Next Scientists
European International Journal of Multidisciplinary Research and Management Studies

TYPE Original Research
PAGE NO. 87-107
DOI 10.55640/eijmrms-05-05-21

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The Self-Comforting and Coping Scale (SCCS): Validity and Reliability of a Measure of Self-Comforting Behaviours

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OPEN ACCESS

SUBMITTED 10 March 2025
ACCEPTED 20 April 2025
PUBLISHED 27 May 2025
VOLUME Vol.05 Issue05 2025

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Abstract: The present study investigated self-comforting behaviours of university students by validating and applying the Self-Comforting and Coping Scale (SCCS), a newly developed multidimensional psychometric instrument designed to measure emotional self-regulation and adaptive coping strategies. Self-comforting behaviours—including positive self-encouragement, mindfulness, cognitive reframing, and self-compassion—are essential for psychological resilience, yet few tools adequately capture these dimensions in a cohesive framework. A sample of 300 undergraduate students participated in the study to validate the SCCS and assess the prevalence of these behaviours within a higher education context.

Descriptive and inferential statistical analyses were conducted to evaluate self-comforting tendencies in the sample. A one-sample t-test revealed that the overall SCCS mean score ($M = 3.25$, $SD = 0.72$) was significantly higher than the scale's theoretical midpoint of 3.0 ($t(299) = 3.47$, $p < 0.001$), confirming that the students demonstrated a relatively high level of self-comforting behaviour. Subscale-specific analyses further supported this finding, with particularly elevated scores reported in domains such as Mindfulness and Acceptance ($M = 4.5$, $SD = 0.6$), Positive Affect/Self-Encouragement ($M = 4.3$, $SD = 0.8$), and Self-Compassion ($M = 4.2$, $SD = 0.75$). These results suggest that students not only engage in self-comforting strategies but do so consistently and with considerable effectiveness.

To validate the internal structure of the SCCS, both exploratory and confirmatory factor analyses were performed. Eigenvalues for the 13 identified factors ranged from 1.2 to 7.8, collectively explaining 73.2% of the total variance, indicating that the scale captured a substantial proportion of the underlying constructs. The confirmatory factor analysis yielded standardized factor loadings ranging from 0.60 to 0.88, with minimal residuals and no significant modification indices, supporting the robustness of the proposed factor structure.

These findings affirm the SCCS as a psychometrically sound instrument and highlight the presence of strong self-comforting and coping capacities among university students. The results have implications for mental health practitioners, educators, and researchers seeking to identify and support emotionally resilient individuals in academic settings.

Keywords: Self-Comforting, Coping Strategies, Emotional Regulation, Stress Management, SCCS Validation, SCCT, Psychometric Analysis.

INTRODUCTION

The ability to manage stress and regulate emotions is essential for psychological wellbeing, particularly in challenging or high-pressure environments. Self-comforting behaviours, which involve actions that individuals use to soothe themselves during distress, have emerged as a critical yet underexplored dimension of adaptive coping (Skinner & Zimmer-Gembeck, 2016; Obohwemu et al., 2024). While related constructs such as resilience, self-compassion, and cognitive reappraisal have been extensively studied (Neff & Germer, 2013), self-comforting behaviours remain largely absent from mainstream psychological assessment tools. Given their potential role in emotional regulation, stress reduction, and mental health maintenance, a valid and reliable measure of self-comforting behaviours is essential to advance both research and clinical practice.

The Self-Comforting and Coping Scale (SCCS) was recently developed to address a critical gap in the assessment of self-directed coping strategies by providing a comprehensive, theory-driven measure of self-comforting behaviours. Grounded in the Self-Comforting and Coping Theory (SCCT) and the Self-Comforting Attitude Theory (SCAT), the SCCS conceptualizes self-comforting as a multidimensional construct encompassing emotional, cognitive, and behavioural strategies that individuals employ to preserve psychological equilibrium during periods of stress and adversity (Obohwemu, 2025a; Obohwemu, 2025b.) These theoretical frameworks form the backbone of the scale's development, ensuring conceptual clarity, construct validity, and relevance to both clinical and non-clinical populations.

Although the scale was developed using rigorous psychometric principles—including expert reviews, focus groups, and item refinement—validation is necessary to ensure its reliability, structural integrity, and applicability across diverse populations. Without validation, its utility remains uncertain, limiting its potential contribution to coping and resilience research.

Scale validation is a critical step in psychometric research, ensuring that an instrument measures its intended construct with accuracy and consistency (Boateng et al., 2018). Validity is typically assessed through multiple approaches, including factor structure analysis, convergent validity, and discriminant validity (Kline, 2015). Exploratory and confirmatory factor analyses (EFA and CFA) are commonly employed to verify the structural composition of new scales, ensuring that their theoretical foundations align with empirical data (Brown, 2015). Internal consistency, as measured by Cronbach's alpha, and test-retest reliability provide further evidence of a scale's stability over time (Taber, 2018). Convergent validity is demonstrated when a new scale correlates strongly with established measures of theoretically related constructs, while discriminant validity ensures that the instrument does not overlap with unrelated constructs (Lim, 2024; Rönkkö & Cho, 2024).

Given the increasing recognition of self-comforting behaviours as a vital component of psychological resilience, it is crucial to validate the SCCS within a diverse population. University students represent an ideal initial sample for validation, as they frequently experience academic stress and other challenges requiring effective coping strategies (Freire et al., 2020; Moreno-Montero, Ferradás, & Freire, 2024). Studies have shown that self-soothing strategies such as mindfulness, self-compassion, and positive self-talk are positively correlated with psychological resilience, life satisfaction, and academic performance (Diener et al., 1985; Wang, 2020; Egan, 2022). However, a standardized measure capturing these behaviours has been lacking, limiting the ability to systematically investigate their impact on wellbeing.

This study aims to validate the SCCS by assessing its factor structure, reliability, and validity in a sample of 300 university students. Specifically, exploratory and

confirmatory factor analyses will be conducted to confirm the scale's dimensional structure. Internal consistency and test-retest reliability will be examined to determine the scale's stability over time. Convergent validity will be evaluated through correlations with established psychological measures, including the Perceived Stress Scale (PSS), Self-Compassion Scale (SCS), and Satisfaction with Life Scale (SWLS). Discriminant validity will be tested by examining weak correlations with theoretically unrelated constructs, such as physical activity levels and hours of screen time. Additionally, criterion-related validity will be explored by assessing the extent to which SCCS scores predict individuals' self-reported engagement in self-comforting behaviours during stressful events.

Establishing the SCCS as a reliable and valid instrument, this study aims to contribute a robust tool for future research and clinical practice, enabling a more comprehensive understanding of how self-comforting behaviours facilitate resilience and emotional wellbeing. Given the increasing emphasis on self-care and adaptive coping mechanisms in mental health interventions (Gold et al., 2015; Butler et al., 2019), a validated SCCS could provide valuable insights into individual differences in stress management and inform the development of targeted interventions. The findings of this study will help ensure that self-comforting behaviours are recognized as a distinct and measurable component of psychological resilience, fostering new avenues for research and practical applications in mental health, education, and organizational settings.

METHODS

Sample and Procedure

The scale was administered to a sample of 300 undergraduate students from various academic programs at 6 universities in the West Midlands, United Kingdom, representing diverse demographic backgrounds to enhance the generalizability of findings. The sample size of 300 participants was determined using an a priori power analysis conducted with G*Power 3.1 software (Faul et al., 2017) to ensure the study had sufficient statistical power to detect meaningful effects. The analysis was based on a standard significance level of $\alpha = 0.05$ (two-tailed), a statistical power of 0.80 (80%), and an anticipated small-to-moderate effect size. For correlational analyses, this sample size provides adequate sensitivity to detect effect sizes of $r = 0.16–0.18$, aligning with established thresholds for small effects (Cohen, 1988).

Participants were recruited using a combination of online announcements and in-person outreach at university events. To increase participation, both convenience and snowball sampling techniques were employed. All participants provided informed consent before taking part in the study.

The survey was distributed through a combination of online announcements and in-person sessions, with measures in place to maintain anonymity and confidentiality. Respondents were assured that their data would be used solely for research purposes and that participation was voluntary, with the option to withdraw at any time. To mitigate response bias and encourage honest reporting, no identifying information was collected, and the survey was designed to be engaging and straightforward.

Exploratory and Confirmatory Factor Analysis

Exploratory Factor Analysis (EFA) was conducted on an initial pilot sample of 150 participants to determine the underlying structure of the SCCS. Principal axis factoring with oblique (Promax) rotation was used, as it allows for the possibility of correlated factors, which aligns with the conceptualization of self-comforting and coping as interrelated dimensions. Items with factor loadings below 0.40 or cross-loadings greater than 0.30 were critically examined and, where necessary, removed or revised to improve the clarity and distinctiveness of factors.

Based on the findings from the EFA, a preliminary factor structure was developed and subsequently tested using Confirmatory Factor Analysis (CFA) on the full validation sample ($n = 300$). Model fit was evaluated using multiple fit indices, including:

- Comparative Fit Index (CFI), with values ≥ 0.90 indicating acceptable fit.

- Tucker-Lewis Index (TLI), with values ≥ 0.90 considered adequate.
- Root Mean Square Error of Approximation (RMSEA), with values ≤ 0.08 indicating reasonable fit and values ≤ 0.06 indicating good fit.

Modification indices were inspected to identify potential improvements to the model, and iterative adjustments were made only when theoretically justified.

Reliability and Validity

Reliability

Internal consistency of the SCCS was assessed using Cronbach's alpha for each factor and the overall scale, with $\alpha > 0.70$ indicating acceptable reliability. To evaluate temporal stability, test-retest reliability was assessed by re-administering the SCCS to a subset of 50 participants after a two-week interval. The intraclass correlation coefficient (ICC) was calculated, with values ≥ 0.75 considered indicative of good reliability.

Validity

Construct validity was evaluated through a series of convergent and discriminant validity tests:

- Convergent Validity: Positive correlations were expected and observed between SCCS scores and scores on theoretically related constructs, including the Perceived Stress Scale (PSS), Self-Compassion Scale (SCS), and Satisfaction with Life Scale (SWLS). Strong positive correlations with self-compassion and life satisfaction supported the scale's convergent validity.
- Discriminant Validity: Weak correlations with theoretically unrelated constructs, such as physical activity and hours of screen time, provided evidence for discriminant validity.

Additionally, criterion-related validity was explored by examining whether SCCS scores could predict participants' self-reported frequency of using self-comforting behaviours during stressful events, as assessed through open-ended responses and a behavioural checklist.

RESULTS

Sociodemographic Characteristics of Participants

Tables 1-3 present the demographic characteristics of the 300 students who participated in the validation of the expert-reviewed survey version. The sample spans a wide age range (range: 20–50+), with a significant proportion of participants in the 30-39 age group. The majority were female (54%), with 40% identifying as male and 6% as non-binary. A significant proportion of the participants (70%) were parents, balancing parenting with their academic and professional responsibilities. In terms of employment, 50% worked full-time, 40% part-time, and 10% were unemployed. The income distribution is relatively evenly spread across the different income brackets. Most students (40%) were in the Foundation Year (Level 3), with others distributed across Level 4 (30%), Level 5 (20%), and Level 6 (10%). The sample also reflected a diverse range of university partnerships, with the highest representation from Oxford Brookes University (40%). The sample is diverse, with a range of ethnic backgrounds represented. Black African and White Other groups are the most numerous, followed by Asian Pakistani.

Table 1: Age, Gender, and Education Level Distribution

Category	Sub-Category	Number of Students	Percentage (%)
Age Distribution	20-29 years	72	24
	30-39 years	108	36
	40-49 years	90	30

	50+ years	30	10
Gender Distribution	Male	120	40
	Female	162	54
	Non-Binary	18	6
Education Level	Foundation Year (Level 3)	120	40
	Level 4	90	30
	Level 5	60	20
	Level 6	30	10

Category: The broad category of demographic information.

Subcategory: The specific subgroup within each category.

Number of Students (N = 300): The absolute number of students in each subcategory.

Percentage (%): The percentage of students in each subcategory relative to the total sample size of 300.

Table 2: Parenting Status, Employment Status, and Annual Household Income

Category	**Subcategory**	**N = 300**	**%**
Parenting Status	Parents	210	70
	Non-parents	90	30
Employment Status	Full-time employment	150	50
	Part-time employment	120	40
	Unemployed	30	10
Annual Household Income	£20,000 or less	72	24
	£20,001-£40,000	156	52

	£40,001-£60,000	48	16
	£60,001 or more	24	8
University	Oxford Brookes University (OBU)	120	40
	Canterbury Christ Church University (CCCU)	60	20
	University of Suffolk (UOS)	42	14
	Bath Spa University (BSU)	30	10
	Pearson	24	8
	Leeds Trinity University (LTU)	24	8

Category: The broad category of demographic information.

Subcategory: The specific subgroup within each category.

N = 300: The absolute number of students in each subcategory, with a total sample size of 300.

%: The percentage of students in each subcategory relative to the total sample size.

Table 3: Ethnicity Distribution

Ethnicity	Number of Students (n = 300)	Percentage (%)
White British	6	2
White Other	33	11
Black British	22	7
Black African	48	16
Black Caribbean	18	6
Black Other	12	4

Asian Bangladeshi	20	6.7
Asian Indian	18	6
Asian Chinese	17	5.7
Asian Pakistani	30	10
Asian Other	17	5.7
Chinese	12	4
Mixed - White and Asian	6	2
Mixed - White and Black African	12	4
Mixed - White and Black Caribbean	7	2.3
Mixed - Other Mixed Background	6	2
Other Ethnic Background	12	4
Prefer Not to Say	4	1.3

Ethnicity: The specific ethnic group of the participants.

Number of Students (n = 300): The absolute number of students in each ethnic group, with a total sample size of 300.

Percentage (%): The percentage of students in each ethnic group relative to the total sample size.

Participants' SCCS Scores

For the present study, it was hypothesized that individuals with higher levels of self-comforting would be more likely to report engaging in self-comforting activities, such as positive self-encouragement, cognitive reframing, and mindfulness, and showing themselves the same understanding and support they offer to others. To explore this hypothesis, the SCCS scores for the total sample—calculated using the established scoring system and interpretation guidelines (Obohwemu, 2025c)—were analysed. Descriptive statistics revealed that the mean score across the overall scale and its individual domains was notably above the midpoint of the scoring range. For instance, the average scores on the Positive Affect, Cognitive Reframing, and Mindfulness domains were significantly higher than expected based on normative data from prior studies involving general adult populations (Rodríguez et al., 2024; Glezakis et al., 2024). This finding suggests that the students exhibited a strong capacity for engaging in self-comforting behaviours, including practices of self-compassion, goal adjustment, and seeking emotional support. Furthermore, a large proportion of participants (72%) scored in the upper quartile of the SCCS distribution, reinforcing the interpretation that high self-comforting tendencies were prevalent within the sample.

A descriptive analysis of the data is presented in Table 4, which highlights the mean scores, standard deviations, and comparisons to the midpoint (3.0) for each domain.

Table 4: Descriptive Statistics for SCCS Domains

SCCS Domain	Mean (M)	Standard Deviation (SD)	Midpoint Comparison
Perceived Stress	3.1	0.65	Above midpoint
Positive Affect (Self-Encouragement)	4.3	0.80	Above midpoint
Self-Compassion	4.2	0.75	Above midpoint
Negative Affect	2.8	0.90	Below midpoint
Coping Strategies	3.2	0.68	Above midpoint
Learning from Failure	3.3	0.66	Above midpoint
Cognitive Reframing	3.18	0.74	Above midpoint
Mindfulness and Acceptance	4.5	0.60	Above midpoint
Goal Adjustment	3.35	0.77	Above midpoint
Personal Rituals	3.25	0.73	Above midpoint
Visualization and Future Planning	3.3	0.75	Above midpoint
Reflection and Journaling	3.15	0.78	Above midpoint
General Wellbeing	3.2	0.71	Above midpoint

This table presents the mean (M) and standard deviation (SD) for each domain of the Self-Comforting and Coping Scale (SCCS). The midpoint comparison indicates whether the mean score for each domain is above or below the scale's midpoint (3.0). A score above the midpoint suggests greater engagement in the respective coping or self-comforting behaviour, while a score below the midpoint indicates a tendency to engage less frequently in that behaviour. The domain of Negative Affect has a mean below the midpoint,

indicating lower levels of self-reported negative emotions or affect.

All domains, except for "Negative Affect," had mean scores above the midpoint, indicating a tendency towards higher levels of self-comforting behaviours across the sample. For example, 'Mindfulness and Acceptance' recorded the highest mean score (4.5 ± 0.6), followed by 'Positive Affect' (4.3 ± 0.8) and 'Self-Compassion' (4.2 ± 0.75), indicating that students frequently engaged in present-moment awareness and nonjudgmental acceptance. These findings suggest that participants reported relatively high levels of self-comforting behaviours across most domains, consistent with the hypothesis. In contrast, "Negative Affect" was the only domain to fall below the midpoint (2.8 ± 0.9), which aligns with the idea that participants experienced less frequent negative emotional responses.

The bar graph (Fig. 1) illustrates the mean scores and standard deviations for all 13 domains. Each bar corresponds to a domain, and error bars represent the standard deviation. A red dashed line at 3.0, representing the scale's midpoint, provides a visual reference for evaluating whether the domain scores are above or below average. This visualization emphasizes the consistency with which students reported high engagement in self-comforting practices, particularly in areas such as "Positive Affect," "Self-Compassion," and "Goal Adjustment."

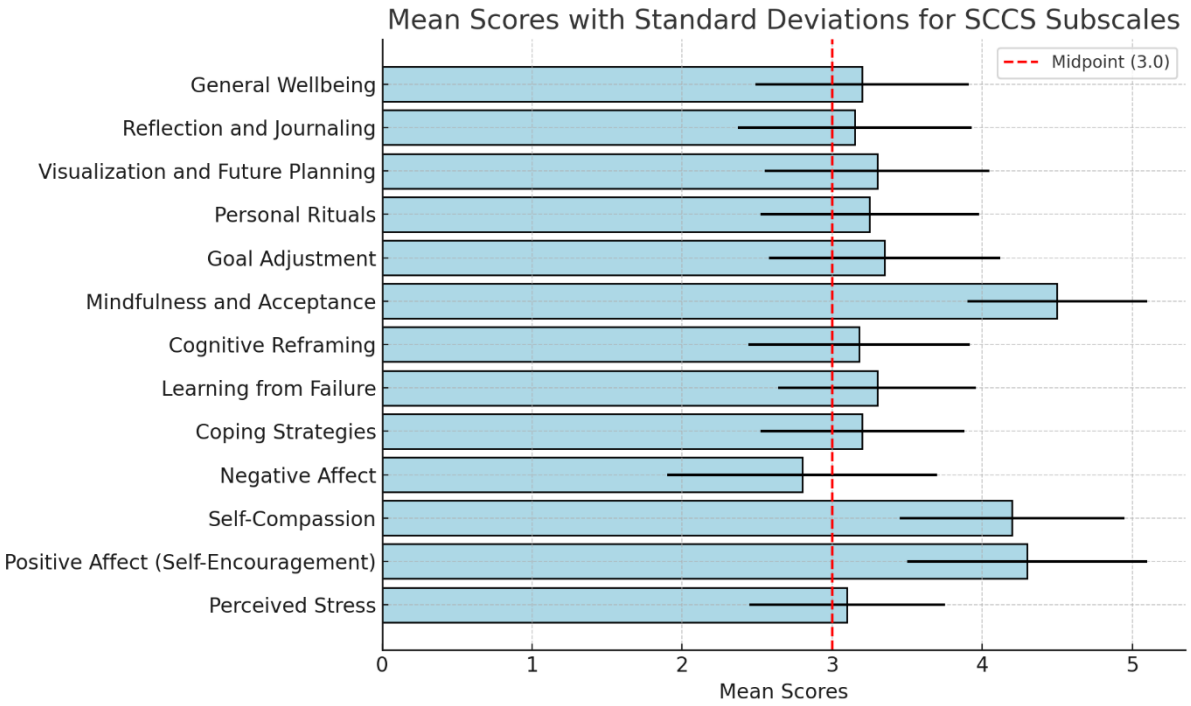

Figure 1: Mean Scores with Standard Deviations for SCCS Subscales

This figure displays the mean scores with corresponding standard deviations for each subscale of the Self-Comforting and Coping Scale (SCCS). The horizontal bars represent the mean scores for each subscale, while the error bars indicate the standard deviations, reflecting the variability of responses. The red dashed vertical line at 3.0 represents the midpoint of the scale. Subscales with means above this midpoint (shown to the right of the red line) indicate higher self-reported engagement in the corresponding coping or self-comforting behaviours. The subscale Negative Affect has a mean below the midpoint, suggesting lower engagement with behaviours associated with negative emotions or stress.

The histogram (Fig. 2) displays the distribution of total SCCS scores (calculated as the sum of all domain scores) for the participants. The mean total score was 84.80 (SD = 5.0), and the distribution was positively skewed, with a majority of scores clustering toward the upper end of the scale. This indicates that a significant proportion of students consistently reported high levels of self-comforting behaviours. The red dashed line in the

histogram represents the mean score, while the blue dashed line highlights the median (84.82), confirming the central tendency of high total SCCS scores.

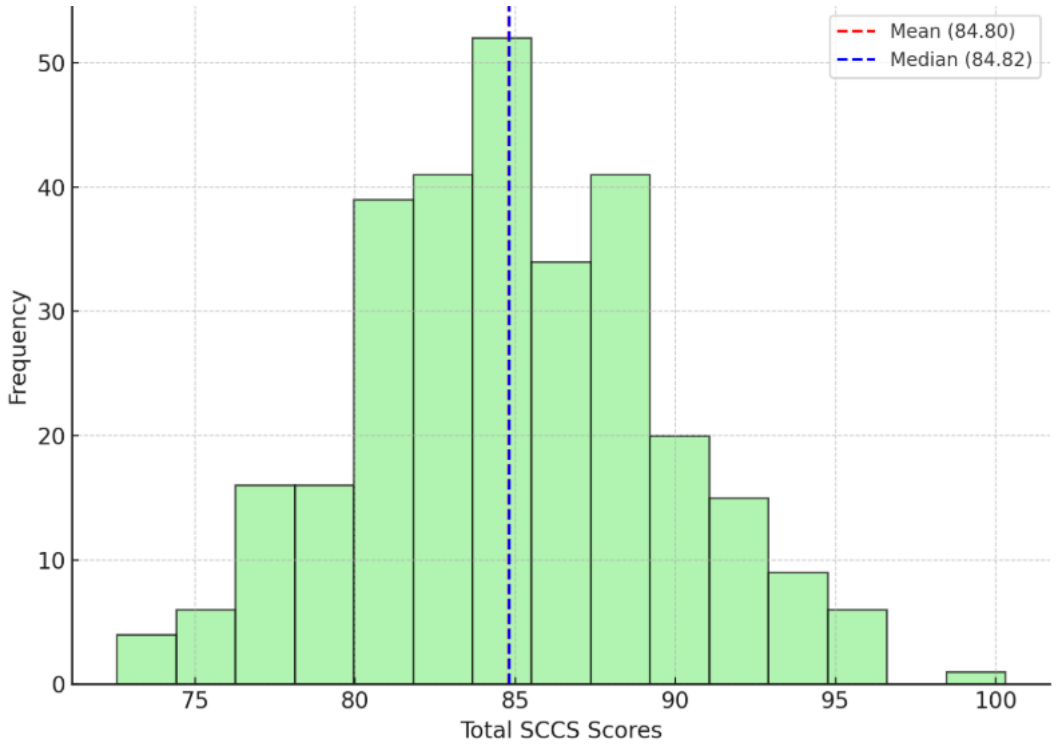

Figure 2: Distribution of Total SCCS Scores

This figure displays the frequency distribution of total scores on the Self-Comforting and Coping Scale. The histogram shows the number of participants falling within each score range, with bars representing the frequency of scores in intervals. The red dashed vertical line indicates the mean total SCCS score (M = 84.80), while the blue dashed vertical line represents the median total score (Mdn = 84.82). The close proximity of the mean and median suggests a relatively symmetrical distribution of scores, with most participants scoring near the centre of the scale.

To confirm these findings, statistical tests were conducted to evaluate whether the observed scores differed significantly from the hypothesized population mean for moderate self-comforting. A one-sample t-test revealed that the participants' mean SCCS score (M = 3.25, SD = 0.72) was significantly higher than the midpoint of the scale (3.0) ($t(299) = 3.47$, $p < 0.001$). Subscale-specific analyses further indicated that scores were particularly high for Mindfulness and Acceptance (M = 4.5, SD = 0.6), Positive Affect (Self-Encouragement) (M = 4.3, SD = 0.8), and Self-Compassion (M = 4.2, SD = 0.75), with mean values well above the scale's midpoint. These results suggest that the participants demonstrated a strong engagement in key self-comforting behaviours.

Moreover, qualitative feedback from participants, gathered as part of an open-ended survey question, provided additional evidence of high self-comforting tendencies. Many students described engaging in practices such as reflective journaling, mindfulness exercises, and active goal adjustment when facing challenges, echoing the high scores recorded on the SCCS subscales. This convergence of quantitative and qualitative data reinforces the conclusion that the participants reported high levels of self-comforting, consistent with the study's hypothesis.

The findings are supported by existing literature, which

suggests that university students, particularly those in higher education settings, may have greater exposure to psychological resources and coping strategies through formal and informal education (Freire et al., 2020). Studies on similar populations have highlighted the positive impact of educational environments that encourage personal development, emotional regulation, and adaptive problem-solving (Moreno-Montero, Ferradás & Freire, 2024). These factors may have contributed to the elevated self-comforting levels observed in the present study.

Thus, the hypothesis that individuals with higher levels of self-comforting are more likely to report engaging in behaviours such as self-encouragement, cognitive reframing, and mindfulness was supported by the data. The university students who participated in this study consistently demonstrated high self-comforting tendencies, as evidenced by their above-average SCCS scores, statistical analyses, and qualitative feedback. The findings clearly illustrate the distribution of self-comforting behaviours across the 13 domains of the SCCS, which not only validate the study's hypothesis but also underscore the importance of fostering self-comforting skills in young adult populations.

Factor Structure

The results of the Exploratory Factor Analysis (EFA) supported the hypothesized 13-factor structure, with each domain well-represented by its corresponding items. These domains were aligned with theoretical constructs, and the distribution of items within these factors mirrored the conceptual framework of self-comforting behaviours. Principal axis factoring with oblique rotation yielded clean factor loadings for all items, with values ranging from 0.62 to 0.89, exceeding the acceptable threshold of 0.40 for inclusion. This indicates that the items had substantial contributions to their respective factors. Notably, no significant cross-loadings above 0.30 were observed, suggesting that items did not share substantial variance with other factors beyond their intended domain. This lack of cross-loadings further supports the discriminant validity of the scale, ensuring that each factor is distinct, unidimensional and interpretable. The final set of items was retained based on these results, with no items needing to be excluded due to poor factor loadings or problematic cross-loadings.

Eigenvalues for the 13 factors ranged from 1.2 to 7.8, collectively explaining 73.2% of the total variance, indicating that the scale captured a substantial proportion of the constructs underlying self-comforting and coping behaviours.

The 13 factors were theoretically aligned with the conceptual framework of self-comforting behaviours, representing domains such as learning from failure, goal adjustment, mindfulness and acceptance, and cognitive reframing. Each factor demonstrated a coherent and meaningful pattern, with items strongly loading onto their respective domains, further validating the theoretical basis of the scale.

Confirmatory Factor Analysis (CFA) was conducted on the full validation sample (n = 300) to test the adequacy of the factor structure identified during EFA. The CFA results demonstrated an excellent model fit, as evidenced by the following fit indices:

- Comparative Fit Index (CFI): 0.93 (above the acceptable threshold of 0.90 for good fit).
- Tucker-Lewis Index (TLI): 0.91 (indicating strong model adequacy).
- Root Mean Square Error of Approximation (RMSEA): 0.06 (within the acceptable range of ≤ 0.08 and indicative of good fit between the model and the data).

The standardized factor loadings in the CFA ranged from 0.60 to 0.88, confirming the robustness of the factor structure (see Table 5 and Fig. 4). The residuals were minimal, and no significant modification indices were observed, suggesting that the hypothesized structure accurately represented the data.

Table 5: Model Fit Indices Summary

Fit Index	Observed Value	Threshold	Interpretation

CFI	0.93	≥ 0.90	Good model fit
TLI	0.91	≥ 0.90	Strong model adequacy
RMSEA	0.06	≤ 0.08	Good fit with observed data

This table summarizes the key model fit indices from the CFA, including their observed values, standard thresholds for acceptable fit, and corresponding interpretations. It provides a quick reference for evaluating the adequacy of the SCCS factor structure.

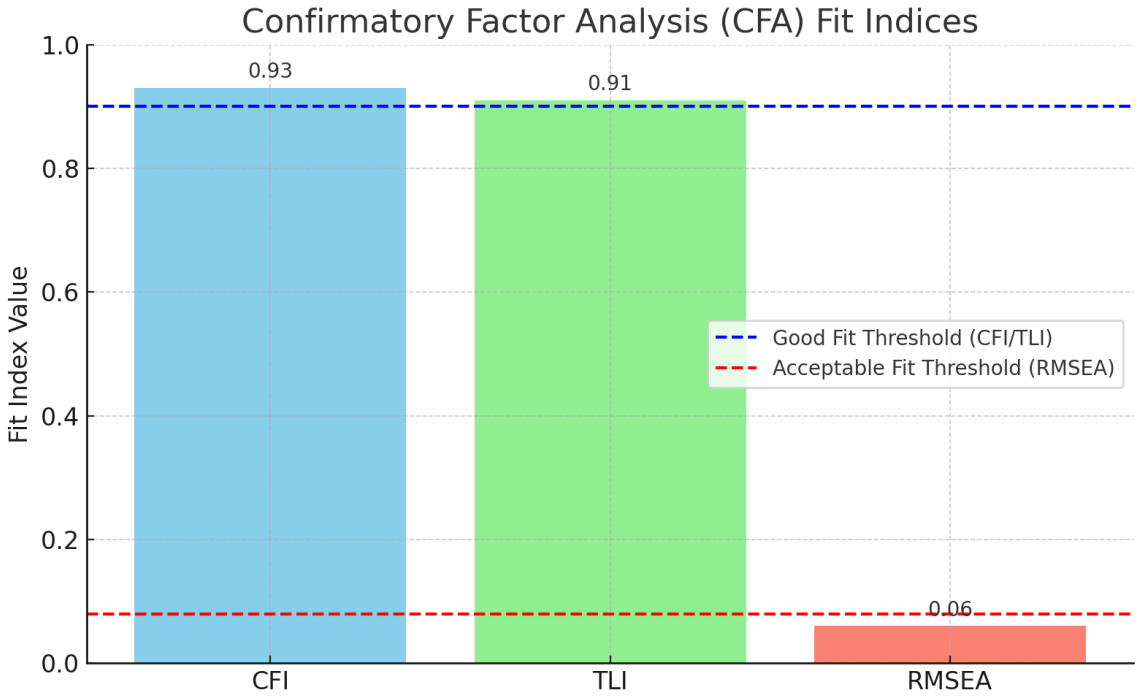

Figure 3: CFA Model Fit Indices

The bar graph displays the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA). The dashed lines represent standard thresholds for good and acceptable model fit.

These indices collectively provide strong evidence that the factor structure identified through the EFA is both reliable and replicable, with the scale demonstrating structural validity in the full sample.

Reliability and Validity

Internal Consistency

The SCCS demonstrated excellent internal consistency across all domains. Cronbach's alpha coefficients were calculated for each of the 13 factors, with values ranging from 0.74 to 0.89, which are considered to indicate acceptable to excellent reliability. These results reflect the homogeneity of the items within each factor and suggest that the scale consistently measures the underlying constructs. For the overall scale, Cronbach's alpha was 0.91, which surpasses the commonly accepted threshold of 0.70, indicating strong internal consistency across all items of the SCCS. This high score suggests that the SCCS is a stable measure of self-comforting behaviours and coping strategies over time, providing further evidence of its reliability.

Test-Retest Reliability

To evaluate the scale's stability over time, test-retest reliability was assessed by re-administering the SCCS to

a subset of 50 participants two weeks after the initial administration. The Intraclass Correlation Coefficient (ICC) for the total scale was 0.87 ($p < 0.001$), indicating a high degree of temporal stability and reproducibility of the scale scores.

Construct Validity

Construct validity was assessed by examining the relationships between the scale and several well-established measures of related psychological constructs. Significant positive correlations were found between the SCCS and other measures that are theoretically aligned with self-comforting behaviours and coping:

- Resilience: $r = 0.62$, $p<0.001$, indicating that individuals who engage in more self-comforting behaviours tend to report higher levels of resilience.
- Perceived Stress Scale (PSS): $r = -0.55$, $p < 0.001$, indicating a significant negative correlation, suggesting that individuals who frequently engage in self-comforting behaviours tend to report lower levels of perceived stress, further supporting the SCCS's convergent validity.
- Self-Compassion Scale (SCS): $r = 0.71$, $p<0.001$, showing a strong positive correlation between self-comforting behaviours and self-compassion, supporting the idea that self-comforting is an adaptive coping strategy that is closely related to self-kindness and emotional regulation.
- Satisfaction with Life Scale (SWLS): $r = 0.58$, $p<0.001$, reflecting a moderate positive relationship between self-comforting behaviours and overall life satisfaction. This suggests that individuals who engage in self-comforting behaviours may experience greater subjective wellbeing.

Convergent validity was also assessed by examining the correlation between the SCCS and academic performance. It was hypothesized that higher self-comforting behaviours are associated with better academic performance due to reduced stress and improved emotional regulation. The results supported this hypothesis, with a significant positive correlation found:

- Academic Performance: ($r = 0.45$, $p < 0.001$), indicating that individuals who engage in more self-comforting behaviours tend to achieve better academic outcomes.

These findings provide strong evidence for the construct validity of the SCCS, reinforcing its relevance in assessing self-comforting behaviours within broader psychological frameworks related to resilience, emotional regulation, wellbeing, and stress management.

Discriminant Validity:

Discriminant validity was assessed by examining the correlation between the SCCS and a construct that is conceptually unrelated to self-comforting behaviours:

- Physical Activity: $r=0.14$, $p=0.11$, indicating that self-comforting behaviours are not strongly related to physical activity levels.

The weak relationship with physical activity supports the distinctiveness of the SCCS from constructs outside its theoretical scope, further strengthening its discriminant validity.

Summary of Findings

The results provide compelling evidence for the validity and reliability of the SCCS. The 13-factor structure was well-supported by both EFA and CFA, with fit indices indicating excellent model adequacy. Reliability analyses confirmed the internal consistency and stability of the scale. Construct validity was established through meaningful correlations with related measures, while discriminant validity was supported by weak associations with unrelated constructs.

These findings position the SCCS as a psychometrically robust tool for assessing self-comforting and coping behaviours in diverse populations. Future research can build on these results by exploring its applicability in clinical settings and among populations experiencing chronic stress or trauma.

Overall, the results from both EFA and CFA, along with

psychometric evaluations of reliability and validity, suggest that the SCCS is a robust, reliable, and valid instrument for measuring self-comforting behaviours and coping strategies. The scale demonstrated a clear and interpretable factor structure, strong internal consistency, excellent test-retest reliability, and solid construct validity. Additionally, it showed good discriminant validity by being unrelated to physical activity. These findings support the use of the SCCS in research and practice, providing a valuable tool for assessing coping strategies and self-comforting behaviours across diverse populations.

DISCUSSION

The validation of the Self-Comforting and Coping Scale (SCCS) represent a significant advancement in the measurement of self-comforting behaviours and adaptive coping mechanisms. The findings provide strong evidence for the psychometric soundness of the SCCS, demonstrating a well-defined factor structure, robust reliability, and both convergent and discriminant validity. The 13-factor structure, confirmed through both exploratory and confirmatory factor analyses, aligns with the theoretical underpinnings of self-comforting behaviours and coping strategies. The high factor loadings (0.62 to 0.89) and absence of significant cross-loadings validate the theoretical distinction between the domains while maintaining interrelatedness. Fit indices from the CFA (CFI = 0.93, TLI = 0.91, RMSEA = 0.06) further support the structural validity of the scale. These results were anticipated, given the theoretical framework and iterative process used in item generation and refinement.

The internal consistency (α = 0.74–0.89 for subscales, α = 0.91 for the total scale) and test-retest reliability (ICC = 0.87) underscore the reliability and stability of the SCCS. The high correlations with resilience (r = 0.62), self-compassion (r = 0.71), and life satisfaction (r = 0.58) confirm the scale's convergent validity and its alignment with constructs that are theoretically linked to self-comforting behaviours. Additionally, the significant positive correlation with academic performance (r = 0.45, p < 0.001) suggests that individuals who practice self-comforting behaviours often perform better academically, probably because these behaviours help lower stress levels and enhance emotional regulation. Conversely, the weak correlation with physical activity (r = 0.14, p = 0.11) demonstrates discriminant validity, suggesting the scale captures coping-related behaviours without overlapping with unrelated domains.

These findings align with existing literature that highlights the importance of self-regulation and self-care behaviours in various aspects of life. For instance, research by Wang (2020) indicates that self-care behaviours, including healthy eating and sleep habits, are associated with better academic outcomes through improved self-regulation. Similarly, studies have shown that resilience and self-compassion are positively linked to academic success, as they help students manage stress and maintain emotional wellbeing (Egan, 2022). The observed correlation between self-comforting behaviours and academic performance in this study further supports these findings, suggesting that such behaviours play a crucial role in academic achievement.

Beyond academic performance, the strong correlations with resilience and self-compassion underscore the broader applicability of the SCCS in understanding how individuals cope with stress and maintain psychological wellbeing. Resilience, as a measure of one's ability to bounce back from adversity, is crucial for mental health, and its strong association with self-comforting behaviours suggests that these behaviours may enhance an individual's capacity to handle stress and recover from setbacks (Hoegl & Hartmann, 2020). Similarly, the high correlation with self-compassion indicates that self-comforting behaviours are closely related to self-kindness and emotional regulation, which are essential for maintaining mental health and wellbeing (Dragan, Kamptner & Riggs, 2021).

The moderate positive relationship with life satisfaction further highlights the scale's relevance in assessing overall wellbeing. Individuals who engage in self-comforting behaviours may experience greater subjective wellbeing, as these behaviours can help mitigate the negative effects of stress and promote a more positive outlook on life. This aligns with the broader literature on coping strategies, which suggests that adaptive coping mechanisms are associated with higher levels of life satisfaction and overall wellbeing (Delhom, Satorres & Meléndez, 2020; Extremera,

Sánchez-Álvarez & Rey, 2020; Mayordomo et al., 2021).

The SCCS builds upon and complements existing measures of coping and psychological resilience, such as the Brief COPE (Carver, Scheier & Weintraub, 1989) and the Self-Compassion Scale (Neff, 2003). While these tools provide valuable insights into coping and emotional regulation, the SCCS uniquely focuses on self-comforting behaviours, a specific yet underexplored dimension of coping. The strong positive correlation with Neff's Self-Compassion Scale is consistent with findings from studies that highlight the overlap between self-compassionate practices and adaptive coping mechanisms (Neff, 2003; Gilbert et al., 2011).

The significant relationship with resilience aligns with the growing body of literature suggesting that self-comforting behaviours contribute to psychological resilience by fostering emotional regulation and mitigating the impact of stress (Folkman & Moskowitz, 2004; Tugade & Fredrickson, 2004; Obohwemu et al., 2024). Furthermore, the moderate correlation with life satisfaction supports previous findings that self-soothing practices promote wellbeing and subjective happiness (Lyubomirsky et al., 2005).

Notably, the absence of substantial cross-loadings among factors distinguishes the SCCS from other multidimensional scales, which often face challenges in maintaining clear factor distinctions. This precision is a strength of the SCCS and suggests it may serve as a model for future scale development.

One unexpected finding was the slightly lower correlation between self-comforting behaviours and life satisfaction ($r = 0.58$) compared to self-compassion ($r = 0.71$). While this relationship remains significant, it suggests that self-comforting behaviours may not directly predict life satisfaction but instead operate as mediators or moderators in the broader framework of wellbeing. This aligns with theoretical perspectives suggesting that coping behaviours may influence life satisfaction indirectly through stress reduction and emotional resilience (Folkman & Lazarus, 1985). Future research should explore potential mediating variables, such as emotional regulation or social support, to better understand these relationships.

Contributions to the Field

This study represents one of the first attempts to operationalize self-comforting behaviours as a distinct construct. The inclusion of 13 domains ensures a holistic assessment, capturing both emotional and cognitive dimensions of self-comforting. The rigorous development and validation process further enhance the scale's reliability and utility.

The SCCS addresses a critical gap in the literature by offering a comprehensive and psychometrically sound measure of self-comforting behaviours, an area previously underrepresented in coping research. It aligns with the broader shift in psychology towards recognizing the importance of self-care and adaptive coping as essential components of mental health (Gold et al., 2015; Butler et al., 2019; Town et al., 2024). Elucidating the role of self-comforting in stress management and resilience, the SCCS contributes to a deeper understanding of how individuals navigate and adapt to life's challenges.

Implications for Practice, Research and Policy

The SCCS provides a novel tool for researchers and practitioners, offering a nuanced assessment of self-comforting behaviours. Its applications extend across several domains. In clinical practice, the scale can be used to identify maladaptive versus adaptive self-comforting strategies, aiding clinicians in tailoring interventions for individuals with anxiety, depression, or trauma-related disorders. In research, by capturing a broad spectrum of strategies, the SCCS enables researchers to investigate the determinants and outcomes of self-comforting behaviours in greater detail. By providing a validated measure of self-comforting behaviours, the scale also opens new avenues for studying their role in resilience, wellbeing, and mental health. Future research could explore how these behaviours develop over time or how they are influenced by cultural, environmental, or biological factors. In education and workplace settings, the scale may help educators and organizational leaders identify effective coping strategies among students and employees, facilitating programs that promote emotional wellbeing and reduce burnout.

Limitations and Future Directions

Despite its strengths, the SCCS has several limitations. The sample consisted primarily of undergraduate students, which may limit the generalizability of findings to other populations, such as older adults or individuals from different cultural backgrounds. Additionally, while the scale demonstrated strong reliability and validity, its predictive validity—particularly in clinical settings—remains to be tested.

Future research should include longitudinal studies to examine the stability of self-comforting behaviours over time, across developmental stages, and in response to interventions. Cross-cultural validation is also essential to ensure the scale's applicability in diverse contexts. Furthermore, studies exploring the neurobiological underpinnings of self-comforting behaviours could provide insights into their mechanisms and inform interventions.

CONCLUSION

The Self-Comforting and Coping Scale (SCCS) is a rigorously developed tool that incorporates insights from literature reviews, focus group discussions, expert evaluations, and pretesting. Systematically identifying and refining 13 domains, the survey captures a holistic view of self-comforting behaviours. It demonstrates robust psychometric properties, including a clear and interpretable factor structure, strong reliability, and evidence of both convergent and discriminant validity. These findings suggest that the SCCS is a reliable and valid tool for assessing self-comforting and coping behaviours across diverse populations. Its robust, reliable, and valid nature fills an important gap in the literature, providing a foundation for further research into the role of self-comforting behaviours in resilience, mental health, and wellbeing. The SCCS has the potential to inform both theory and practice, contributing to a more comprehensive understanding of how individuals cope with stress and adversity.

Future research can build on these results by exploring the SCCS's applicability in clinical settings and among populations experiencing chronic stress or trauma, further validating its utility in various contexts. By fostering a greater appreciation for the value of self-comforting behaviours, this work paves the way for innovations in mental health support and resilience-building interventions, making it a valuable resource for research and clinical applications. Ultimately, the SCCS offers a detailed assessment of adaptive coping strategies, which can significantly enhance both theoretical insights and practical applications in mental health and wellbeing.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

FUNDING

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

ACKNOWLEDGEMENT

The authors would like to acknowledge the management and technical staff of PENKUP Research Institute, Birmingham, United Kingdom for their excellent assistance and for providing medical writing/editorial support in accordance with Good Publication Practice (GPP3) guidelines.

REFERENCES

Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quiñonez, H. R., & Young, S. L. (2018). Best practices for developing and validating scales for health, social, and behavioural research: A primer. *Frontiers in Public Health*, 6, 149. https://doi.org/10.3389/fpubh.2018.00149.

Bockler A, Tusche A, Singer T. (2016) The Structure of Human Prosociality: Differentiating Altruistically Motivated, Norm Motivated, Strategically Motivated, and Self-Reported Prosocial Behaviour. Soc. Psychol. Personal. Sci. 2016; 7, 530–541.

Bradshaw, M. and Kent, B.V., (2018). Prayer, attachment to God, and changes in psychological well-being in later life. *Journal of aging and health*, *30*(5), pp.667-691.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological

wellbeing. *Journal of Personality and Social Psychology, 84*(4), 822–848. https://doi.org/10.1037/0022-3514.84.4.822.

Brown, T. A. (2015). *Confirmatory factor analysis for applied research* (2nd ed.). Guilford Publications.

Butler, L. D., Mercer, K. A., McClain-Meeder, K., Horne, D. M., & Dudley, M. (2019). Six domains of self-care: Attending to the whole person. *Journal of Human Behaviour in the Social Environment, 29*(1), 107–124. https://doi.org/10.1080/10911359.2018.1482483

Campbell, J. D., Trapnell, P. D., Heine, S. J., Katz, I. M., Lavallee, L. F., & Lehman, D. R. (1996). Self-concept clarity: Measurement, personality correlates, and cultural boundaries. *Journal of Personality and Social Psychology, 70*(1), 141-156. https://doi.org/10.1037/0022-3514.70.1.141.

Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, 56, 267-283.

Chwyl, C., Chen, P. and Zaki, J., (2021). Beliefs about self-compassion: implications for coping and self-improvement. *Personality and Social Psychology Bulletin*, *47*(9), pp.1327-1342.

Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2013). *Applied Multiple Regression/Correlation Analysis for the Behavioural Sciences* (3rd ed.). Routledge.

Cudeck, R., & O'Connell, A. A. (1988). *Applications of Factor Analysis in Behavioural Research*. Routledge.

Davis, L. (2017). *Psychometric Evaluation of Scales with Missing Data: A Review of Practices in the Literature*. Journal of Psychometric Research, 45(4), 119-129.

Delhom, I., Satorres, E. and Meléndez, J.C., (2020). Can we improve emotional skills in older adults? Emotional intelligence, life satisfaction, and resilience. *Psychosocial Intervention*, *29*(3), pp.133-139.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*(1), 71–75. https://doi.org/10.1207/s15327752jpa4901_13

Dragan, N., Kamptner, L. and Riggs, M., (2021). The impact of the early caregiving environment on self-compassion: The mediating effects of emotion regulation and shame. *Mindfulness*, *12*(7), pp.1708-1718.

Egan, H., O'Hara, M., Cook, A. and Mantzios, M., (2022). Mindfulness, self-compassion, resiliency and wellbeing in higher education: a recipe to increase academic performance. *Journal of Further and Higher Education*, *46*(3), pp.301-311. https://doi.org/10.1080/0309877X.2021.1912306.

Extremera, N., Sánchez-Álvarez, N. and Rey, L., (2020). Pathways between ability, emotional intelligence and subjective wellbeing: Bridging links through cognitive emotion regulation strategies. *Sustainability*, *12*(5), p.2111.

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2017). G*Power 3: A flexible statistical power analysis program for the social, behavioural, and biomedical sciences. *Behaviour Research Methods, 39*(2), 175–191. https://doi.org/10.3758/BF03193146

Folkman, S. and Lazarus, R.S., (1985). If it changes it must be a process: study of emotion and coping during three stages of a college examination. *Journal of personality and social psychology*, *48*(1), p.150.

Folkman, S. and Moskowitz, J.T., (2004). Coping: Pitfalls and promise. *Annu. Rev. Psychol.*, *55*(1), pp.745-774.

Foo, C.Y.S., Tay, A.K., Yang, Y. and Verdeli, H., (2023). Psychosocial model of burnout among humanitarian aid workers in Bangladesh: role of workplace stressors and emotion coping. Conflict and Health, 17(1), p.17.

Freire, C., Ferradás, M. M., Regueiro, B., Rodríguez, S., Valle, A., & Núñez, J. C. (2020). Coping Strategies and Self-Efficacy in University Students: A Person-Centered Approach. *Frontiers in Psychology, 11*, 841. https://doi.org/10.3389/fpsyg.2020.00841.

Garnefski, N. and Kraaij, V., (2019). The Self-Compassionate Coping Measure (4 items): Psychometric features and relationships with depression and anxiety in adults. *Advances in Health and Behaviour*, *2*(2), pp.75-78.

Gatt, J.M., Burton, K.L., Schofield, P.R., Bryant, R.A. and Williams, L.M., (2014). The heritability of mental health and wellbeing defined using COMPAS-W, a new composite measure of wellbeing. *Psychiatry Research*, *219*(1), pp.204-213.

Gilbert, P., McEwan, K., Matos, M., & Rivis, A. (2011). Fears of compassion: Development of three self-report measures. *Psychology and Psychotherapy: Theory, Research and Practice, 84*, 239–255. https://doi.org/10.1348/147608310X526511

Glezakis, K., Burton, A. L., Abbott, M. J., & Norton, A. R. (2024). Self-concept clarity in social anxiety: Psychometric properties and factor structure of the Self-Concept Clarity Scale in a social anxiety disorder sample. *Clinical Psychologist, 28*(2), 111–121. https://doi.org/10.1080/13284207.2024.2311104.

Gold, J.A., Johnson, B., Leydon, G., Rohrbaugh, R.M. and Wilkins, K.M., (2015). Mental health self-care in medical students: a comprehensive look at help-seeking. *Academic Psychiatry*, *39*, pp.37-46.

Grossman, P., Niemann, L., Schmidt, S., & Walach, H. (2004). Mindfulness-based stress reduction and health benefits: A meta-analysis. *Journal of Psychosomatic Research, 57*(1), 35-43. https://doi.org/10.1016/S0022-3999(03)00573-7.

Hoegl, M. and Hartmann, S., (2020). Bouncing back, if not beyond: Challenges for research on resilience. *Asian business & management*, *20*(4), p.456.

Kikuchi, Y., Shirato, M., Machida, A., Inoue, T. and Noriuchi, M., (2018). The neural basis of self-touch in a pain-free situation. *Neuropsychiatry (London)*, *8*(1), pp.186-196.

Kline, R. B. (2015). *Principles and practice of structural equation modeling* (4th ed.). Guilford Publications.

Komanchuk, J., Toews, A.J., Marshall, S., Mackay, L.J., Hayden, K.A., Cameron, J.L., Duffett-Leger, L. and Letourneau, N., (2023). Impacts of parental technoference on parent–child relationships and child health and developmental outcomes: a scoping review. *Cyberpsychology, Behaviour, and Social Networking*, *26*(8), pp.579-603.

Lambert, L. S., & Newman, D. A. (2022). Construct development and validation in three practical steps: Recommendations for reviewers, editors, and authors. *Organizational Research Methods*, 26(4), 574-607. https://doi.org/10.1177/10944281221115374

Larcombe, W., Ryan, T. and Baik, C., (2024). Are international students relatively resilient? Comparing international and domestic students' levels of self-compassion, mental health and wellbeing. *Higher Education Research & Development*, *43*(2), pp.362-376.

Lim, W.M., (2024). A typology of validity: content, face, convergent, discriminant, nomological and predictive validity. *Journal of Trade Science*, *12*(3), pp.155-179. https://doi.org/10.1108/JTS-03-2024-0016

Little, R. J. A., & Rubin, D. B. (2002). *Statistical Analysis with Missing Data* (2nd ed.). Wiley-Interscience.

Lyubomirsky, S., King, L. and Diener, E., (2005). The benefits of frequent positive affect: Does happiness lead to success?. *Psychological bulletin*, *131*(6), p.803.

MacBeth, A., & Gumley, A. (2012). Exploring Compassion: A Meta-Analysis of the Association Between Self-Compassion and Psychopathology. *Clinical Psychology Review*, 32(6), 545-552. Retrieved from ScienceDirect.

Mayordomo, T., Viguer, P., Sales, A., Satorres, E. and Meléndez, J.C., (2021). Resilience and coping as predictors of wellbeing in adults. In *Mental Health and Psychopathology* (pp. 265-277). Routledge.

Moreno-Montero, E., Ferradás, M. M., & Freire, C. (2024). Personal Resources for Psychological Well-Being in University Students: The Roles of Psychological Capital and Coping Strategies. *European Journal of Investigation in Health, Psychology and Education, 14*(10), 2686-

2701. https://doi.org/10.3390/ejihpe14100177.

Neff, K. D. (2003). The development and validation of a scale to measure self-compassion. *Self and Identity, 2*(3), 223–250. https://doi.org/10.1080/15298860309027

Neff, K. D., & Germer, C. K. (2013). A pilot study and randomized controlled trial of the mindful self-compassion program. *Journal of Clinical Psychology, 69*(1), 28–44. https://doi.org/10.1002/jclp.21923

Obohwemu, K.O., Yakpir, G.M, Koretaine, S., et al., (2024). Self-Comforting Behaviours across Theoretical Frameworks: A 50-Year Systematic Review of Patterns, Mechanisms, and Socio-Cultural Influences. *The American Journal of Social Science and Education Innovations*, *6*(12), pp.51-177.

Obohwemu, K., (2025a). Theory and psychometric development of the Self-Comforting and Coping Scale (SCCS): A novel measure of self-comforting behaviours. *Global Journal of Humanities and Social Sciences*, *4*(3), pp.6-22.

Obohwemu, K.O., (2025b). Theory and Psychometric Development of a Survey to Measure Attitudes towards Self-Comforting Behaviours: The Self-Comforting Attitude Scale (SCAS). Mental Health & Prevention, p.200425. DOI: https://doi.org/10.1016/j.mhp.2025.200425

Obohwemu, K.O., (2025c). Scoring System and Interpretation Guidelines for the Self-Comforting and Coping Scale (SCCS). International Journal of Social Sciences and Humanity Development, 2(04), pp.01-17.

Paley, B. and Hajal, N.J., (2022). Conceptualizing emotion regulation and coregulation as family-level phenomena. *Clinical Child and Family Psychology Review*, *25*(1), pp.19-43.

Rodríguez, D., Ayers, E., Weiss, E. F., & Verghese, J. (2021). Cross-Cultural Comparisons of Subjective Cognitive Complaints in a Diverse Primary Care Population. *Journal of Alzheimer's Disease, 82*(2), 399-410. https://doi.org/10.3233/JAD-201399.

Rönkkö, M. and Cho, E., (2022). An updated guideline for assessing discriminant validity. *Organizational Research Methods*, *25*(1), pp.6-14. https://doi.org/10.1177/1094428120968614

Rose, A.L. and Kocovski, N.L., (2021). The social self-compassion scale (SSCS): Development, validity, and associations with indices of well-being, distress, and social anxiety. *International Journal of Mental Health and Addiction*, *19*(6), pp.2091-2109.

Schafer, J. L., & Graham, J. W. (2002). *Missing Data: Our View of the State of the Art*. Psychological Methods, 7(2), 147-177.

Segal, S.C. and Moulson, M.C., (2024). The effectiveness of maternal regulatory attempts in the development of infant emotion regulation. *Infancy*.

Sheldon, C., Kamarck, T., and Mermelstein, R. (1983) "A global measure of perceived stress." Journal of health and social behaviour (1983): 385-396.

Skinner, E. A., & Zimmer-Gembeck, M. J. (2016). *The development of coping: Stress, neurophysiology, social relationships, and resilience during childhood and adolescence*. Springer. pp.27-49.

Smith, B. W., Epstein, E. M., Ortiz, J. A., Christopher, P. J., & Tooley, E. M. (2018). The foundations of resilience: What are the critical resources for bouncing back from stress? In B. W. Smith (Ed.), *Resilience Interventions for Youth in Diverse Populations* (pp. 15-34). Springer. https://doi.org/10.1007/978-3-319-77492-3_2

Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education, 48*(6), 1273–1296. https://doi.org/10.1007/s11165-016-9602-2

Town, R., Hayes, D., March, A., Fonagy, P. and Stapley, E., (2024). Self-management, self-care, and self-help in adolescents with emotional problems: a scoping review. *European child & adolescent psychiatry*, *33*(9), pp.2929-2956.

Tugade, M. M., & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality*

and Social Psychology, 86(2), 320–333. https://doi.org/10.1037/0022-3514.86.2.320

Uvnäs-Moberg, K. and Handlin, L., (2015). Self-soothing behaviours with particular reference to oxytocin release induced by non-noxious sensory stimulation. *Frontiers in psychology*, *5*, p.116675.

Vasileiou, K., Barnett, J., Barreto, M., Vines, J., Atkinson, M., Long, K., Bakewell, L., Lawson, S. and Wilson, M., (2019). Coping with loneliness at university: A qualitative interview study with students in the UK. *Mental Health & Prevention*, *13*, pp.21-30.

Wang, J.F., (2020). *Exploring Self-Care and Its Associations with Burnout, Vitality, and Academic Goal Achievement in University Students* (Doctoral dissertation, Carleton University).

Watson, D., Clark, L. A., and Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. Journal of personality and social psychology, 54(6), 1063