult to talk about managing their feelings. If this is you, then some questions could be more difficult for you than others.

If for any reason you feel upset or worried whilst completing the questionnaire you can close your browser. If you reach the end, you can reach out to an adult, including your parents, teacher or doctor. You will be given a list of people who can support you, such as Childline.

You can keep a copy of all of this information sheet, the consent form, and the information you are given at the end of the survey by clicking the links and saving a copy to your device.

MAKING A DECISION TO TAKE PART

You do not have to take part if you do not want to, choosing to take part is voluntary (your choice) and you can say no

- You will not be punished if you choose to say no
- If you decide to start the questionnaire, you can stop at any point and do not need to carry on. You do not need to give a reason, just close your web page. This is okay!
- Once you submit your response we cannot remove your answers as there will be no way of knowing which questionnaire was your

WANT TO TALK TO US OR HAVE CONCERNS ABOUT TAKING PART

If you have any questions or worries about taking part in this study and completing the questionnaire you can contact us by requesting a callback from the lead researcher (Chelsea Cade) by contacting Amrit Sinha (Research Officer) on the contact information below.

If you feel Chelsea has not listened to your concern, you can make a complaint by contacting the head of the psychology department (Professor Elizabeth Milne) on psy-hod@sheffield.ac.uk or 0114 2226558. You can also email the University Research Ethics & Integrity Manager Lindsay Unwin on l.v.unwin@sheffield.ac.uk. You can ask an adult to help you do this.

Lead researcher: Chelsea Cade, Trainee Clinical Psychologist

Under the supervision of. Markus Reuber

Amrit Sinha
Research Support Officer
a.sinha@sheffield.ac.uk
01142226650

This study has been approved by the University of Sheffield Ethics Committee Application No: XXXX

Thank you for reading

Adolescent Consent Form | Version 3 | 10-02-2023

Consent Form for teenagers

Research Study: Investigating the relationship between positive life experiences and well-being in teenagers

Please read the following statements carefully so we know that you understand what the study involves and that you are happy to participate. Please tick all boxes to which you agree.

	YES ✓	NO ✗
I have read and understood the information sheet for this study, or it has been read to me, and I have understood. I have had time to think about the information and ask questions.	☐	☐
I understand that my participation is voluntary. I know that I can say no and do not need to participate if I do not want to. I do not have to give a reason for saying no, and I understand that I can close my browser anytime.	☐	☐
I know that nobody will be able to identify me from the information I provide and that it will be completely anonymous.	☐	☐
I understand that the information I provide will be kept safe and stored securely for up to 10 years by the University of Sheffield.	☐	☐
I agree that the researcher can use my anonymous information inside and outside the university, for example, for their coursework.	☐	☐
I agree that my anonymous information can be viewed and used by other researchers who might want to do similar research.	☐	☐
I understand that once I click "submit" at the end of the questionnaire, I cannot take back my responses.	☐	☐
I know that if I feel worried or upset after completing the questionnaire, I can contact the researcher, an adult at home or in school, my doctor, or support such as ChildLine or Young Minds.	☐	☐

Based on all the information above, I agree to take part in the study ☐

Appendix H: Parent/Carer Information Sheet and Consent Form

Parent Information Sheet | Version 3 | 10-02-23

The University Of Sheffield.

Department Of Psychology.
Clinical Psychology Unit.

Doctor of Clinical Psychology (DClinPsy) Programme Clinical supervision training and NHS research training & consultancy.

Clinical Applied Psychology Unit
Department of Psychology
University of Sheffield
Floor D, Cathedral Court
1 Vicar Lane
Sheffield
S1 1HD

Amrit Sinha Research Support Officer
Telephone: 0114 2226650
Fax: 0114 2226610
Email: a.sinha@sheffield.ac.uk

Parent Information Sheet

Research Project Title:
Investigating relationships between positive life experiences and wellbeing in teenagers.

Invitation to participate
Dear parent, carer, or guardian, your child is invited to participate in a research project. Before you decide whether or not you want your child to participate, it is important for you to understand why the research is being done and what it will involve. Please take your time to read the following information carefully and discuss it with others if you wish.

As you are likely viewing this document online, you are more than welcome to close down your browser after reading the parent information to consider whether you would like your child to participate. You can then re-click the link below to begin at your convenience. If anything is unclear or if you would like more information, then please get in touch. Thank you for reading this and considering being involved in this valuable research.

What is the project's purpose?
To better understand the relationship between positive early life experiences, emotion regulation and psychological well-being in teenagers aged 13 to 17. This includes measures of anxiety, depression, and somatic symptoms (bodily complaints). Research with teenagers is fundamental as it is a critical stage of life where biological, social, and psychological changes occur. By investigating which factors impact well-being, professionals can be better equipped to understand and support young people.

So this research can be used to understand young people better, we also aim to publish the anonymised results in an academic journal. This will be accessible to a range of researchers and professionals in the clinical and academic fields. We hope this will help to provide helpful information about how young people cope with emotional challenges and how their style of coping can impact their physical and

mental health. Knowing the key processes which impact well-being in adolescents provides an opportunity for early intervention and a target for interventions to avoid poor well-being continuing into adulthood.

This project also forms part of a doctorate qualification in Clinical Psychology (DCLINPsy). Students must complete a research project and submit a research report as evidence of their academic work to fulfil the requirements to become a qualified and chartered Clinical Psychologist. It also allows trainees to experience conducting psychological research in the clinical field and develop skills in producing academic publications. Data collection for this project will occur for up to 6 months, between January and June 2023.

Does my child have to take part?
Participation is completely voluntary. It is up to you and your child whether you agree to participate in this research. If you decide you are happy for your child to participate, you can keep this information, and you will be asked to sign a parental consent form. Your child will also receive a child-friendly information sheet and consent form. Your child has the option to withdraw from the study up until they have submitted their survey. This is because there is no way of identifying your child's data due to anonymity after this point. You or your child can withdraw by closing the web browser anytime. You or your child do not need to provide a reason for withdrawing, and there will be no negative consequences.

What does your child's participation involve?
For your child to participate, you must sign parental consent on the next page. You do this by checking the appropriate boxes. Links are provided to save copies of the parent information sheet and consent form. Once you consent, you will move on to the main research study. Do not begin until your child is ready. We ask that your child completes the rest of the study independently in a quiet, distraction-free environment to maintain their confidentiality and encourage autonomy in their responses.

When your child begins, they will access a child-friendly information sheet and consent form. They will be asked to sign consent before moving on. If they choose to participate, they will complete six short questionnaires, which should take no longer than 30 minutes. These questionnaires will collect data on demographics (age, gender, ethnicity, socio-economic status), positive childhood experiences, anxiety, depression, shame regulation, and somatic symptoms (body symptoms). All questions are closed-ended; your child is asked to choose items from a list.

Below are examples from each study questionnaire:

Over the past few weeks, how often have you felt tired or had little energy?
Growing up, did you have at least one good friend?
How often have you been bothered by worrying too much about different things?
During the past 7 days, how much have you been bothered by stomach or bowel problems?
In situations where I feel insecure or doubt myself, I do the following:

1. *I shrink away from others*
2. *I blame other people for the situation*
3. *I act more confident than I am*

4. *I feel irritated with myself.*

Once the questionnaire has been completed and submitted, your child will have access to a child-friendly debriefing sheet. This will thank them for their time and provide information about entering a prize draw to win one of ten £20 amazon vouchers. Although we do not anticipate the questions to be distressing for your child, the debrief form encourages them to speak with a trusted adult if they have any worries. It also provides contact information for support organisations, such as ChildLine and Young Minds. We would encourage you to check in on our child after completing the questionnaire.

What are the disadvantages or risks of taking part?
We do not anticipate that there will be any significant disadvantages or risks to your child when taking part in this research study. The questionnaires have been carefully selected to reduce your child's risk of becoming distressed. Although it is possible that some children may experience some natural discomfort when answering questions about emotions. As this is a one-off short survey, it is very unlikely that completion of these questionnaires during school hours will have disrupted your child's learning.

Will my child's data be kept safe and confidential?
All data collected as part of this project is non-identifiable and anonymous; there will be no way to link your child to the answers of this survey. The study questionnaire has been designed on a software called "Qualtrics", which is highly secure and is used across several universities for conducting research. Your child's IP address will not be recorded throughout data collection, and there is no option for your child to enter text into the questionnaire.

What is the legal basis for processing my child's personal data?
According to data protection legislation, we are required to inform you that the legal basis we are applying in order to process your personal data is that 'processing is necessary for the performance of a task carried out in the public interest' (Article 6(1)(e)). Further information can be found in the University's Privacy Notice https://www.sheffield.ac.uk/govern/data-protection/privacy/general.

How is my child's data used?
Your child's individual anonymised data will be stored temporarily on the Qualtrics platform. Once data collection is complete, the data will be removed from Qualtrics and stored on a secure online university drive. This data will then be analysed collectively with other young people who took part. The results will be documented within an academic report (thesis) or research presentation. Members of the academic staff at the University of Sheffield will mark the doctoral thesis. We also aim to publish research findings in an academic journal. After completing the student's qualification, data will be held securely for up to 10 years on university servers and Sheffield University Repository (ORDA). ORDA is for non-sensitive anonymised data and allows for researcher collaboration and data reuse. Data on university servers can be accessible to other researchers on request. All requests must be approved by the lead researcher and/or project supervisor.

Who is the data controller?
The University of Sheffield will act as the data controller for this study. The university is responsible for keeping your data safe and using it properly.

Who has ethically approved this project?
This research study has been approved by the University of Sheffield Ethics Review Procedure, administered by the Clinical Psychology Department. Reference no: 048962.

How do I report a concern?
If you wish to report a concern or incident relating to any potential harm resulting from your child's involvement in this project, then please contact the project lead (Chelsea Cade) or supervisor (Markus Reuber). If the concern relates to Chelsea or Markus or you feel your concern has not been handled satisfactorily, please contact the Head of the Psychology Department, Professor Elizabeth Milne (psy-hod@sheffield.ac.uk, 01142226558) and/or the University's Research Ethics & Integrity Manager (Lindsay Unwin, l.v.unwin@sheffield.ac.uk).

If the complaint relates to how your personal data has been handled, you can find information about how to raise a complaint in the University's Privacy Notice: https://www.sheffield.ac.uk/govern/data-protection/privacy/general.

Thank you very much for taking the time to read this information sheet.

Yours sincerely,
Chelsea Cade (Lead Researcher)

[redacted]
Trainee Clinical Psychologist
Clinical Psychology Unit
University of Sheffield
ccade1@sheffield.ac.uk

Under the supervision of. Professor Markus Reuber MD PhD FRCP

[redacted]
Professor of Clinical Neurology
Department of Neuroscience, Honorary Consultant Neurologist
Sheffield Teaching Hospitals NHS Foundation Trust
m.reuber@sheffield.ac.uk

Research Collaborator:
Dr Liat Levita BSc, PhD

[redacted]
Reader in Behavioural and Clinical Neuroscience
University of Sussex, School of Psychology
L.Levita@sussex.ac.uk

The University Of Sheffield.

PARENT CONSENT FORM

Research Study: Investigating the relationship between positive life experiences and well-being in teenagers

Please read the following questions carefully to let us know if you understand what the study involves and if you are happy for your child to take part (do so by ticking each of the following statements)	**Yes**	**No**
I have read and have understood the information sheet for this project dated XX or it has been read to me. (If you answer no to this question, please do not proceed with this consent form until you are fully aware of what your child's participation in the project will involve).	☐	☐
I agree for my child to take part in this research study. I understand that participating in the study will involve my child completing a secure online questionnaire via a provided link that takes up to 30 minutes. I agree for them to access the link, read the information, and choose to complete the questionnaire if they wish.	☐	☐
I understand that my child's participation is voluntary. They are free to stop and withdraw from taking part at any time without giving any reason. I understand that they are free to decline to answer and can close their web browser at any point without any negative repercussions.	☐	☐
I understand that the IP address of the device used to access the survey will be stored initially when my child submits their responses. This information will be deleted when the researcher removes duplicate questionnaires.	☐	☐
I understand that the information my child provides is anonymous (unidentifiable) and that it will be held securely for a period of 10 years (in line with data protection requirements at the University of Sheffield).	☐	☐
I agree that my child's information will be used anonymously for research, study, and publication purposes. This anonymous data used to write the research project may be accessible online via academic journals and the university website. No identifiable information is being collected and, therefore, will not be named in these outputs.	☐	☐
Due to the nature of this research, other researchers may likely find the data collected helpful in answering future research questions. I consent for my child's anonymous data to be stored in a secure archived repository.	☐	☐

The lead researcher would grant permission for this. I also understand that authorised researchers who access the data must agree to and preserve the confidentiality agreements highlighted in the information sheet.		
I agree to assign the copyright I hold in any materials generated as part of this project to The University of Sheffield.	☐	☐
I understand that I have a right to contact the research team if I have concerns about my child's participation in the study. I am aware that I can find the researcher's contact details and the complaints procedure within the parent information sheet.	☐	☐

Based on all of the above, I agree for my child to take part in this study ☐

[redacted]
Trainee Clinical Psychologist
Clinical Psychology Unit
University of Sheffield
ccade1@sheffield.ac.uk

Under supervision of.
Professor Markus Reuber MD PhD FRCP
[redacted]
Professor of Clinical Neurology
Department of Neuroscience
Honorary Consultant Neurologist, Sheffield Teaching Hospitals NHS Foundation Trust
m.reuber@sheffield.ac.uk

Research Collaborator:
Dr Liat Levita BSc, PhD
[redacted]
Reader in Behavioural and Clinical Neuroscience
University of Sussex, School of Psychology
L.Levita@sussex.ac.uk

Thanks again for reading this consent form!

Appendix I: Adolescent Debrief Sheet

Teenager Debrief Sheet | Version 3 | 10-02-2023

The University Of Sheffield.

DEBRIEF SHEET FOR TEENAGERS

THANK YOU FOR YOUR TIME!

Thank you for participating in this important research about your experiences of emotions, mental health, and well-being. We hope you found this interesting.

We are doing this research to better understand the link between positive early life experiences and how teenagers deal with shame (feeling like you have done something wrong or bad). Shame is one of our emotions, like being happy, sad, or angry. Feeling shame is okay.

Any issues: If you found any part of this experience distressing or if it made you feel worried at all, then you can ask your parents or carer to contact the researcher. You can ask us questions, and we will try our best to answer.

If you feel worried or unsure about how to do this, you can ask an adult to help. You can request a callback by phone by contacting Amrit Sinha at a.sinha@sheffield.ac.uk. Amrit is our Research Support Officer, and he will be able to take a message so that I can call you back.

You can also choose to speak to a parent, carer, GP, or teacher about your worries if this feels safer or more comfortable.

We have provided a list of people who can support you if you feel worried about your mental health and need someone to listen to you. Remember to take a screenshot or write down this information so you can return to it.

Prize Draw: If you would like to be entered into our prize draw to win one of ten £20 Amazon vouchers, then please click the link below so you can give us your email address. We will only contact you if you are the prize draw winner. You will hear from us once this research is finished, which could be up

to 6 months after you have completed your questionnaire. You can close your browser now if you do not want to be entered. [LINK TO ANONYMISED SURVEY]

1. **Childline**: Call 0800 1111 | email | online chat |www.childline.org.uk

   Childline helps anyone under the age of 19 in the UK with any issue they are going through. Whether this is big or small, their trained counsellors are there to support you. Childline is free, confidential and available any time, day or night.

   childline
   ONLINE, ON THE PHONE, ANYTIME

2. **Young Minds - Text YM to 86258**

   www.youngminds.org.uk

   Young Minds supports young people struggling with how they are feeling or if they want to know more about mental health or medication. They have many online practical resources to help you and lots of information about where and how you can seek support. You can text the above number any time to chat with someone if you are struggling to cope.

   YOUNGMiNDS
   fighting for young people's mental health

3. **Samaritans: Call 116 123 | email | write**

   www.samaritans.org

Teenager Debrief Sheet | Version 3 | 10-02-2023

Samaritans is a safe place to talk whenever you like about whatever is happening. They will not tell you what to do, but they will listen and try to understand what you are going through. Samaritans are free, confidential, and available any time, day or night, for people of any age within the UK.

Contact details:

Research Support Officer

Amrit Sinha | a.sinha@sheffield.ac.uk

Lead researcher:

Chelsea Cade, Trainee Clinical Psychologist

Under the supervision of.

Professor Markus Reuber, Professor of Clinical Neurology

Thanks again for your time! I hope you have a lovely day.

Appendix J: Parent/Carer Letter

Parent Letter V2 10-02-2023

The University Of Sheffield.

Dear parent/carer or guardian,

Your child was asked to participate in an exciting and valuable study conducted by researchers at the University of Sheffield. The research aims to understand the relationships between positive life experiences and well-being in teenagers aged 13-17. We understand you might want to know more about what your child may have been a part of, so we have provided a summary and a link to a detailed parent information sheet.

The headteacher of your child's school has agreed with the researchers that completing the questionnaire is low risk to your children. They also consider it to fall within the range of usual curriculum activities. In other words, the researcher and headteacher do not think the study will cause your child any harm.

Your child was asked to complete a one-off secure online survey as part of the research. It asked them questions about their positive experiences, emotions, and well-being. Your child had the option to participate voluntarily. They could also withdraw from the study by closing down their browser at any time. Survey responses are anonymous and confidential, which means that we will not be able to identify your child by the information they have provided.

Although this study is low risk, we have provided your child, if they took part, with information about where to get support if for any reason the questions caused them any distress. Please find links below to these support sites for you to have a look at, and share with your child, now or in the future, if needed. They were thanked for their time and given the option to enter into a prize draw to win a £20 Amazon voucher.

www.youngminds.org.uk

www.childline.org.uk

www.samaritans.org

All your child's anonymised data is stored securely by the University of Sheffield. If you want to find out more about data storage, please access the link to the parent information sheet. As your child's data has been recorded anonymously, it is now not possible to withdraw their data as we would not be able to identify their information. However, if you have any questions or concerns about your child taking part then do not hesitate to contact us.

Parent Information Sheet
https://docs.google.com/document/d/1EfRTx_AV3gyX94Hbsgh7Q0jXiWsZkBY1CCAFRVliaj4/edit?usp=sharing

BPS Code of Human Research Ethics

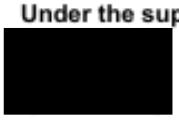
1

https://drive.google.com/file/d/14Y6qLLFHkFsz7FiR7qiPJDe45dqHRU2W/view?usp=sharing

Yours sincerely,

Chelsea Cade (Lead researcher)
Trainee Clinical Psychologist
Clinical Psychology Unit
University of Sheffield
ccade1@sheffield.ac.uk

Under the supervision of.



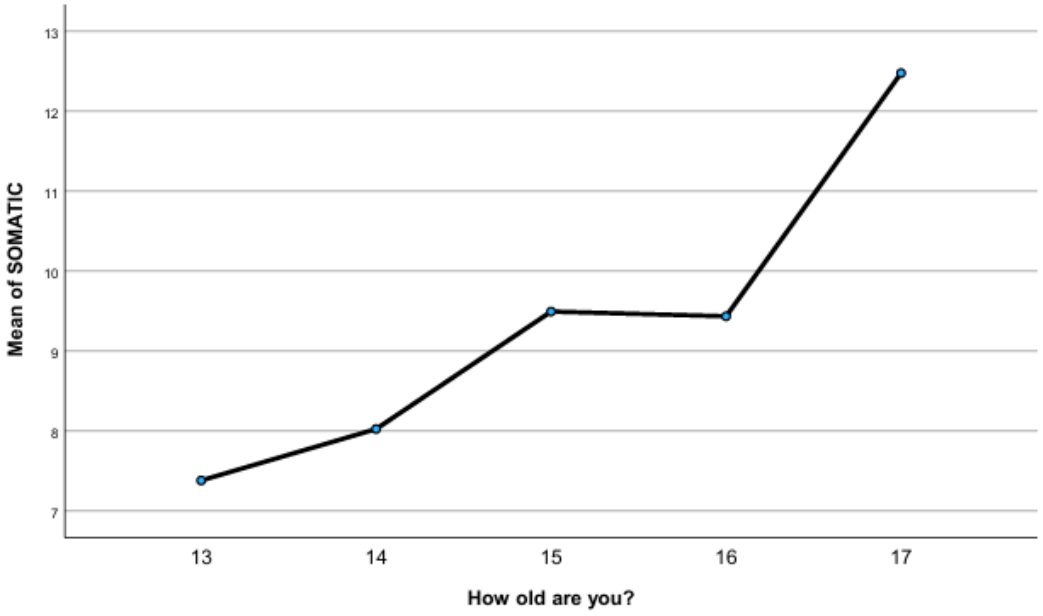
Professor Markus Reuber MD PhD FRCP
Professor of Clinical Neurology
Department of Neuroscience
Honorary Consultant Neurologist, Sheffield Teaching Hospitals NHS Foundation Trust
m.reuber@sheffield.ac.uk

Research Collaborator:
Dr Liat Levita BSc, PhD
Reader in Behavioural and Clinical Neuroscience
University of Sussex, School of Psychology
l.levita@sheffield.ac.uk

Appendix K: Study Measures (redacted)

Appendix L: Between-Group Comparisons on Somatic Symptoms (SPSS Output)

Age and somatic symptoms



Oneway

Descriptives

SOMATIC

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean Lower Bound	95% Confidence Interval for Mean Upper Bound	Minimum
13	37	7.38	6.763	1.112	5.12	9.63	0
14	67	8.02	7.556	.923	6.18	9.87	0
15	30	9.49	8.124	1.483	6.46	12.53	0
16	61	9.43	6.716	.860	7.71	11.15	0
17	44	12.48	7.705	1.162	10.13	14.82	0
Total	239	9.29	7.470	.483	8.34	10.24	0

Descriptives

SOMATIC

	Maximum
13	26
14	32
15	32
16	26
17	28
Total	32

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
SOMATIC	Based on Mean	.672	4	234	.612
	Based on Median	.537	4	234	.709
	Based on Median and with adjusted df	.537	4	214.975	.709
	Based on trimmed mean	.625	4	234	.645

ANOVA

SOMATIC

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	692.275	4	173.069	3.217	.014
Within Groups	12588.225	234	53.796		
Total	13280.500	238			

ANOVA Effect Sizes[a,b]

		Point Estimate	95% Confidence Interval Lower	95% Confidence Interval Upper
SOMATIC	Eta-squared	.052	.002	.102
	Epsilon-squared	.036	-.015	.087
	Omega-squared Fixed-effect	.036	-.015	.087
	Omega-squared Random-effect	.009	-.004	.023

a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model.

b. Negative but less biased estimates are retained, not rounded to zero.

Multiple Comparisons

Dependent Variable: SOMATIC

	(I) How old are you?	(J) How old are you?	Mean Difference (I-J)	Std. Error	Sig.
Tukey HSD	13	14	-.644	1.502	.993
		15	-2.114	1.802	.767
		16	-2.055	1.528	.663
		17	-5.099*	1.636	.017
	14	13	.644	1.502	.993
		15	-1.470	1.611	.892
		16	-1.411	1.298	.813
		17	-4.454*	1.423	.017
	15	13	2.114	1.802	.767
		14	1.470	1.611	.892
		16	.059	1.636	1.000
		17	-2.985	1.737	.424
	16	13	2.055	1.528	.663
		14	1.411	1.298	.813
		15	-.059	1.636	1.000
		17	-3.043	1.451	.224
	17	13	5.099*	1.636	.017
		14	4.454*	1.423	.017
		15	2.985	1.737	.424
		16	3.043	1.451	.224
Bonferroni	13	14	-.644	1.502	1.000
		15	-2.114	1.802	1.000
		16	-2.055	1.528	1.000
		17	-5.099*	1.636	.021
	14	13	.644	1.502	1.000
		15	-1.470	1.611	1.000
		16	-1.411	1.298	1.000
		17	-4.454*	1.423	.020
	15	13	2.114	1.802	1.000
		14	1.470	1.611	1.000
		16	.059	1.636	1.000
		17	-2.985	1.737	.870
	16	13	2.055	1.528	1.000
		14	1.411	1.298	1.000
		15	-.059	1.636	1.000
		17	-3.043	1.451	.370

Multiple Comparisons

Dependent Variable: SOMATIC

(I) How old are you?	(J) How old are you?	Mean Difference (I-J)	Std. Error	Sig.
17	13	5.099*	1.636	.021
	14	4.454*	1.423	.020
	15	2.985	1.737	.870
	16	3.043	1.451	.370

Multiple Comparisons

Dependent Variable: SOMATIC

(I) How old are you?	(J) How old are you?	95% Confidence Interval	
		Lower Bound	Upper Bound
17	13	.46	9.74
	14	.42	8.49
	15	-1.94	7.91
	16	-1.07	7.15

*. The mean difference is significant at the 0.05 level.

Homogeneous Subsets

SOMATIC

	How old are you?	N	Subset for alpha = 0.05	
			1	2
Tukey HSD[a,b]	13	37	7.38	
	14	67	8.02	
	16	61	9.43	9.43
	15	30	9.49	9.49
	17	44		12.48
	Sig.		.662	.299

Means for groups in homogeneous subsets are displayed.

a. Uses Harmonic Mean Sample Size = 43.704.

b. The group sizes are unequal. The harmonic mean of the group sizes is used. Type I error levels are not guaranteed.

Ethnicity and somatic symptoms

Oneway

Descriptives

SOMATIC

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
White	127	9.50	7.273	.645	8.22	10.78
Black	31	7.66	8.286	1.488	4.62	10.70
Asian	45	10.10	8.481	1.264	7.55	12.65
Mixed	13	9.77	6.760	1.875	5.68	13.85
Other/PNS	23	8.43	5.661	1.180	5.98	10.88
Total	239	9.29	7.470	.483	8.34	10.24

Descriptives

SOMATIC

	Minimum	Maximum
White	0	32
Black	0	32
Asian	0	32
Mixed	0	22
Other/PNS	0	18
Total	0	32

Tests of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
SOMATIC	Based on Mean	.985	4	234	.417
	Based on Median	.772	4	234	.545
	Based on Median and with adjusted df	.772	4	214.790	.545
	Based on trimmed mean	.831	4	234	.507

ANOVA

SOMATIC

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	137.392	4	34.348	.612	.655
Within Groups	13143.107	234	56.167		
Total	13280.500	238			

ANOVA Effect Sizes[a,b]

		Point Estimate	95% Confidence Interval Lower	Upper
SOMATIC	Eta-squared	.010	.000	.031
	Epsilon-squared	-.007	-.017	.015
	Omega-squared Fixed-effect	-.007	-.017	.015
	Omega-squared Random-effect	-.002	-.004	.004

a. Eta-squared and Epsilon-squared are estimated based on the fixed-effect model.

b. Negative but less biased estimates are retained, not rounded to zero.

Multiple Comparisons

Dependent Variable: SOMATIC

	(I) ETH_5LVLS	(J) ETH_5LVLS	95% ... Upper Bound
Bonferroni	White	Black	6.09
		Asian	3.08
		Mixed	5.92
		Other/PNS	5.89
	Black	White	2.42
		Asian	2.52
		Mixed	4.91
		Other/PNS	5.08
	Asian	White	4.29
		Black	7.40
		Mixed	7.02
		Other/PNS	7.12
	Mixed	White	6.45
		Black	9.12
		Asian	6.35
		Other/PNS	8.71
	Other/PNS	White	3.74
		Black	6.61
		Asian	3.77
		Mixed	6.03

Post Hoc Tests

Multiple Comparisons

Dependent Variable: SOMATIC

	(I) ETH_5LVLS	(J) ETH_5LVLS	Mean Difference (I-J)	Std. Error	Sig.	95% ... Lower Bound
Bonferroni	White	Black	1.837	1.501	1.000	-2.42
		Asian	-.601	1.300	1.000	-4.29
		Mixed	-.268	2.182	1.000	-6.45
		Other/PNS	1.073	1.698	1.000	-3.74
	Black	White	-1.837	1.501	1.000	-6.09
		Asian	-2.438	1.749	1.000	-7.40
		Mixed	-2.105	2.476	1.000	-9.12
		Other/PNS	-.764	2.062	1.000	-6.61
	Asian	White	.601	1.300	1.000	-3.08
		Black	2.438	1.749	1.000	-2.52
		Mixed	.333	2.360	1.000	-6.35
		Other/PNS	1.674	1.921	1.000	-3.77
	Mixed	White	.268	2.182	1.000	-5.92
		Black	2.105	2.476	1.000	-4.91
		Asian	-.333	2.360	1.000	-7.02
		Other/PNS	1.341	2.600	1.000	-6.03
	Other/PNS	White	-1.073	1.698	1.000	-5.89
		Black	.764	2.062	1.000	-5.08
		Asian	-1.674	1.921	1.000	-7.12
		Mixed	-1.341	2.600	1.000	-8.71

Gender and somatic symptoms

NPar Tests

Kruskal-Wallis Test

Ranks

	Gender (3groups_combinednonbinary/other)	N	Mean Rank
SOMATIC	Female	128	138.70
	Male	99	90.86
	Nonbin/other	12	160.88
	Total	239	

Test Statistics[a,b]

	SOMATIC
Kruskal-Wallis H	31.217
df	2
Asymp. Sig.	<.001

a. Kruskal Wallis Test

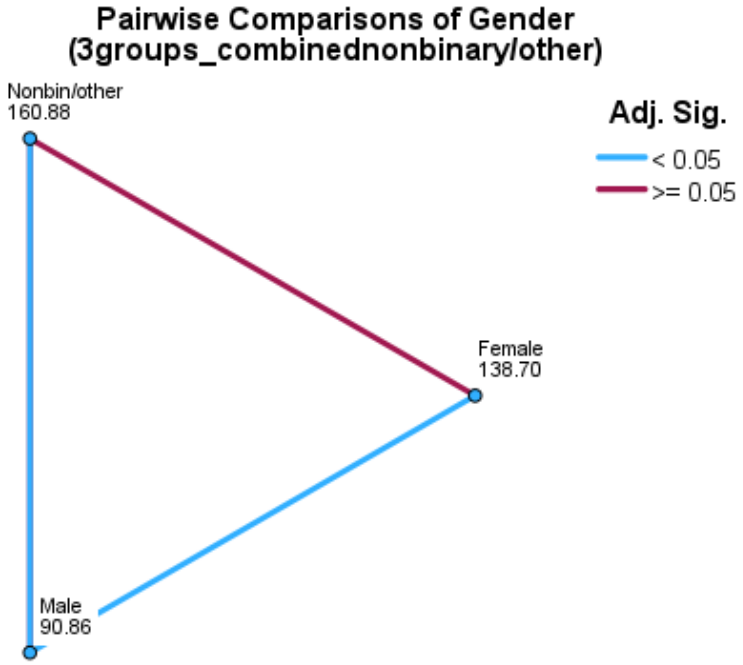
b. Grouping Variable: Gender (3groups_combinednonbinary/other)

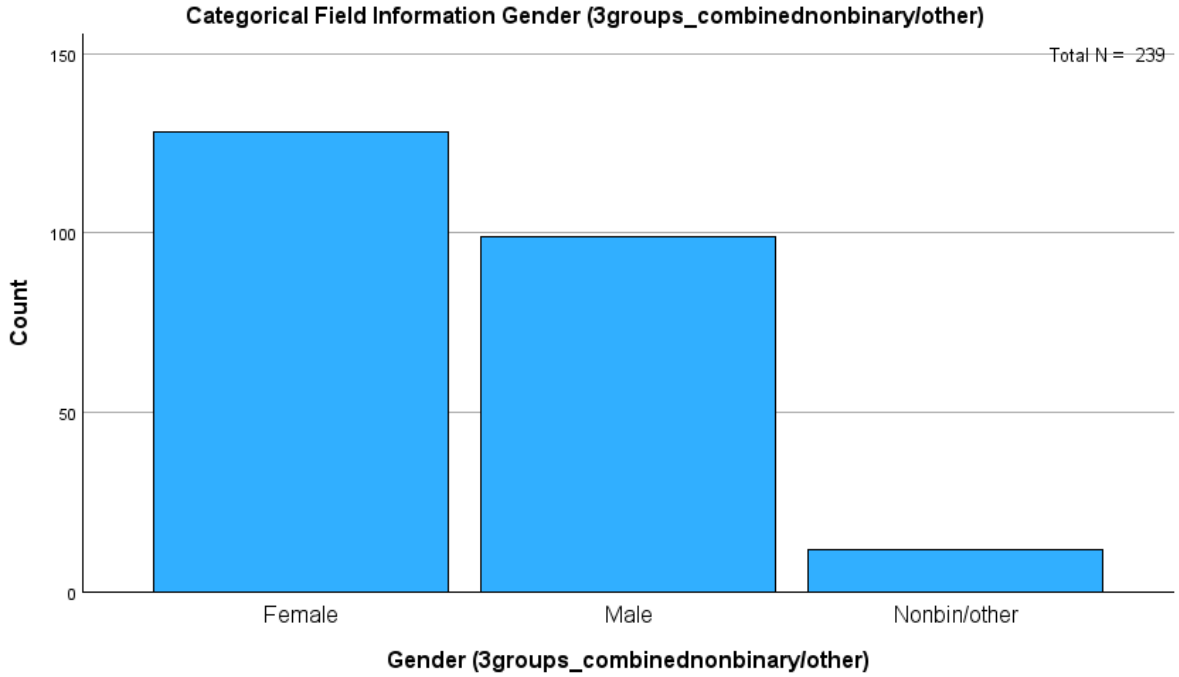
Pairwise Comparisons of Gender (3groups_combinednonbinary/other)

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.[a]
Male-Female	47.839	9.243	5.176	<.001	.000
Male-Nonbin/other	-70.011	21.109	-3.317	<.001	.003
Female-Nonbin/other	-22.172	20.848	-1.063	.288	.863

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
Asymptotic significances (2-sided tests) are displayed. The significance level is .050.

a. Significance values have been adjusted by the Bonferroni correction for multiple tests.


Pairwise Comparisons of Gender (3groups_combinednonbinary/other)
Nonbin/other
160.88
Female
138.70
Male
90.86
Adj. Sig.
< 0.05
>= 0.05
Each node shows the sample average rank of Gender (3groups_combinednonbinary/other).


Categorical Field Information Gender (3groups_combinednonbinary/other)
Total N = 239
Count
150
100
50
0
Female
Male
Nonbin/other
Gender (3groups_combinednonbinary/other)

Diagnosis and somatic symptoms

Explore

T-Test

Group Statistics

	DIAGNOSIS	N	Mean	Std. Deviation	Std. Error Mean
SOMATIC	No	175	8.37	6.763	.511
	Yes	64	11.81	8.698	1.087

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means	
		F	Sig.	t	df
SOMATIC	Equal variances assumed	7.709	.006	-3.219	237
	Equal variances not assumed			-2.868	92.304

Independent Samples Test

		t-test for Equality of Means			
		Significance			
		One-Sided p	Two-Sided p	Mean Difference	Std. Error Difference
SOMATIC	Equal variances assumed	<.001	.001	-3.445	1.070
	Equal variances not assumed	.003	.005	-3.445	1.201

Independent Samples Test

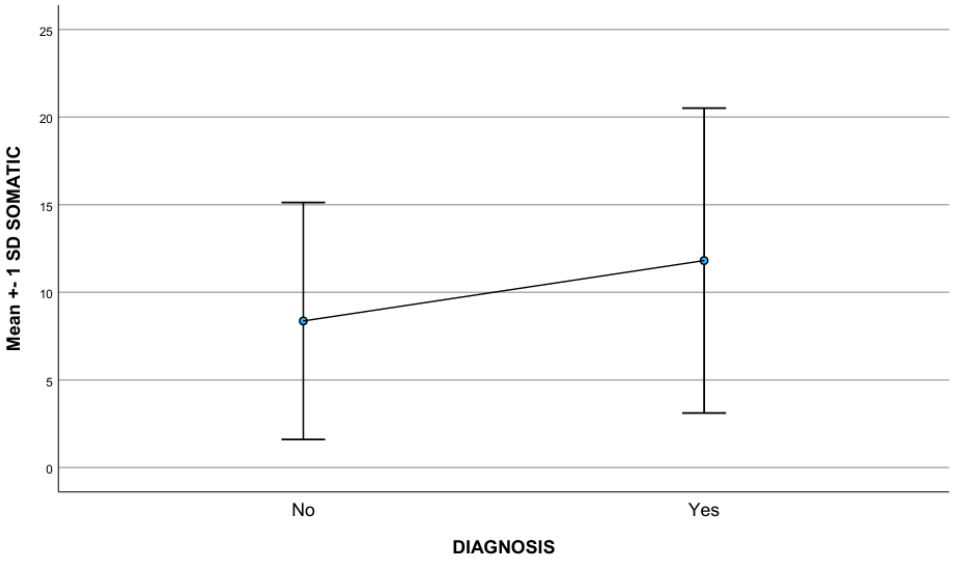
		t-test for Equality of Means	
		95% Confidence Interval of the Difference	
		Lower	Upper
SOMATIC	Equal variances assumed	-5.554	-1.337
	Equal variances not assumed	-5.831	-1.059

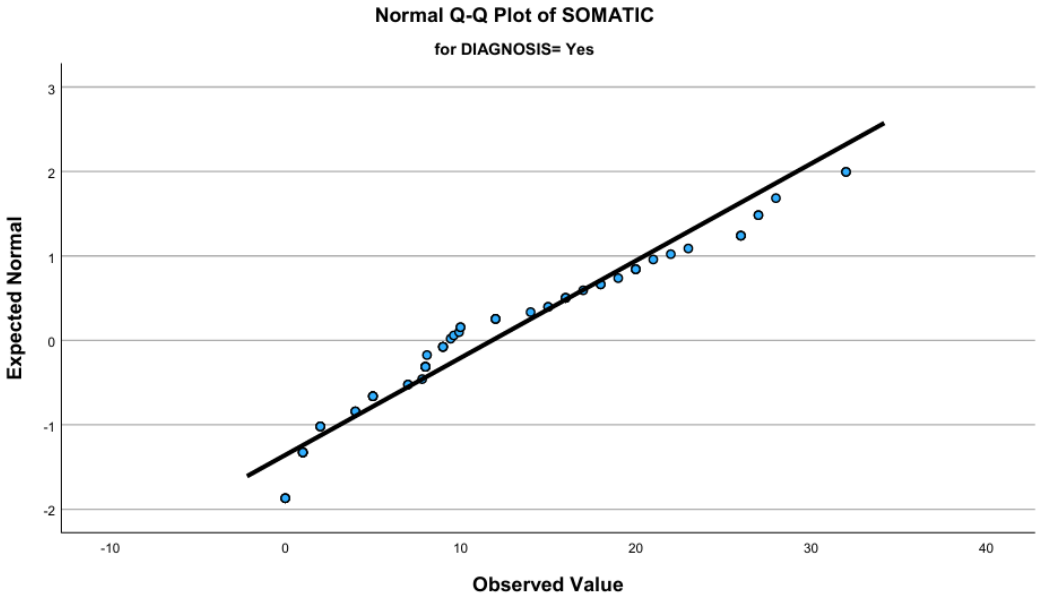
Independent Samples Effect Sizes

		Standardizer[a]	Point Estimate	95% Confidence Interval Lower	Upper
SOMATIC	Cohen's d	7.327	-.470	-.759	-.180
	Hedges' correction	7.351	-.469	-.757	-.180
	Glass's delta	8.698	-.396	-.689	-.100

a. The denominator used in estimating the effect sizes.
Cohen's d uses the pooled standard deviation.
Hedges' correction uses the pooled standard deviation, plus a correction factor.
Glass's delta uses the sample standard deviation of the control group.

Graph





Appendix M: Non-Parametric Correlational Analysis (SPSS Output)

Correlations

			AGE_RANGE	SES	BCES
Spearman's rho	AGE_RANGE	Correlation Coefficient	1.000	-.056	.054
		Sig. (2-tailed)	.	.387	.408
		N	239	239	239
	SES	Correlation Coefficient	-.056	1.000	-.088
		Sig. (2-tailed)	.387	.	.175
		N	239	239	239
	BCES	Correlation Coefficient	.054	-.088	1.000
		Sig. (2-tailed)	.408	.175	.
		N	239	239	239
	DEPRESSION	Correlation Coefficient	.229**	-.080	-.367**
		Sig. (2-tailed)	<.001	.218	<.001
		N	239	239	239
	ANXIETY	Correlation Coefficient	.182**	.026	-.351**
		Sig. (2-tailed)	.005	.691	<.001
		N	239	239	239
	ANX_DEPP	Correlation Coefficient	.215**	-.030	-.367**
		Sig. (2-tailed)	<.001	.641	<.001
		N	239	239	239
	SRWithdrawal	Correlation Coefficient	.294**	.048	-.213**
		Sig. (2-tailed)	<.001	.456	<.001
		N	239	239	239
	SRAttackSelf	Correlation Coefficient	.288**	.081	-.250**
		Sig. (2-tailed)	<.001	.209	<.001
		N	239	239	239
	SR_AttackOther	Correlation Coefficient	.260**	.130*	-.169**
		Sig. (2-tailed)	<.001	.045	.009
		N	239	239	239
	SR_Avoidance	Correlation Coefficient	.362**	.067	-.037
		Sig. (2-tailed)	<.001	.305	.574
		N	239	239	239
	SRAdaptive	Correlation Coefficient	.249**	.020	.207**
		Sig. (2-tailed)	<.001	.762	.001
		N	239	239	239
	SRInternalising	Correlation Coefficient	.299**	.073	-.243**
		Sig. (2-tailed)	<.001	.264	<.001
		N	239	239	239

Correlations

			DEPRESSION	ANXIETY	ANX_DEPP
Spearman's rho	AGE_RANGE	Correlation Coefficient	.229**	.182**	.215**
		Sig. (2-tailed)	<.001	.005	<.001
		N	239	239	239
	SES	Correlation Coefficient	-.080	.026	-.030
		Sig. (2-tailed)	.218	.691	.641
		N	239	239	239
	BCES	Correlation Coefficient	-.367**	-.351**	-.367**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	DEPRESSION	Correlation Coefficient	1.000	.844**	.957**
		Sig. (2-tailed)	.	<.001	<.001
		N	239	239	239
	ANXIETY	Correlation Coefficient	.844**	1.000	.959**
		Sig. (2-tailed)	<.001	.	<.001
		N	239	239	239
	ANX_DEPP	Correlation Coefficient	.957**	.959**	1.000
		Sig. (2-tailed)	<.001	<.001	.
		N	239	239	239
	SRWithdrawal	Correlation Coefficient	.722**	.764**	.772**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SRAttackSelf	Correlation Coefficient	.706**	.762**	.762**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SR_AttackOther	Correlation Coefficient	.611**	.654**	.659**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SR_Avoidance	Correlation Coefficient	.567**	.500**	.551**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SRAdaptive	Correlation Coefficient	.283**	.350**	.328**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SRInternalising	Correlation Coefficient	.731**	.780**	.785**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239

Correlations

			SRWithdrawal	SRAttackSelf	SR_AttackOther
Spearman's rho	AGE_RANGE	Correlation Coefficient	.294**	.288**	.260**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SES	Correlation Coefficient	.048	.081	.130*
		Sig. (2-tailed)	.456	.209	.045
		N	239	239	239
	BCES	Correlation Coefficient	-.213**	-.250**	-.169**
		Sig. (2-tailed)	<.001	<.001	.009
		N	239	239	239
	DEPRESSION	Correlation Coefficient	.722**	.706**	.611**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	ANXIETY	Correlation Coefficient	.764**	.762**	.654**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	ANX_DEPP	Correlation Coefficient	.772**	.762**	.659**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SRWithdrawal	Correlation Coefficient	1.000	.894**	.713**
		Sig. (2-tailed)	.	<.001	<.001
		N	239	239	239
	SRAttackSelf	Correlation Coefficient	.894**	1.000	.737**
		Sig. (2-tailed)	<.001	.	<.001
		N	239	239	239
	SR_AttackOther	Correlation Coefficient	.713**	.737**	1.000
		Sig. (2-tailed)	<.001	<.001	.
		N	239	239	239
	SR_Avoidance	Correlation Coefficient	.723**	.707**	.683**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SRAdaptive	Correlation Coefficient	.507**	.491**	.459**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SRInternalising	Correlation Coefficient	.966**	.976**	.748**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239

Correlations

			SR_Avoidance	SRAdaptive	SRInternalising
Spearman's rho	AGE_RANGE	Correlation Coefficient	.362**	.249**	.299**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SES	Correlation Coefficient	.067	.020	.073
		Sig. (2-tailed)	.305	.762	.264
		N	239	239	239
	BCES	Correlation Coefficient	-.037	.207**	-.243**
		Sig. (2-tailed)	.574	.001	<.001
		N	239	239	239
	DEPRESSION	Correlation Coefficient	.567**	.283**	.731**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	ANXIETY	Correlation Coefficient	.500**	.350**	.780**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	ANX_DEPP	Correlation Coefficient	.551**	.328**	.785**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SRWithdrawal	Correlation Coefficient	.723**	.507**	.966**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SRAttackSelf	Correlation Coefficient	.707**	.491**	.976**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SR_AttackOther	Correlation Coefficient	.683**	.459**	.748**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SR_Avoidance	Correlation Coefficient	1.000	.627**	.732**
		Sig. (2-tailed)	.	<.001	<.001
		N	239	239	239
	SRAdaptive	Correlation Coefficient	.627**	1.000	.508**
		Sig. (2-tailed)	<.001	.	<.001
		N	239	239	239
	SRInternalising	Correlation Coefficient	.732**	.508**	1.000
		Sig. (2-tailed)	<.001	<.001	.
		N	239	239	239

Correlations

			SRComposite	SRExternalising	SOMATIC
Spearman's rho	AGE_RANGE	Correlation Coefficient	.327**	.339**	.230**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SES	Correlation Coefficient	.083	.107	-.013
		Sig. (2-tailed)	.204	.100	.838
		N	239	239	239
	BCES	Correlation Coefficient	-.215**	-.107	-.368**
		Sig. (2-tailed)	<.001	.098	<.001
		N	239	239	239
	DEPRESSION	Correlation Coefficient	.734**	.646**	.811**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	ANXIETY	Correlation Coefficient	.759**	.631**	.785**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	ANX_DEPP	Correlation Coefficient	.774**	.663**	.833**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SRWithdrawal	Correlation Coefficient	.941**	.780**	.694**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SRAttackSelf	Correlation Coefficient	.950**	.790**	.687**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SR_AttackOther	Correlation Coefficient	.841**	.917**	.593**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SR_Avoidance	Correlation Coefficient	.829**	.903**	.521**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SRAdaptive	Correlation Coefficient	.555**	.583**	.278**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239
	SRInternalising	Correlation Coefficient	.974**	.808**	.707**
		Sig. (2-tailed)	<.001	<.001	<.001
		N	239	239	239

Correlations

		AGE_RANGE	SES	BCES
SRComposite	Correlation Coefficient	.327**	.083	-.215**
	Sig. (2-tailed)	<.001	.204	<.001
	N	239	239	239
SRExternalising	Correlation Coefficient	.339**	.107	-.107
	Sig. (2-tailed)	<.001	.100	.098
	N	239	239	239
SOMATIC	Correlation Coefficient	.230**	-.013	-.368**
	Sig. (2-tailed)	<.001	.838	<.001
	N	239	239	239

Correlations

		DEPRESSION	ANXIETY	ANX_DEPP
SRComposite	Correlation Coefficient	.734**	.759**	.774**
	Sig. (2-tailed)	<.001	<.001	<.001
	N	239	239	239
SRExternalising	Correlation Coefficient	.646**	.631**	.663**
	Sig. (2-tailed)	<.001	<.001	<.001
	N	239	239	239
SOMATIC	Correlation Coefficient	.811**	.785**	.833**
	Sig. (2-tailed)	<.001	<.001	<.001
	N	239	239	239

Correlations

		SRWithdrawal	SRAttackSelf	SR_AttackOther
SRComposite	Correlation Coefficient	.941**	.950**	.841**
	Sig. (2-tailed)	<.001	<.001	<.001
	N	239	239	239
SRExternalising	Correlation Coefficient	.780**	.790**	.917**
	Sig. (2-tailed)	<.001	<.001	<.001
	N	239	239	239
SOMATIC	Correlation Coefficient	.694**	.687**	.593**
	Sig. (2-tailed)	<.001	<.001	<.001
	N	239	239	239

Correlations

		SR_Avoidance	SRAdaptive	SRInternalising
SRComposite	Correlation Coefficient	.829**	.555**	.974**
	Sig. (2-tailed)	<.001	<.001	<.001
	N	239	239	239
SRExternalising	Correlation Coefficient	.903**	.583**	.808**
	Sig. (2-tailed)	<.001	<.001	<.001
	N	239	239	239
SOMATIC	Correlation Coefficient	.521**	.278**	.707**
	Sig. (2-tailed)	<.001	<.001	<.001
	N	239	239	239

Correlations

		SRComposite	SRExternalising	SOMATIC
SRComposite	Correlation Coefficient	1.000	.914**	.698**
	Sig. (2-tailed)	.	<.001	<.001
	N	239	239	239
SRExternalising	Correlation Coefficient	.914**	1.000	.605**
	Sig. (2-tailed)	<.001	.	<.001
	N	239	239	239
SOMATIC	Correlation Coefficient	.698**	.605**	1.000
	Sig. (2-tailed)	<.001	<.001	.
	N	239	239	239

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Appendix N: Parametric Correlational Analysis (SPSS Output)

Correlations

Descriptive Statistics

	Mean	Std. Deviation	N
AGE_RANGE	15.03	1.378	239
SES	4.04	1.234	239
BCES	8.19	1.578	239
DEPRESSION	8.02	6.111	239
ANXIETY	6.65	5.800	239
ANX_DEPP	14.67	11.487	239
SRWithdrawal	30.00	10.663	239
SRAttackSelf	31.70	12.083	239
SR_AttackOther	22.45	7.294	239
SR_Avoidance	29.78	8.151	239
SRAdaptive	28.84	7.488	239
SRInternalising	61.70	22.091	239
SRComposite	113.92	34.421	239
SRExternalising	52.22	14.114	239
SOMATIC	9.29	7.470	239

Correlations

		AGE_RANGE	SES	BCES	DEPRESSION	ANXIETY
AGE_RANGE	Pearson Correlation	1	-.090	.012	.198**	.176**
	Sig. (2-tailed)		.163	.859	.002	.006
	N	239	239	239	239	239
SES	Pearson Correlation	-.090	1	-.051	-.070	.005
	Sig. (2-tailed)	.163		.437	.283	.934
	N	239	239	239	239	239
BCES	Pearson Correlation	.012	-.051	1	-.414**	-.381**
	Sig. (2-tailed)	.859	.437		<.001	<.001
	N	239	239	239	239	239
DEPRESSION	Pearson Correlation	.198**	-.070	-.414**	1	.860**
	Sig. (2-tailed)	.002	.283	<.001		<.001
	N	239	239	239	239	239
ANXIETY	Pearson Correlation	.176**	.005	-.381**	.860**	1
	Sig. (2-tailed)	.006	.934	<.001	<.001	
	N	239	239	239	239	239
ANX_DEPP	Pearson Correlation	.194**	-.034	-.413**	.966**	.962**
	Sig. (2-tailed)	.003	.597	<.001	<.001	<.001
	N	239	239	239	239	239

Correlations

		ANX_DEPP	SRWithdrawal	SRAttackSelf	SR_AttackOther
AGE_RANGE	Pearson Correlation	.194**	.291**	.274**	.234**
	Sig. (2-tailed)	.003	<.001	<.001	<.001
	N	239	239	239	239
SES	Pearson Correlation	-.034	.035	.066	.102
	Sig. (2-tailed)	.597	.595	.307	.117
	N	239	239	239	239
BCES	Pearson Correlation	-.413**	-.233**	-.267**	-.199**
	Sig. (2-tailed)	<.001	<.001	<.001	.002
	N	239	239	239	239
DEPRESSION	Pearson Correlation	.966**	.708**	.704**	.566**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001
	N	239	239	239	239
ANXIETY	Pearson Correlation	.962**	.742**	.750**	.615**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001
	N	239	239	239	239
ANX_DEPP	Pearson Correlation	1	.752**	.753**	.612**
	Sig. (2-tailed)		<.001	<.001	<.001
	N	239	239	239	239

Correlations

		SR_Avoidance	SRAdaptive	SRInternalising	SRComposite
AGE_RANGE	Pearson Correlation	.313**	.226**	.290**	.310**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001
	N	239	239	239	239
SES	Pearson Correlation	.079	.064	.053	.074
	Sig. (2-tailed)	.223	.324	.414	.252
	N	239	239	239	239
BCES	Pearson Correlation	-.070	.133*	-.259**	-.225**
	Sig. (2-tailed)	.283	.040	<.001	<.001
	N	239	239	239	239
DEPRESSION	Pearson Correlation	.538**	.297**	.727**	.714**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001
	N	239	239	239	239
ANXIETY	Pearson Correlation	.484**	.332**	.769**	.738**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001
	N	239	239	239	239
ANX_DEPP	Pearson Correlation	.530**	.325**	.775**	.753**
	Sig. (2-tailed)	<.001	<.001	<.001	<.001
	N	239	239	239	239

Correlations

		SRExternalising	SOMATIC
AGE_RANGE	Pearson Correlation	.302**	.211**
	Sig. (2-tailed)	<.001	.001
	N	239	239
SES	Pearson Correlation	.098	-.018
	Sig. (2-tailed)	.130	.785
	N	239	239
BCES	Pearson Correlation	-.143*	-.400**
	Sig. (2-tailed)	.027	<.001
	N	239	239
DEPRESSION	Pearson Correlation	.603**	.818**
	Sig. (2-tailed)	<.001	<.001
	N	239	239
ANXIETY	Pearson Correlation	.597**	.770**
	Sig. (2-tailed)	<.001	<.001
	N	239	239
ANX_DEPP	Pearson Correlation	.623**	.824**
	Sig. (2-tailed)	<.001	<.001
	N	239	239

Appendix O: Hierarchical Regression Outputs (SPSS Output)

Internalising symptomology

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
ANX_DEPP	14.67	11.487	239
AGE_RANGE	15.03	1.378	239
ETH_BLACK	.13	.337	239
ETH_ASIAN	.19	.392	239
ETH_MIXED	.05	.227	239
ETH_OTHERPNS	.10	.296	239
MALE_DUMMY	.41	.494	239
NONBINOTHER_DUMMY	.05	.219	239
SES	4.04	1.234	239
BCES	8.19	1.578	239
SRInternalising	61.70	22.091	239
SR_AttackOther	22.45	7.294	239
SR_Avoidance	29.78	8.151	239
SRAdaptive	28.84	7.488	239

Correlations

		ANX_DEPP	AGE_RANGE	ETH_BLACK	ETH_ASIAN
Pearson Correlation	ANX_DEPP	1.000	.194	-.024	.065
	AGE_RANGE	.194	1.000	-.091	.128
	ETH_BLACK	-.024	-.091	1.000	-.186
	ETH_ASIAN	.065	.128	-.186	1.000
	ETH_MIXED	.071	.008	-.093	-.116
	ETH_OTHERPNS	-.041	.013	-.126	-.157
	MALE_DUMMY	-.345	-.255	.029	.073
	NONBINOTHER_DUMMY	.189	.120	.082	-.062
	SES	-.034	-.090	-.316	.057
	BCES	-.413	.012	.064	.003
	SRInternalising	.775	.290	-.037	-.004
	SR_AttackOther	.612	.234	-.115	-.090
	SR_Avoidance	.530	.313	-.037	-.067
	SRAdaptive	.325	.226	-.028	-.002
Sig. (1-tailed)	ANX_DEPP	.	.001	.359	.157
	AGE_RANGE	.001	.	.081	.024
	ETH_BLACK	.359	.081	.	.002
	ETH_ASIAN	.157	.024	.002	.
	ETH_MIXED	.136	.454	.077	.037
	ETH_OTHERPNS	.266	.423	.026	.008

Page 1

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	SES, NONBINOTHER_DUMMY, ETH_MIXED, ETH_OTHERPNS, AGE_RANGE, ETH_ASIAN, MALE_DUMMY, ETH_BLACK[b]	.	Enter
2	BCES[b]	.	Enter
3	SRAdaptive, SR_AttackOther, SR_Avoidance, SRInternalising[b]	.	Enter

a. Dependent Variable: ANX_DEPP

b. All requested variables entered.

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.400[a]	.160	.131	10.709	.160	5.479	8
2	.556[b]	.309	.281	9.737	.149	49.206	1
3	.824[c]	.680	.661	6.687	.371	65.160	4

Model Summary[d]

Model	Change Statistics	
	df2	Sig. F Change
1	230	<.001
2	229	<.001
3	225	<.001

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5027.506	8	628.438	5.479	<.001[b]
	Residual	26378.868	230	114.691		
	Total	31406.375	238			
2	Regression	9693.085	9	1077.009	11.359	<.001[c]
	Residual	21713.290	229	94.818		
	Total	31406.375	238			
3	Regression	21346.436	13	1642.034	36.726	<.001[d]
	Residual	10059.938	225	44.711		
	Total	31406.375	238			

a. Dependent Variable: ANX_DEPP

b. Predictors: (Constant), SES, NONBINOTHER_DUMMY, ETH_MIXED, ETH_OTHERPNS, AGE_RANGE, ETH_ASIAN, MALE_DUMMY, ETH_BLACK

c. Predictors: (Constant), SES, NONBINOTHER_DUMMY, ETH_MIXED, ETH_OTHERPNS, AGE_RANGE, ETH_ASIAN, MALE_DUMMY, ETH_BLACK, BCES

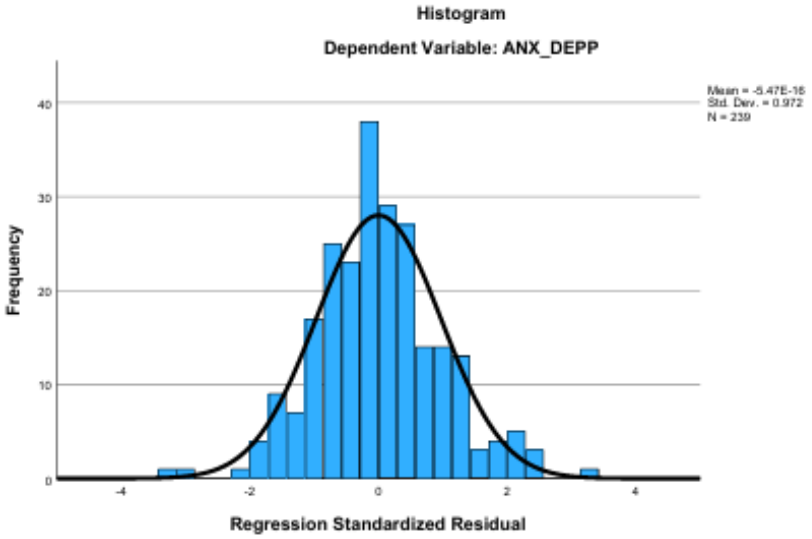
d. Predictors: (Constant), SES, NONBINOTHER_DUMMY, ETH_MIXED, ETH_OTHERPNS, AGE_RANGE, ETH_ASIAN, MALE_DUMMY, ETH_BLACK, BCES, SRAdaptive, SR_AttackOther, SR_Avoidance, SRInternalising

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	8.565	8.973		.955	.341
	AGE_RANGE	.692	.536	.083	1.291	.198
	ETH_BLACK	-.566	2.295	-.017	-.247	.805
	ETH_ASIAN	2.576	1.884	.088	1.367	.173
	ETH_MIXED	3.618	3.120	.072	1.159	.247
	ETH_OTHERPNS	-1.331	2.460	-.034	-.541	.589
	MALE_DUMMY	-7.146	1.487	-.307	-4.806	<.001
	NONBINOTHER_DUMMY	6.528	3.265	.124	1.999	.047
	SES	-.531	.608	-.057	-.874	.383
2	(Constant)	30.175	8.721		3.460	<.001
	AGE_RANGE	.837	.488	.100	1.715	.088
	ETH_BLACK	.475	2.092	.014	.227	.821
	ETH_ASIAN	2.571	1.713	.088	1.501	.135
	ETH_MIXED	3.317	2.838	.066	1.169	.244
	ETH_OTHERPNS	-1.165	2.237	-.030	-.521	.603
	MALE_DUMMY	-7.013	1.352	-.301	-5.187	<.001
	NONBINOTHER_DUMMY	2.500	3.024	.048	.827	.409
	SES	-.597	.553	-.064	-1.081	.281
	BCES	-2.868	.409	-.394	-7.015	<.001
3	(Constant)	13.827	6.109		2.263	.025
	AGE_RANGE	-.402	.348	-.048	-1.153	.250
	ETH_BLACK	.301	1.447	.009	.208	.835
	ETH_ASIAN	2.870	1.193	.098	2.405	.017
	ETH_MIXED	-.433	1.972	-.009	-.220	.826
	ETH_OTHERPNS	-.483	1.543	-.012	-.313	.755
	MALE_DUMMY	-1.477	.995	-.063	-1.484	.139
	NONBINOTHER_DUMMY	1.777	2.081	.034	.854	.394
	SES	-.939	.382	-.101	-2.458	.015
	BCES	-1.515	.308	-.208	-4.920	<.001
	SRInternalising	.335	.035	.644	9.461	<.001
	SR_AttackOther	.260	.091	.165	2.845	.005
	SR_Avoidance	-.062	.095	-.044	-.649	.517
	SRAdaptive	-.054	.081	-.035	-.668	.505

Coefficients[a]

Model		95.0% Confidence Interval for B		Correlations		
		Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	-9.114	26.244			
	AGE_RANGE	-.364	1.748	.194	.085	.078
	ETH_BLACK	-5.089	3.957	-.024	-.016	-.015
	ETH_ASIAN	-1.137	6.289	.065	.090	.083
	ETH_MIXED	-2.530	9.766	.071	.076	.070
	ETH_OTHERPNS	-6.178	3.516	-.041	-.036	-.033
	MALE_DUMMY	-10.076	-4.217	-.345	-.302	-.290
	NONBINOTHER_DUMMY	.095	12.962	.189	.131	.121
	SES	-1.729	.666	-.034	-.058	-.053
2	(Constant)	12.992	47.358			
	AGE_RANGE	-.124	1.797	.194	.113	.094
	ETH_BLACK	-3.648	4.598	-.024	.015	.012
	ETH_ASIAN	-.805	5.947	.065	.099	.082
	ETH_MIXED	-2.274	8.908	.071	.077	.064
	ETH_OTHERPNS	-5.572	3.242	-.041	-.034	-.029
	MALE_DUMMY	-9.678	-4.349	-.345	-.324	-.285
	NONBINOTHER_DUMMY	-3.458	8.459	.189	.055	.045
	SES	-1.686	.492	-.034	-.071	-.059
	BCES	-3.674	-2.063	-.413	-.421	-.385
3	(Constant)	1.789	25.865			
	AGE_RANGE	-1.088	.285	.194	-.077	-.044
	ETH_BLACK	-2.551	3.153	-.024	.014	.008
	ETH_ASIAN	.519	5.221	.065	.158	.091
	ETH_MIXED	-4.320	3.453	.071	-.015	-.008
	ETH_OTHERPNS	-3.523	2.558	-.041	-.021	-.012
	MALE_DUMMY	-3.439	.484	-.345	-.098	-.056
	NONBINOTHER_DUMMY	-2.325	5.879	.189	.057	.032
	SES	-1.692	-.186	-.034	-.162	-.093
	BCES	-2.121	-.908	-.413	-.312	-.186
	SRInternalising	.265	.405	.775	.533	.357
	SR_AttackOther	.080	.440	.612	.186	.107
	SR_Avoidance	-.250	.126	.530	-.043	-.024
	SRAdaptive	-.213	.105	.325	-.044	-.025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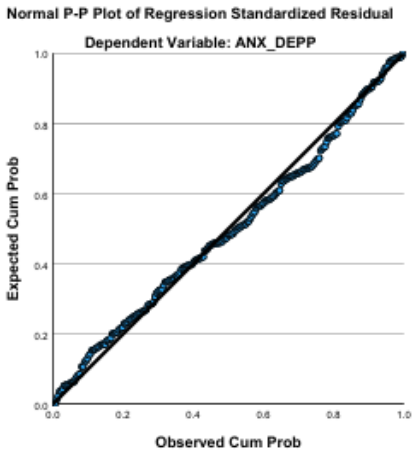
Regression Standardized Residual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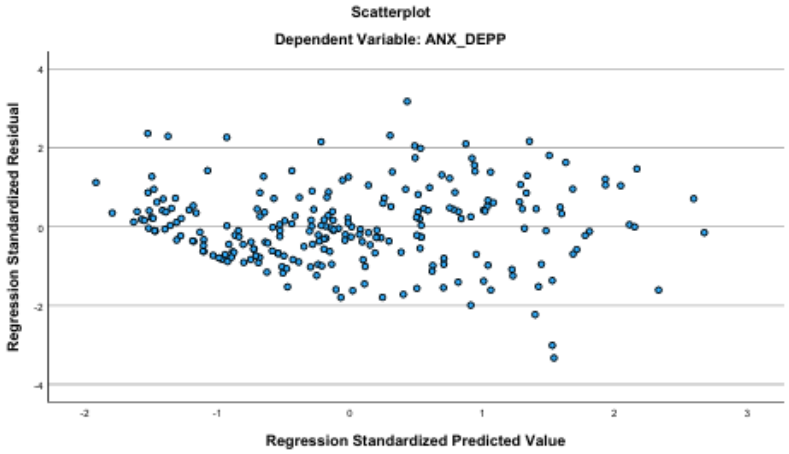
Dependent Variable: ANX_DEPP
Expected Cum Prob
Observed Cum Prob


Scatterplot
Dependent Variable: ANX_DEPP
Regression Standardized Residual
Regression Standardized Predicted Value

Somatic Symptoms

Regression

Descriptive Statistics

	Mean	Std. Deviation	N
SOMATIC	9.29	7.470	239
AGE_RANGE	15.03	1.378	239
ETH_BLACK	.13	.337	239
ETH_ASIAN	.19	.392	239
ETH_MIXED	.05	.227	239
ETH_OTHERPNS	.10	.296	239
MALE_DUMMY	.41	.494	239
NONBINOTHER_DUMMY	.05	.219	239
SES	4.04	1.234	239
BCES	8.19	1.578	239
SRInternalising	61.70	22.091	239
SR_AttackOther	22.45	7.294	239
SR_Avoidance	29.78	8.151	239
SRAdaptive	28.84	7.488	239

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	SES, NONBINOTHER_DUMMY, ETH_MIXED, ETH_OTHERPNS, AGE_RANGE, ETH_ASIAN, MALE_DUMMY, ETH_BLACK[b]	.	Enter
2	BCES[b]	.	Enter
3	SRAdaptive, SR_AttackOther, SR_Avoidance, SRInternalising[b]	.	Enter

a. Dependent Variable: SOMATIC

b. All requested variables entered.

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.398[a]	.158	.129	6.972	.158	5.401	8
2	.546[b]	.298	.270	6.382	.139	45.470	1
3	.736[c]	.541	.514	5.205	.243	29.826	4

Model Summary[d]

Model	Change Statistics	
	df2	Sig. F Change
1	230	<.001
2	229	<.001
3	225	<.001

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2100.479	8	262.560	5.401	<.001[b]
	Residual	11180.021	230	48.609		
	Total	13280.500	238			
2	Regression	3952.616	9	439.180	10.782	<.001[c]
	Residual	9327.884	229	40.733		
	Total	13280.500	238			
3	Regression	7184.808	13	552.678	20.400	<.001[d]
	Residual	6095.691	225	27.092		
	Total	13280.500	238			

a. Dependent Variable: SOMATIC

b. Predictors: (Constant), SES, NONBINOTHER_DUMMY, ETH_MIXED, ETH_OTHERPNS, AGE_RANGE, ETH_ASIAN, MALE_DUMMY, ETH_BLACK

c. Predictors: (Constant), SES, NONBINOTHER_DUMMY, ETH_MIXED, ETH_OTHERPNS, AGE_RANGE, ETH_ASIAN, MALE_DUMMY, ETH_BLACK, BCES

d. Predictors: (Constant), SES, NONBINOTHER_DUMMY, ETH_MIXED, ETH_OTHERPNS, AGE_RANGE, ETH_ASIAN, MALE_DUMMY, ETH_BLACK, BCES, SRAdaptive, SR_AttackOther, SR_Avoidance, SRInternalising

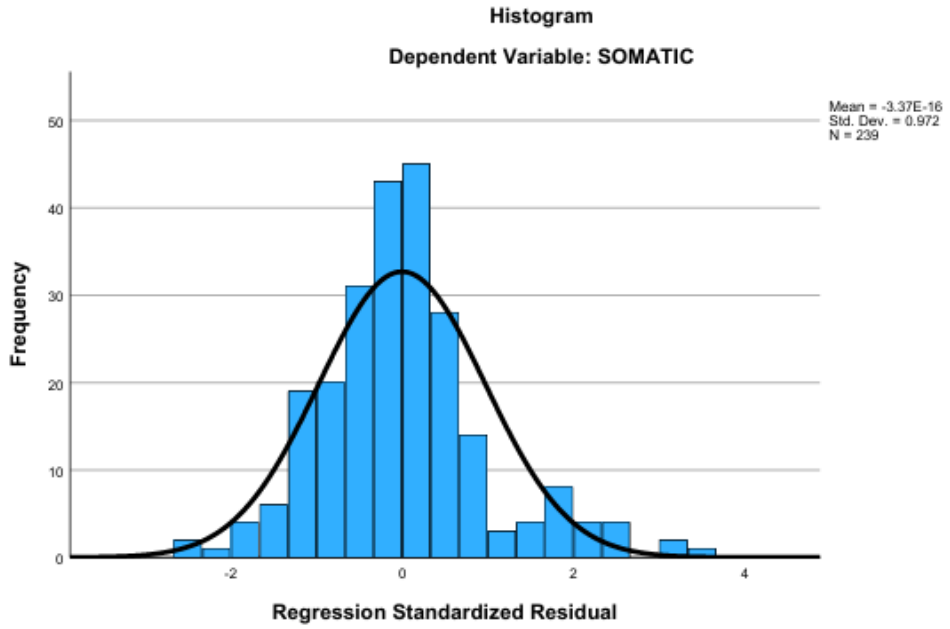
Coefficients[a]

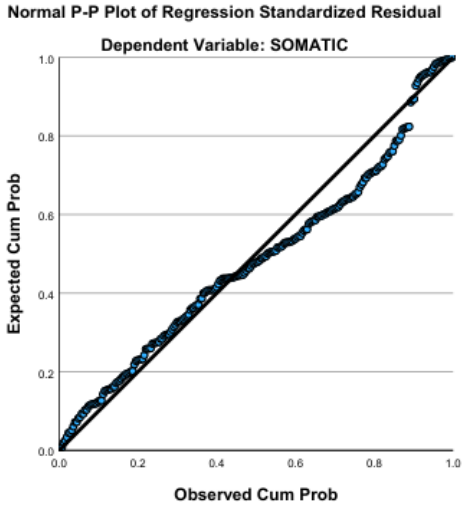
Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	4.432	5.841		.759	.449
	AGE_RANGE	.548	.349	.101	1.571	.118
	ETH_BLACK	-2.002	1.494	-.090	-1.340	.182
	ETH_ASIAN	.897	1.227	.047	.731	.466
	ETH_MIXED	.108	2.031	.003	.053	.957
	ETH_OTHERPNS	-1.334	1.601	-.053	-.833	.406
	MALE_DUMMY	-4.646	.968	-.307	-4.799	<.001
	NONBINOTHER_DUMMY	3.483	2.126	.102	1.638	.103
	SES	-.352	.396	-.058	-.889	.375
2	(Constant)	18.048	5.716		3.158	.002
	AGE_RANGE	.639	.320	.118	2.000	.047
	ETH_BLACK	-1.346	1.371	-.061	-.982	.327
	ETH_ASIAN	.894	1.123	.047	.796	.427
	ETH_MIXED	-.081	1.860	-.002	-.044	.965
	ETH_OTHERPNS	-1.229	1.466	-.049	-.839	.403
	MALE_DUMMY	-4.562	.886	-.301	-5.148	<.001
	NONBINOTHER_DUMMY	.945	1.982	.028	.477	.634
	SES	-.393	.362	-.065	-1.086	.279
	BCES	-1.807	.268	-.382	-6.743	<.001
3	(Constant)	9.913	4.755		2.085	.038
	AGE_RANGE	-.063	.271	-.012	-.231	.817
	ETH_BLACK	-1.530	1.127	-.069	-1.358	.176
	ETH_ASIAN	1.084	.929	.057	1.167	.244
	ETH_MIXED	-2.040	1.535	-.062	-1.328	.185
	ETH_OTHERPNS	-.968	1.201	-.038	-.806	.421
	MALE_DUMMY	-1.631	.775	-.108	-2.105	.036
	NONBINOTHER_DUMMY	.553	1.620	.016	.341	.733
	SES	-.603	.297	-.100	-2.027	.044
	BCES	-1.171	.240	-.248	-4.887	<.001
	SRInternalising	.162	.028	.480	5.889	<.001
	SR_AttackOther	.094	.071	.092	1.326	.186
	SR_Avoidance	.042	.074	.046	.567	.571
	SRAdaptive	-.006	.063	-.007	-.103	.918

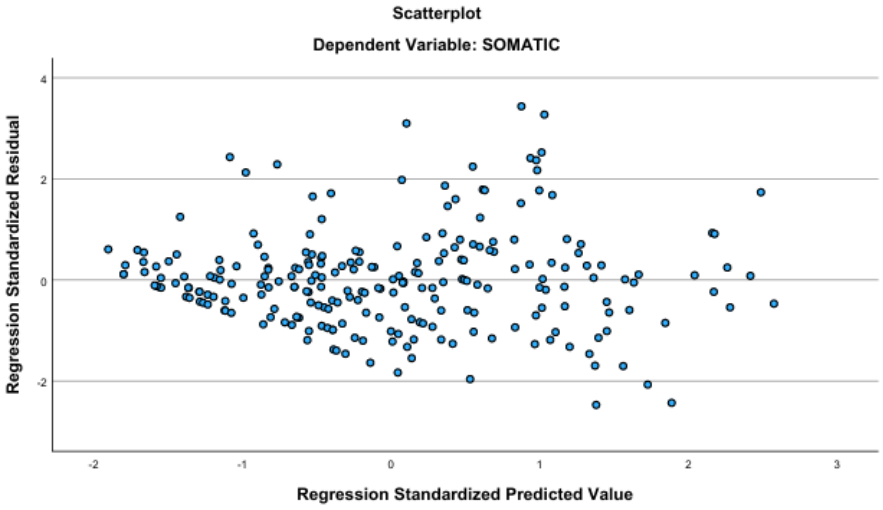
Coefficients[a]

Model		95.0% Confidence Interval for B		Correlations		
		Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	-7.077	15.942			
	AGE_RANGE	-.139	1.235	.211	.103	.095
	ETH_BLACK	-4.946	.942	-.084	-.088	-.081
	ETH_ASIAN	-1.520	3.314	.053	.048	.044
	ETH_MIXED	-3.894	4.111	.015	.004	.003
	ETH_OTHERPNS	-4.489	1.821	-.038	-.055	-.050
	MALE_DUMMY	-6.553	-2.738	-.349	-.302	-.290
	NONBINOTHER_DUMMY	-.705	7.671	.163	.107	.099
	SES	-1.131	.428	-.018	-.059	-.054
2	(Constant)	6.785	29.310			
	AGE_RANGE	.009	1.269	.211	.131	.111
	ETH_BLACK	-4.048	1.356	-.084	-.065	-.054
	ETH_ASIAN	-1.319	3.107	.053	.053	.044
	ETH_MIXED	-3.746	3.583	.015	-.003	-.002
	ETH_OTHERPNS	-4.118	1.659	-.038	-.055	-.046
	MALE_DUMMY	-6.308	-2.816	-.349	-.322	-.285
	NONBINOTHER_DUMMY	-2.960	4.850	.163	.031	.026
	SES	-1.107	.320	-.018	-.072	-.060
	BCES	-2.335	-1.279	-.400	-.407	-.373
3	(Constant)	.543	19.284			
	AGE_RANGE	-.597	.472	.211	-.015	-.010
	ETH_BLACK	-3.750	.690	-.084	-.090	-.061
	ETH_ASIAN	-.746	2.914	.053	.078	.053
	ETH_MIXED	-5.065	.986	.015	-.088	-.060
	ETH_OTHERPNS	-3.335	1.399	-.038	-.054	-.036
	MALE_DUMMY	-3.158	-.105	-.349	-.139	-.095
	NONBINOTHER_DUMMY	-2.640	3.746	.163	.023	.015
	SES	-1.189	-.017	-.018	-.134	-.092
	BCES	-1.644	-.699	-.400	-.310	-.221
	SRInternalising	.108	.217	.675	.365	.266
	SR_AttackOther	-.046	.235	.528	.088	.060
	SR_Avoidance	-.104	.189	.495	.038	.026
	SRAdaptive	-.131	.118	.308	-.007	-.005

Charts


Histogram
Dependent Variable: SOMATIC
Mean = -3.37E-16
Std. Dev. = 0.972
N = 239
Frequency
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: SOMATIC
Expected Cum Prob
Observed Cum Prob


Scatterplot
Dependent Variable: SOMATIC
Regression Standardized Residual
Regression Standardized Predicted Value

Appendix P: Sensitivity Analysis: Regression Models Split by Diagnoses (SPSS Output)

Regression

DIAGNOSIS = No

Descriptive Statistics[a]

	Mean	Std. Deviation	N
ANX_DEPP	13.19	10.641	175
AGE_RANGE	15.05	1.378	175
ETH_BLACK	.13	.339	175
ETH_ASIAN	.22	.413	175
ETH_MIXED	.05	.222	175
ETH_OTHERPNS	.10	.305	175
MALE_DUMMY	.42	.495	175
NONBINOTHER_DUMMY	.03	.182	175
SES	4.00	1.224	175
BCES	8.26	1.511	175
SRInternalising	59.80	22.609	175
SR_AttackOther	21.88	7.705	175
SR_Avoidance	29.29	8.674	175
SRAdaptive	28.18	8.016	175

a. DIAGNOSIS = No

Model Summary[a,e]

					Change Statistics		
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1
1	.409[b]	.167	.127	9.943	.167	4.157	8
2	.551[c]	.304	.266	9.119	.137	32.387	1
3	.809[d]	.655	.627	6.499	.351	40.964	4

Model Summary[a,e]

	Change Statistics	
Model	df2	Sig. F Change
1	166	<.001
2	165	<.001
3	161	<.001

ANOVA[a,b]

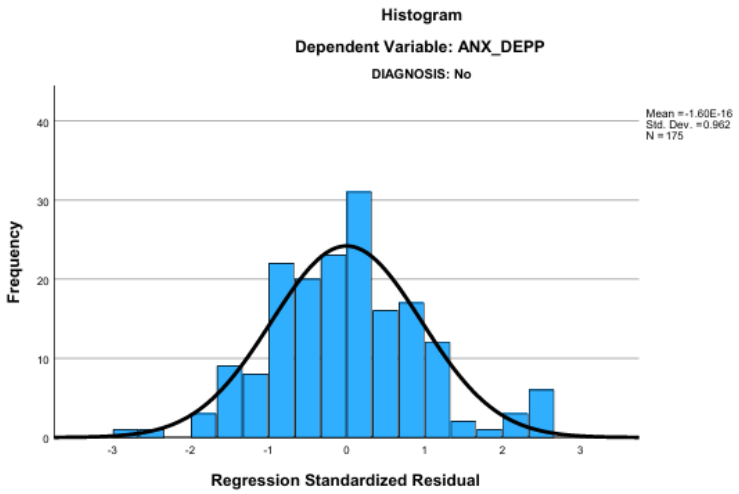
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3287.794	8	410.974	4.157	<.001[c]
	Residual	16412.647	166	98.871		
	Total	19700.441	174			
2	Regression	5980.779	9	664.531	7.992	<.001[d]
	Residual	13719.662	165	83.149		
	Total	19700.441	174			
3	Regression	12900.891	13	992.376	23.498	<.001[e]
	Residual	6799.550	161	42.233		
	Total	19700.441	174			

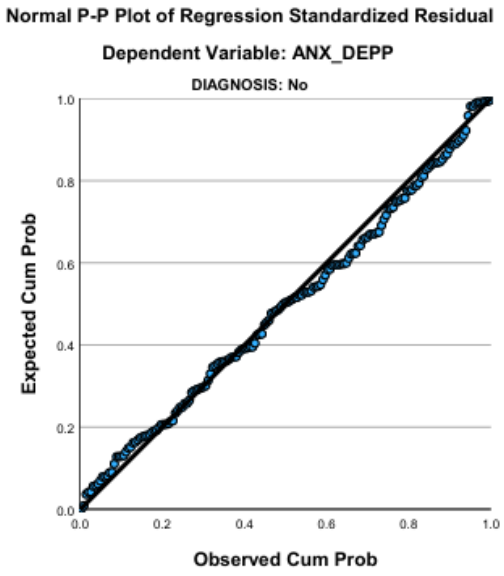
Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	10.208	9.744		1.048	.296
	AGE_RANGE	.448	.582	.058	.770	.443
	ETH_BLACK	-2.141	2.524	-.068	-.848	.398
	ETH_ASIAN	4.109	1.975	.160	2.081	.039
	ETH_MIXED	4.206	3.512	.088	1.197	.233
	ETH_OTHERPNS	-1.734	2.617	-.050	-.663	.508
	MALE_DUMMY	-6.852	1.604	-.318	-4.271	<.001
	NONBINOTHER_DUMMY	2.996	4.207	.051	.712	.477
	SES	-.412	.673	-.047	-.612	.542
2	(Constant)	29.484	9.556		3.085	.002
	AGE_RANGE	.716	.536	.093	1.336	.183
	ETH_BLACK	-.851	2.326	-.027	-.366	.715
	ETH_ASIAN	3.648	1.813	.142	2.013	.046
	ETH_MIXED	3.195	3.226	.067	.990	.323
	ETH_OTHERPNS	-1.027	2.403	-.029	-.427	.670
	MALE_DUMMY	-6.561	1.472	-.305	-4.456	<.001
	NONBINOTHER_DUMMY	.139	3.890	.002	.036	.972
	SES	-.727	.620	-.084	-1.173	.242
	BCES	-2.683	.471	-.381	-5.691	<.001
3	(Constant)	19.025	6.886		2.763	.006
	AGE_RANGE	-.600	.400	-.078	-1.499	.136
	ETH_BLACK	.435	1.679	.014	.259	.796
	ETH_ASIAN	3.869	1.315	.150	2.942	.004
	ETH_MIXED	.522	2.319	.011	.225	.822
	ETH_OTHERPNS	.909	1.733	.026	.525	.601
	MALE_DUMMY	-1.310	1.140	-.061	-1.150	.252
	NONBINOTHER_DUMMY	.039	2.795	.001	.014	.989
	SES	-1.078	.444	-.124	-2.429	.016
	BCES	-1.514	.364	-.215	-4.160	<.001
	SRInternalising	.306	.037	.651	8.206	<.001
	SR_AttackOther	.152	.094	.110	1.617	.108
	SR_Avoidance	.022	.099	.018	.224	.823
	SRAdaptive	-.098	.084	-.074	-1.169	.244

Coefficients[a,b]

Model		95.0% Confidence Interval for B		Correlations		
		Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	-9.030	29.447			
	AGE_RANGE	-.701	1.596	.175	.060	.055
	ETH_BLACK	-7.124	2.843	-.108	-.066	-.060
	ETH_ASIAN	.211	8.008	.160	.159	.147
	ETH_MIXED	-2.729	11.140	.108	.093	.085
	ETH_OTHERPNS	-6.901	3.432	-.037	-.051	-.047
	MALE_DUMMY	-10.020	-3.685	-.335	-.315	-.303
	NONBINOTHER_DUMMY	-5.310	11.302	.097	.055	.050
	SES	-1.741	.917	-.015	-.047	-.043
2	(Constant)	10.615	48.353			
	AGE_RANGE	-.342	1.773	.175	.103	.087
	ETH_BLACK	-5.443	3.741	-.108	-.028	-.024
	ETH_ASIAN	.069	7.228	.160	.155	.131
	ETH_MIXED	-3.175	9.564	.108	.077	.064
	ETH_OTHERPNS	-5.771	3.718	-.037	-.033	-.028
	MALE_DUMMY	-9.468	-3.654	-.335	-.328	-.290
	NONBINOTHER_DUMMY	-7.542	7.821	.097	.003	.002
	SES	-1.951	.497	-.015	-.091	-.076
	BCES	-3.614	-1.752	-.393	-.405	-.370
3	(Constant)	5.426	32.624			
	AGE_RANGE	-1.389	.190	.175	-.117	-.069
	ETH_BLACK	-2.882	3.751	-.108	.020	.012
	ETH_ASIAN	1.272	6.466	.160	.226	.136
	ETH_MIXED	-4.057	5.102	.108	.018	.010
	ETH_OTHERPNS	-2.513	4.331	-.037	.041	.024
	MALE_DUMMY	-3.561	.940	-.335	-.090	-.053
	NONBINOTHER_DUMMY	-5.481	5.558	.097	.001	.001
	SES	-1.954	-.202	-.015	-.188	-.112
	BCES	-2.233	-.795	-.393	-.312	-.193
	SRInternalising	.233	.380	.748	.543	.380
	SR_AttackOther	-.034	.338	.551	.126	.075
	SR_Avoidance	-.174	.218	.502	.018	.010
	SRAdaptive	-.263	.068	.244	-.092	-.054

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Dependent Variable: ANX_DEPP
DIAGNOSIS: No
Expected Cum Prob
Observed Cum Prob
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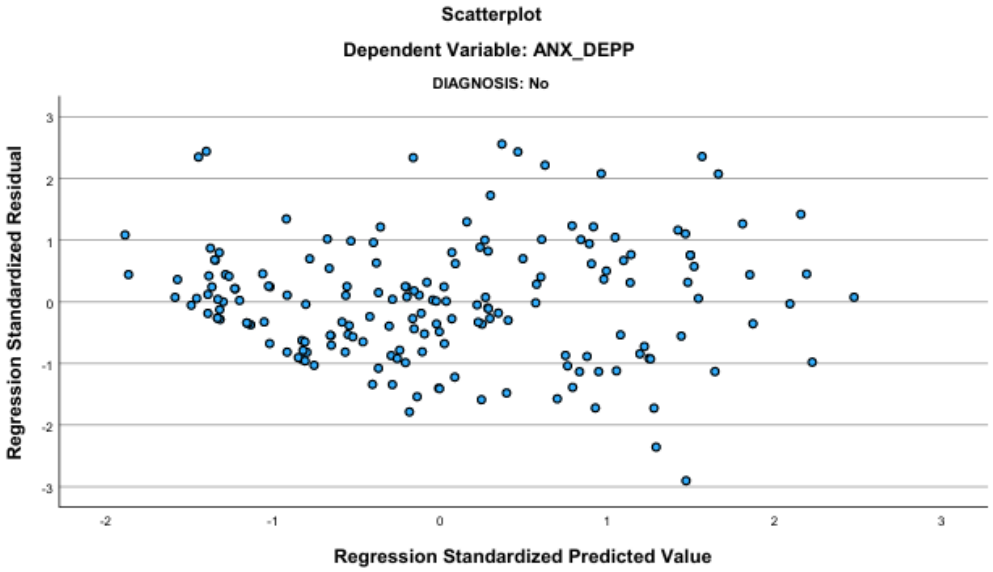
0.2
0.4
0.6
0.8
1.0


Scatterplot
Dependent Variable: ANX_DEPP
DIAGNOSIS: No
Regression Standardized Residual
Regression Standardized Predicted Value
-3
-2
-1
0
1
2
3

Descriptive Statistics[a]

	Mean	Std. Deviation	N
ANX_DEPP	18.69	12.780	64
AGE_RANGE	14.98	1.386	64
ETH_BLACK	.13	.333	64
ETH_ASIAN	.11	.315	64
ETH_MIXED	.06	.244	64
ETH_OTHERPNS	.08	.270	64
MALE_DUMMY	.41	.495	64
NONBINOTHER_DUMMY	.09	.294	64
SES	4.16	1.263	64
BCES	8.02	1.750	64
SRInternalising	66.90	19.857	64
SR_AttackOther	24.00	5.804	64
SR_Avoidance	31.12	6.377	64
SRAdaptive	30.67	5.451	64

a. DIAGNOSIS = Yes

Model Summary[a,e]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.490[b]	.240	.130	11.923	.240	2.172	8
2	.607[c]	.369	.264	10.967	.129	11.009	1
3	.921[d]	.849	.810	5.574	.480	39.753	4

Model Summary[a,e]

Model	Change Statistics	
	df2	Sig. F Change
1	55	.044
2	54	.002
3	50	<.001

ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2470.578	8	308.822	2.172	.044[c]
	Residual	7819.167	55	142.167		
	Total	10289.745	63			
2	Regression	3794.756	9	421.640	3.506	.002[d]
	Residual	6494.989	54	120.278		
	Total	10289.745	63			
3	Regression	8736.023	13	672.002	21.626	<.001[e]
	Residual	1553.722	50	31.074		
	Total	10289.745	63			

a. DIAGNOSIS = Yes

b. Dependent Variable: ANX_DEPP

c. Predictors: (Constant), SES, MALE_DUMMY, ETH_MIXED, ETH_BLACK, ETH_ASIAN, AGE_RANGE, ETH_OTHERPNS, NONBINOTHER_DUMMY

d. Predictors: (Constant), SES, MALE_DUMMY, ETH_MIXED, ETH_BLACK, ETH_ASIAN, AGE_RANGE, ETH_OTHERPNS, NONBINOTHER_DUMMY, BCES

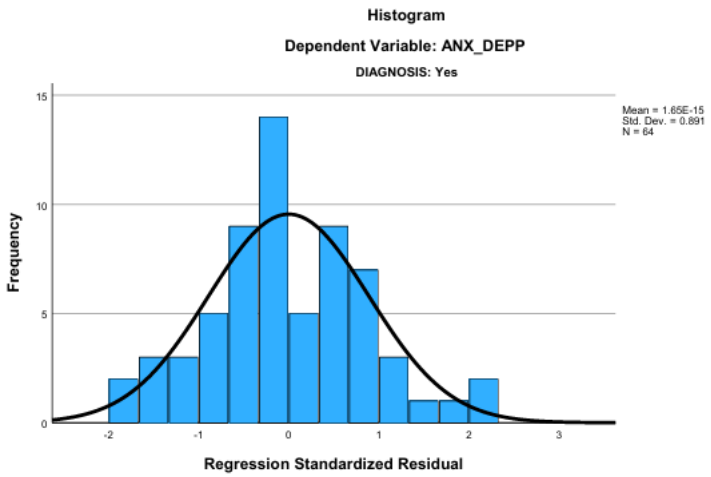
e. Predictors: (Constant), SES, MALE_DUMMY, ETH_MIXED, ETH_BLACK, ETH_ASIAN, AGE_RANGE, ETH_OTHERPNS, NONBINOTHER_DUMMY, BCES, SR_Avoidance, SRAdaptive, SR_AttackOther, SRInternalising

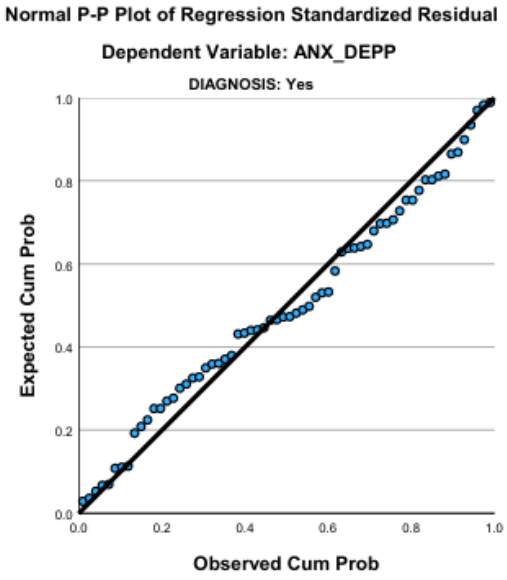
Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	7.538	20.266		.372	.711
	AGE_RANGE	1.185	1.209	.129	.980	.331
	ETH_BLACK	5.166	4.950	.135	1.044	.301
	ETH_ASIAN	.876	5.086	.022	.172	.864
	ETH_MIXED	4.408	6.655	.084	.662	.510
	ETH_OTHERPNS	3.883	6.052	.082	.642	.524
	MALE_DUMMY	-9.088	3.478	-.352	-2.613	.012
	NONBINOTHER_DUMMY	5.692	5.854	.131	.972	.335
	SES	-1.146	1.338	-.113	-.856	.396
2	(Constant)	30.389	19.872		1.529	.132
	AGE_RANGE	1.053	1.113	.114	.947	.348
	ETH_BLACK	4.932	4.553	.129	1.083	.284
	ETH_ASIAN	1.925	4.689	.047	.411	.683
	ETH_MIXED	5.501	6.130	.105	.897	.373
	ETH_OTHERPNS	1.718	5.604	.036	.306	.760
	MALE_DUMMY	-9.346	3.200	-.362	-2.920	.005
	NONBINOTHER_DUMMY	.554	5.603	.013	.099	.922
	SES	-.568	1.243	-.056	-.457	.650
	BCES	-2.828	.852	-.387	-3.318	.002
3	(Constant)	-15.259	11.262		-1.355	.182
	AGE_RANGE	.736	.623	.080	1.181	.243
	ETH_BLACK	-2.108	2.492	-.055	-.846	.402
	ETH_ASIAN	6.846	2.779	.169	2.464	.017
	ETH_MIXED	-1.088	3.204	-.021	-.339	.736
	ETH_OTHERPNS	-3.410	3.143	-.072	-1.085	.283
	MALE_DUMMY	-.326	1.831	-.013	-.178	.859
	NONBINOTHER_DUMMY	-1.197	2.854	-.028	-.420	.677
	SES	-.833	.646	-.082	-1.289	.203
	BCES	-1.072	.550	-.147	-1.949	.057
	SRInternalising	.403	.095	.625	4.242	<.001
	SR_AttackOther	1.248	.278	.567	4.486	<.001
	SR_Avoidance	-.599	.266	-.299	-2.253	.029
	SRAdaptive	-.103	.280	-.044	-.368	.715

Coefficients[a,b]

Model		95.0% Confidence Interval for B		Correlations		
		Lower Bound	Upper Bound	Zero-order	Partial	Part
1	(Constant)	-33.076	48.153			
	AGE_RANGE	-1.237	3.608	.271	.131	.115
	ETH_BLACK	-4.754	15.086	.177	.139	.123
	ETH_ASIAN	-9.316	11.069	-.099	.023	.020
	ETH_MIXED	-8.928	17.744	-.014	.089	.078
	ETH_OTHERPNS	-8.244	16.011	-.026	.086	.075
	MALE_DUMMY	-16.058	-2.117	-.390	-.332	-.307
	NONBINOTHER_DUMMY	-6.040	17.424	.274	.130	.114
	SES	-3.827	1.536	-.122	-.115	-.101
2	(Constant)	-9.453	70.231			
	AGE_RANGE	-1.177	3.284	.271	.128	.102
	ETH_BLACK	-4.197	14.061	.177	.146	.117
	ETH_ASIAN	-7.475	11.325	-.099	.056	.044
	ETH_MIXED	-6.789	17.790	-.014	.121	.097
	ETH_OTHERPNS	-9.519	12.954	-.026	.042	.033
	MALE_DUMMY	-15.763	-2.930	-.390	-.369	-.316
	NONBINOTHER_DUMMY	-10.679	11.787	.274	.013	.011
	SES	-3.060	1.924	-.122	-.062	-.049
	BCES	-4.537	-1.119	-.441	-.412	-.359
3	(Constant)	-37.879	7.362			
	AGE_RANGE	-.516	1.988	.271	.165	.065
	ETH_BLACK	-7.114	2.898	.177	-.119	-.046
	ETH_ASIAN	1.264	12.427	-.099	.329	.135
	ETH_MIXED	-7.524	5.348	-.014	-.048	-.019
	ETH_OTHERPNS	-9.724	2.903	-.026	-.152	-.060
	MALE_DUMMY	-4.004	3.352	-.390	-.025	-.010
	NONBINOTHER_DUMMY	-6.930	4.535	.274	-.059	-.023
	SES	-2.130	.465	-.122	-.179	-.071
	BCES	-2.177	.033	-.441	-.266	-.107
	SRInternalising	.212	.593	.854	.514	.233
	SR_AttackOther	.689	1.806	.813	.536	.247
	SR_Avoidance	-1.133	-.065	.639	-.304	-.124
	SRAdaptive	-.665	.460	.548	-.052	-.020




Normal P-P Plot of Regression Standardized Residual
Dependent Variable: ANX_DEPP
DIAGNOSIS: Yes
Expected Cum Prob
Observed Cum Prob
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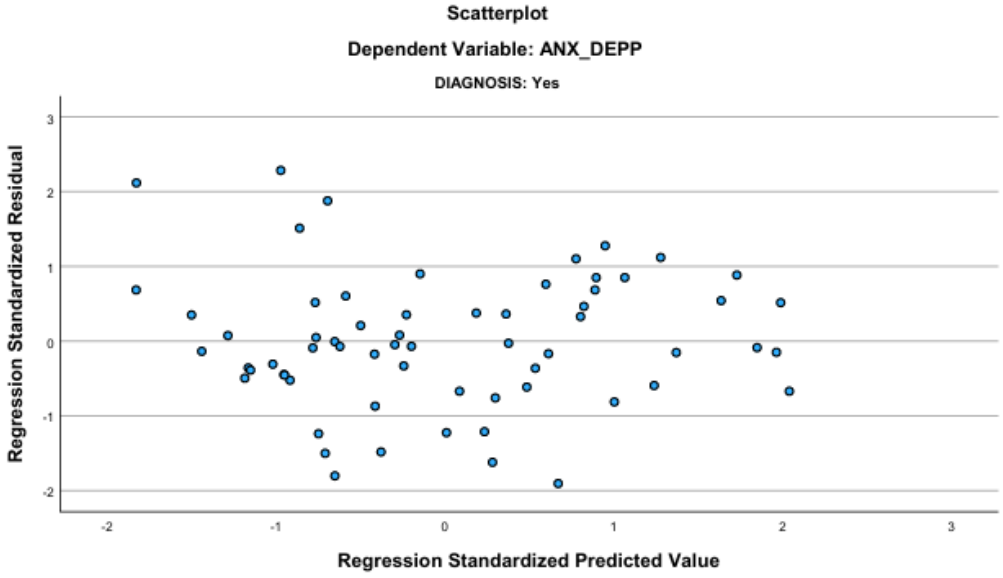
0.2
0.4
0.6
0.8
1.0


Scatterplot
Dependent Variable: ANX_DEPP
DIAGNOSIS: Yes
Regression Standardized Residual
Regression Standardized Predicted Value
-2
-1
0
1
2
3