

Chapter # 16

THE JAPANESE VERSION OF THE BRIEF RESILIENCE SCALE

Translation, Reliability and Construct Validity

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ABSTRACT

Resilience as a positive psychological construct has recently attracted considerable attention. However, a consensus on the definition of resilience has not yet been reached; as a result, numerous measures have been developed to address this concept. This study examined the reliability and construct validity of a new Japanese translation of the Brief Resilience Scale (BRS-J) to assess the ability to bounce back or recover from stress, an important conceptualization shared by many definitions of resilience. Data were collected from 276 college students in Japan (40.1% women; mean age 20.81 years, SD = 0.67). Although exploratory factor analysis revealed a one-factor structure with all items, confirmatory factor analysis supported a bifactor structure with a general resilience factor and a method factor for negatively worded items. The internal consistency reliability and test-retest reliability over a 1-month period were good. Construct validity was supported by the hypothesized correlations with scores for three types of dispositional coping, grit, hedonic and eudaimonic well-being, perceived stress, depression, and anxiety. These preliminary findings support the idea that the BRS-J is a valid measure of resilience among Japanese-speaking people.

Keywords: resilience, brief resilience scale, Japanese version, reliability, construct validity.

1. INTRODUCTION

1.1. The Concept and Definition of Resilience Today

Resilience has long been used in various disciplines and practices (Herrman et al., 2011; Hiebel et al., 2021; Cutuli, Herbers, Masten, & Reed, 2021; Sisto et al., 2019). Within this context, the concept of resilience as a positive psychology construct, which refers to positive adaptation to adversity (Chmitorz, et al., 2018a; Price, 2023; Sánchez, Estrada-Hernández, Booth, & Pan, 2021; Vella & Pai, 2019), has received increasing attention from researchers, practitioners, and policy makers. It has generated considerable research in different academic disciplines over the past couple of decades (Denckla et al., 2020; Fletcher & Sarkar, 2013; Masten, Lucke, Nelson, & Stallworthy, 2021; Salisu & Hashim, 2017; Stainton et al., 2019), driven by a shift from disease-oriented to health-oriented research (Kalisch et al., 2017; Ungar & Theron, 2019; Vella & Pai, 2019; Windle, 2011). Numerous reviews of the literature on resilience have theoretically and empirically substantiated its potential impact on health and well-being (Hiebel et al., 2021; Judijanto, 2025; Sisto et al., 2019; Stainton et al., 2019; Windle, 2011).

However, most of these literature reviews have highlighted a lack of consensus on the definition and conceptualization of resilience (e.g., Denckla et al., 2020; Luthar, Cicchetti, & Becker, 2000; Troy et al., 2023; Vella & Pai, 2019). Many researchers have underlined the complex nature of resilience (Judijanto, 2025; Sisto et al., 2019; Southwick, Bonanno,

Masten, Panter-Brick, & Yehuda, 2014) and proposed different definitions in many contexts (Hiebel et al., 2021; Jones, 2019; Sisto et al., 2019) and manifold theories (e.g., Fletcher & Sarkar, 2012; Fullerton, Zhang, & Kleitman, 2021; Liu, Reed, & Girard, 2017). Moreover, there are several types of resilience in diverse contexts, including psychological, academic, organizational, team, and emergent (Southwick et al., 2014). Numerous studies have revealed different aspects or dimensions of resilience and various factors that affect it such as contextual, individual, and social factors (Fletcher & Sarkar, 2013; Hiebel et al., 2021).

Researchers have conceptualized resilience in various ways, including traits, states, outcomes, and processes (Herrman et al., 2011; Pangallo, Zibarras, Lewis, & Flaxman, 2015). Generally, the definition of a concept evolves as scientific knowledge expands (Herrman et al., 2011). Resilience is no exception to this trend (Sisto et al., 2019). In early research, the adapted conceptual approach to resilience tended towards a trait-oriented approach, which primarily conceptualized resilience as a personal trait. Subsequent research, however, proposed and utilized an outcome- or process-oriented approach that considers resilience by focusing on outcomes or processes (Hiebel et al., 2021; Jacobs & Horsch, 2019; Luthar et al., 2000; Pangallo et al., 2015). Research interest has shifted from static and stable traits to dynamic interactions with environmental and systemic factors (Chmitorz, et al., 2018a; Denckla et al., 2020; Herrman et al., 2011; Judijanto, 2025). Moreover, although the concept of resilience has been questioned owing to its ambiguity (Jones, 2019), there is a consensus on the core components of resilience underlying various definitions: adversity or risk, assets or resources to protect individuals, and positive adaptation (Fletcher & Sarkar, 2013; Stainton et al., 2019; Windle, 2011).

The ambiguous definition of the construct adversely affects its research, including impediments to shared definitions, comparisons of research results, and objective measurements (Fletcher & Sarkar, 2013; Stainton et al., 2019; Troy et al., 2023). Problems with the definition of resilience may impede the validity and progression of research involving resilience (Hiebel et al., 2021; Sisto et al., 2019). It is likely that many researchers share a way of conceptualizing (outcome- or process-oriented) the core components (adversity, assets, and positive adaptation) of resilience. Nonetheless, its conceptual ambiguity remains; thus, an essential comprehension of resilience is not yet sufficient (Hiebel et al., 2021; Sisto et al., 2019). A debate on the concept and definition of resilience is ongoing (Bardoel & Drago, 2021; Bertsia & Poulou, 2023; Denckla et al., 2020; Sisto et al., 2019).

1.2. Measures of Resilience

Heterogeneity in the definition of resilience has resulted in the development of numerous measures (Bonanno, Romero, & Klein, 2015; Chmitorz, et al., 2018a; Hiebel et al., 2021; Kalisch, Muller, & Tuscher, 2015; Stainton et al., 2019). Reflecting on the lack of consensus on its definition, there is no consensus among researchers regarding its measurement (Denckla et al., 2020; Salisu & Hashim, 2017; Troy et al., 2023; Vella & Pai, 2019). This lack of consensus on measurement has also been observed in other latent psychological constructs (Pangallo et al., 2015).

Most existing measures of resilience focus on either resilience as a personality trait or resilience factors (e.g., self-efficacy and social support) that modify the impact of adversities on mental health (Chmitorz, et al., 2018a). Among the scales repeatedly used in past studies (Chmitorz, et al., 2018a; Pangallo et al., 2015; Windle, Bennett, & Noyes, 2011), the Resilience Scale (Wagnild & Young, 1993) was developed in earlier phases. This 25-item measure was designed to rate resilience as a stable personality trait (Chmitorz, et al., 2018a) and comprises the two dimensions of personal competence and acceptance of self and life. The Connor-Davidson Resilience Scale (Connor & Davidson, 2003), which has also been

frequently used in research, is a 25-item measure with five subscales used to assess the availability of various resilience factors (Chmitorz, et al., 2018a). A 10-item short form of this scale, the Connor-Davidson Resilience Scale 10 (Campbell-Sills & Stein, 2007), is a unidimensional measure that assesses the ability to bounce back from various negative experiences. As a resilience measure designed for adolescents, the Resilience Scale for Adolescents (Hjemdal, Friborg, Stiles, Martinussen, & Rosenvingeet, 2006) is a 28-item measure to assess five resilience factors (e.g., personal competence and social resources). The Resilience Scale for Adults (Friborg, Hjemdal, Rosenvinge, & Martinussen, 2003), a 33-item scale designed for adults, assesses five resilience factors (e.g., personal structure and social support).

1.3. The Brief Resilience Scale

Apart from these measures of resilience, another frequently used measure is the Brief Resilience Scale (BRS; Smith et al., 2008), a brief self-report measure developed to assess the ability to bounce back or recover from stress. The BRS is the only measure that assesses resilience dynamically as the ability to bounce back (Hiebel et al., 2021). This ability is considered the closest to the original and most basic meaning of the term “resilience” (Smith et al., 2008) and an important conceptualization shared by many of the existing definitions of resilience (Bonanno et al., 2015; Herrman et al., 2011; Hiebel et al., 2021; Vella & Pai, 2019), including the American Psychological Association’s definition (American Psychological Association, 2014). Emphasizing this ability allows for the differentiation of resilience from related concepts such as adaptation, thriving, and stress resistance (Jacobs & Horsch, 2019; Smith et al., 2008).

BRS consists of six items (e.g., “I tend to bounce back quickly after hard times.”), which include three reverse-scored items, responded on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale scores are calculated based on the mean of the six items. Higher scores indicate greater resilience, which is a greater ability to bounce back from stress. BRS has good psychometric properties (Pangallo et al., 2015) and has been evaluated as the best measure in a systematic review to assess the psychometric rigor of existing resilience measures (Windle et al., 2011). It has been translated and widely used in many languages, including French (Jacobs & Horsch, 2019), German (Chmitorz, Wenzel et al., 2018b), Dutch (Soer et al., 2019), Spanish (Rodríguez-Rey, Alonso-Tapia, & Hernansaiz-Garrido, 2016), Turkish (Haktanir, Lenz, Can, & Watson, 2016), Arabic (Baattaiah, Alharbi, Fayaz Khan, & Aldhahi, 2023), Chinese (Lai & Yue, 2014), Korean (Kim et al., 2023), and Japanese (Tokuyoshi & Moriya, 2015).

The results of the initial validation study with four separate samples (Smith et al., 2008) showed that BRS had a one-factor structure obtained using exploratory factor analysis and adequate internal consistency reliability (Cronbach’s α s = .80 to .91). The test-retest reliability over 1 month for one sample and over 3 months for another sample was adequate (intra-class correlations = .69 and .62, respectively). Among some or all samples, convergent validity was supported through significant correlations with scores for optimism, pessimism, purpose in life, alexithymia, social support, negative social interactions, various coping strategies, and health outcomes, including perceived stress, anxiety, depression, positive and negative affect, physical symptoms, fatigue, and pain. These correlations were positive for positive constructs, such as optimism, and negative for negative constructs, such as anxiety.

BRS scores were highly correlated with scores on other resilience measures (r s = .49 to .59), such as the Connor-Davidson Resilience Scale (Connor & Davidson, 2003) and the Ego Resiliency Scale (Block & Kremen, 1996). However, even after controlling for scores on the two resilience measures or scales of resilience resources (e.g., optimism and social

support), BRS scores were significantly correlated with scores for several health outcomes, supporting discriminant predictive validity. In addition, BRS scores also showed utility in distinguishing between healthy and clinical samples, including patients with fibromyalgia and those undergoing cardiac rehabilitation.

The existing Japanese version of the BRS (Tokuyoshi & Moriya, 2015) also showed adequate reliability and validity including unidimensionality using exploratory and confirmatory factor analyses, internal consistency (Cronbach's $\alpha = .86$ and coefficient $\omega = .87$), and construct validity based on correlations with scores for coping strategies, life satisfaction, and personal growth initiative (Tokuyoshi & Moriya, 2015). In addition, the Japanese version yielded appropriate results from item response theory analyses for scale items and showed high correlations ($r = .57$) with scores on the Japanese version of the Ego Resiliency Scale (Block & Kremen, 1996; Hata & Onodera, 2013). However, the Japanese version contains a few inaccurate translations. BRS is regarded as a useful and excellent measure for assessing resilience and has been adopted in various countries and regions worldwide. Therefore, developing an appropriately translated Japanese version would significantly contribute to resilience research and practice in the Japanese population.

The original English and Japanese versions of the BRS confirmed the one-factor structure as hypothesized (Smith et al., 2008; Tokuyoshi & Moriya, 2015). However, the results of the exploratory factor analysis supported both the one- (e.g., Jacobs & Horsch, 2019; Lai & Yue, 2014; Sánchez et al., 2021) and two-factor structures represented by positively and negatively worded items (e.g., Ahmad Sabki et al., 2023; Baattaiah et al., 2023; Soer et al., 2019). Furthermore, factor structures obtained from confirmatory factor analysis of other non-English versions were inconsistent, with variations including a one-factor structure (e.g., Jacobs & Horsch, 2019; Haktanir et al., 2016), one-factor structure with method effects on negatively worded items (e.g., Furstova, Kascakova, Polackova Solcova, Hasto, & Tavelet, 2021), correlated two-factor structure (e.g., Baattaiah et al., 2023; Soer et al., 2019), two-factor structure with a higher-order factor representing resilience (e.g., Rodríguez-Rey et al., 2016; Kim et al., 2023), bifactor structure consisting of a general factor of resilience and a method factor for negatively worded items (e.g., Chmitorz, et al., 2018b; Broll et al., 2024), and bifactor structure consisting of a general factor of resilience and two method factors for negatively and positively worded items (e.g., Hidalgo-Rasmussen & González-Betanzos, 2019; Sánchez et al., 2021). In these factor structures, the correlated two-factor and two-factor structures with a higher-order factor were mathematically equivalent (Duckworth, Quinn, & Tsukayama, 2021; Muenks, Wigfield, Yang, & O'Neal, 2017). Moreover, the two-factor and method factors reflect the positive (items 1, 3, and 5) and negative (items 2, 4, and 6) wording of the BRS items. Although this wording serves to mitigate acquiescence bias (Baattaiah et al., 2023), it induces a wording effect (Gu, Wen, & Fan, 2017; Xu & Leung, 2016; Yang & Jones, 2008), thereby rendering these specific factor structures (Ahmad Sabki et al., 2023; Baattaiah et al., 2023; Broll et al., 2024; Rodríguez-Rey et al., 2016). Most previous studies have identified the wording effect rather than the construct of resilience as the source of these factor structures and, as such, have not developed subscales of the BRS based on these findings. Furstova et al. (2021) supported a one-factor structure with method effects but did not test the bifactor structure. Furthermore, these distinctions in the factor structure of the BRS may stem from the target cultures or populations (Jacobs & Horsch, 2019; Sánchez et al., 2021). In addition, several studies (e.g., Coelho, Cavalcanti, Rezende, & Gouveia, 2016; Minh Nguyen, Tran, & Hoang Le, 2023) removed Item 5 ("I usually come through difficult times with little trouble.") on the BRS because of low factor loading of the item.

1.4. Purpose of the Study

This study aimed to translate the BRS into Japanese (BRS-J) and evaluate its reliability and construct validity using data collected from Japanese college students. By examining the reliability and construct validity of the BRS-J, this study seeks to provide a valuable tool for researchers and practitioners working with the Japanese population in resilience research. Based on previous studies, it was expected that the exploratory factor analysis of the BRS-J would identify one (e.g., Jacobs & Horsch, 2019; Smith et al., 2008) or two factors (e.g., Baattaiah et al., 2023; Soer et al., 2019). Moreover, four factor models supported by previous studies (e.g., Baattaiah et al., 2023; Chmitorz, et al., 2018b; Hidalgo-Rasmussen & González-Betanzos, 2019; Jacobs & Horsch, 2019; Rodríguez-Rey et al., 2016) were examined using confirmatory factor analysis: (1) a one-factor model that included all the items, (2) a correlated two-factor model with positively and negatively worded items in separate factors, (3) a bifactor model with a general resilience factor and a method factor for negatively worded items, and (4) a bifactor model with a general resilience factor and two method-effect factors for negatively and positively worded items. This study also carefully examined the factor loading of Item 5.

The BRS-J was expected to have satisfactory internal consistency and a high to very high test-retest correlation over a 1-month interval, similar to the interval in the study that developed the BRS (Smith et al., 2008). The construct validity of the BRS-J was evaluated by examining its correlation with scores on related measures. BRS-J scores would be positively correlated with cognitive and behavioral coping scores and negatively correlated with avoidance coping scores. Based on previous findings (Smith et al., 2008; Smith, Tooley, Christopher, & Kay, 2010; Smith, 2021), BRS-J scores would be positively correlated with scores for life satisfaction and experiences of positive affect as two components of the tripartite model of hedonic (Diener, Suh, Lucas, & Smith, 1999) and eudaimonic well-being, including optimism, supportive relationships and meaning, and purpose in life, and negatively correlated with scores for experiences of negative affect as the other component of hedonic well-being. In addition, a positive correlation was hypothesized between BRS-J and grit scores; grit is defined as trait-level perseverance and passion for long-term goals (Duckworth, Peterson, Matthews, & Kelly, 2007) and thus can also be regarded as a similar construct of resilience (Cheng, Kam, & Cui, 2023; Duckworth, 2017; Stoffel & Cain, 2018; Wang, 2021). In contrast, there would be negative correlations between BRS-J and ill-being scores, including perceived stress, depression, and anxiety. All these correlations were expected to be significant but not very high because although resilience and these constructs are closely interrelated, they are conceptually distinct (Datu, 2021; Fletcher & Sarkar, 2013; Hiebel et al., 2021; Smith et al., 2008; Troy et al., 2023).

2. METHOD

2.1. Participants

The participants included 276 college students (40.1% women) from two different colleges in two large cities in Japan, with a mean age of 20.81 ($SD = .67$) ranging from 20 to 23. All participants were informed of the purpose of this study, anonymity, and confidentiality. The participants agreed to voluntarily participate in two questionnaire sessions 1 month apart (Time 1 and Time 2) and completed the measures. At Time 1, all questionnaires were administered. At Time 2, all the participants from the Time 1 session completed only the BRS-J. Ethical approval for the survey was obtained from the ethics committee of the author's institution.

2.2. Measures

(1) Japanese translation of the Brief Resilience Scale

The original English version of the BRS was translated into Japanese with the permission of Dr. Bruce W. Smith (personal communication, October 4, 2021). The translation was carried out per the translation and back-translation procedures outlined in various guidelines (e.g., Beaton, Bombardier, Guillemin, & Ferraz, 2000; Brislin, 1986; Sousa & Rojjanasrirat, 2011). The original BRS was translated into Japanese by a bilingual professor and then back-translated into English by another bilingual professor. Subsequently, two researchers compared the translation with the back-translation in detail. This process was repeated until translation and back-translation reached a satisfactory level of consistency. During the translation, great attention was paid to ensuring that the Japanese phrases were simple and appeared natural. Five Japanese graduate and undergraduate students approved the final translation. The six items of the BRS-J were rated on the same 5-point scale as the original BRS.

(2) Coping

Coping was assessed using the Coping Inventory for the Japanese (Sumi, 2007b), a brief Japanese measure used to assess three dimensions of dispositional coping: (a) cognitive approach coping, which refers to cognitively approaching a problem and making active efforts to resolve it; (b) behavioral approach coping, which involves behavioral efforts to approach a problem and resolve it; and (c) avoidance approach coping, which refers to efforts to avoid a problem and focus mainly on managing the emotions it evokes. This measure has three subscales corresponding to the dimensions and comprises five items for each subscale (e.g., “Seeking advice from others.”). These items were rated on a 5-point frequency scale ranging from 1 (*not at all*) to 7 (*very much*). The Coping Inventory for the Japanese has a three-factor structure corresponding to the subscales, internal consistency reliability (Cronbach’s α = .65 to .73), test-retest reliability over a 3-week period (r s = .25 to .46), and convergent validity based on correlations with scores for perceived stress, size of the support network, satisfaction with actual support, optimism, and self-esteem. Convergent validity was supported by correlations with scores on the active-cognitive, active-behavioral, and avoidance coping subscales of the Japanese version of the Coping Responses Scale (Billings & Moos, 1981; Sumi, 1999).

(3) Grit

Grit was measured using the Japanese version of the Short Grit Scale (Duckworth & Quinn, 2009; Sumi, 2024) which consists of eight items (e.g., “I am diligent.”) rated on a 5-point scale ranging from 1 (*not like me at all*) to 5 (*very much like me*). The Japanese version has a two-factor structure, internal consistency (Cronbach’s α = .82 and .89), test-retest reliability over a 4-week period (r = .77), and convergent and discriminant validity based on correlations with scores for self-control, Big-Five personality traits, vitality, hedonic and eudaimonic well-being, and psychological stress, depression, and anxiety.

(4) Hedonic well-being

Life satisfaction was assessed using the Japanese version of the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985; Sumi, 2020) which consists of five items (e.g., “I am satisfied with my life.”). The items were scored on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The Japanese version has a unidimensional structure, internal consistency reliability (Cronbach’s α = .78 to .82), test-retest reliability over a 1-month period (r = .73), and construct validity through expected correlations with scores for experiences of positive and negative affect, and eudaimonic well-being (Sumi, 2020).

Experiences of positive and negative affect were measured using the Japanese version of the Scale of Positive and Negative Experience (Diener et al., 2010; Sumi, 2013, 2014), with subscales for positive and negative affect. Both subscales consist of six items that assess recent experiences of affect (e.g., happy and sad). The items were rated on a 5-point frequency scale, ranging from 1 (*very rarely or never*) to 5 (*very often or always*). The Japanese versions showed a two-factor structure corresponding to the subscales, internal consistency reliability (Cronbach's α s = .86 to .93), test-retest reliability over a 1-month period (r s = .60 and .57), and construct validity through acceptable correlations with scores for positive and negative feelings, life satisfaction, subjective happiness, dispositional optimism and pessimism, perceived stress, depression, and anxiety (Sumi, 2013, 2014).

(5) Eudaimonic well-being

Eudaimonic well-being was assessed using the Japanese version of the Flourishing Scale (Diener et al., 2010; Sumi, 2013, 2014), which consists of eight items that tap into positive functioning in areas important for psychological well-being, including supportive relationships, self-acceptance, optimism, and meaning and purpose in life (e.g., "I lead a purposeful and meaningful life."). The items were scored on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The Japanese version has a unidimensional structure, internal consistency reliability (Cronbach's α s = .94 to .95), test-retest reliability over a 1-month period (r = .87), and construct validity based on correlations with scores for positive and negative feelings, life satisfaction, subjective happiness, dispositional optimism and pessimism, perceived stress, depression, and anxiety (Sumi, 2013, 2014).

(6) Perceived stress

The Japanese version of the 10-item form of the Perceived Stress Scale to assess perceived stress (Cohen, Kamarack, & Mermelstein, 1983; Cohen & Williamson, 1988; Sumi, 2007a) was used. The items measure the perception of psychological stress over the past month (e.g., "In the last month, how often have you felt that you were on top of things?"), including four negatively worded items scored on a 5-point scale ranging from 0 (*never*) to 4 (*very often*). The Japanese version has the same two-factor structure as the original measure, internal consistency reliability (Cronbach's α = .71), test-retest reliability over a 3-week period (r = .72), and discriminant and predictive validity based on correlations with scores for daily hassles, depression, anxiety, and psychosomatic symptoms using longitudinal data over a 3-week period (Sumi, 2007).

(7) Depression and anxiety

The Japanese versions of the two subscales of the Hopkins Symptom Checklist (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974; Sumi, 1997) were used to assess depression and anxiety. The depression and anxiety subscales consist of 11 (e.g., "Feeling no interest in things") and seven items (e.g., "Feeling tense or keyed up."), respectively. Both subscales measure the frequency of symptoms during the past seven days on a 5-point scale ranging from 0 (*not at all*) to 4 (*extremely*). The Japanese version of the subscales has a separate factor structure for each subscale, internal consistency reliability (Cronbach's α = .84 for both), test-retest reliability over a 4-week interval (r s = .83 and .75, respectively), and construct validity through correlations with scores for perceived stress (Sumi, 1997, 2007a, 2022).

3. RESULTS

3.1. Factor Structure

To conduct a factor analysis of the BRS-J, participants were randomly and equally divided into two groups (n s = 138 each): Samples A and B. Samples A and B were used for

exploratory and confirmatory factor analyses, respectively, to avoid overfitting. There was no significant difference between the samples in sex, $\chi^2(1, N = 276) = .20, ns$, and age, $t(232) = .09, ns$. For Samples A and B, the Kaiser-Meyer-Olkin test of sampling adequacy were .84 and .86, respectively, and Bartlett's test of sphericity was 454.65 and 5446.59 ($dfs = 15, ps < .01$), respectively. These results indicated that the data collected were appropriate for factor analysis. An exploratory factor analysis using principal axis factoring was conducted on Sample A. The eigenvalues of the first four factors were 3.61, 0.91, 0.71, and 0.38, in that order. The results showed that only one factor was extracted with an eigenvalue greater than 1.0. This factor accounted for 60.16% of the total variance. As shown in Table 1, all items had absolute factor loadings of .39 or higher.

Table 1.
Factor Loadings for Exploratory and Confirmatory Factor Analyses.

Item	Exploratory Factor Analysis of Sample A	Confirmatory Factor Analysis of Sample B
1	.83	.92
2	-.76	-.67
3	.90	.91
4	-.86	-.81
5	.54	.63
6	-.39	-.49
Method Factor		
2	–	.96
4	–	.18
6	–	.15

Note: Confirmatory factor analysis was conducted for the bifactor model with a general factor and a method factor (negative wording). All standardized factor loadings shown in the confirmatory factor analysis are significant at $p < .01$.

Confirmatory factor analyses were performed on Sample B to evaluate the four-factor models of the BRS-J. Table 2 shows the goodness-of-fit indices of the models. According to the goodness-of-fit criteria (Brown, 2006; Byrne, 2001), the bifactor model with general and method factors provided an acceptable fit to the data, as indicated by the RMSEA, NFI, CFI, AGFI, and SRMR values (.077, .971, .985, .906, and .046, respectively). Moreover, this model had the lowest AIC and BIC values (42.279 and 80.333, respectively) among the models. The other models showed goodness-of-fit indices indicating a poor fit, with RMSEA value exceeding .10 and AGFI value below .90. Table 1 also showed that all standardized factor loadings were significant ($ps < .01$). The factor loadings of Item 5 were sufficient for both exploratory and confirmatory factor analyses (.54 and .63, respectively).

3.2. Reliability

Table 3 presents the mean, standard deviation, and reliability coefficient. BRS-J scores ranged from 1.33 to 5.00. Both Cronbach's α and McDonald's ω of the BRS-J showed high values (.88 and .89, respectively). The test-retest correlation between the BRS-J scores at Times 1 and 2 was high ($r = .58, 95\% \text{ CI } [.50, .66], p > .01$).

Table 2.
Values of Goodness-of-Fit Indices in Confirmatory Factor Analyses.

Model	χ^2 (df)	RMSEA	NFI	CFI	AGFI	SRMR	AIC	BIC
1	29.99 (9) **	.130	.946	.961	.854	.042	53.992	89.119
2	19.85 (8) *	.104	.964	.978	.885	.040	45.851	83.905
3	16.28 (8) *	.077	.971	.985	.906	.046	42.279	80.333
4	15.35 (6) *	.107	.972	.983	.879	.039	45.350	89.259

Note: Model 1 = one-factor model; Model 2 = correlated two-factor model; Model 3 = bifactor model with a general factor and a method factor (negative wording); and Model 4 = bifactor model with a general factor and two method factors (negative and positive wording).

* $p < .05$. ** $p < .01$.

Table 3.
Means, Standard Deviations, Reliability Coefficients, and Correlations between Scores on the BRS-J and the Other Measures.

Measure	<i>M</i>	<i>SD</i>	α	ω	<i>r</i>	95% CI
BRS-J	3.15	0.87	.88	.89	—	—
Cognitive Approach Coping scale	17.98	3.99	.80	.80	.28	[.19, .37]
Behavioral Approach Coping scale	14.46	4.34	.77	.76	.30	[.21, .39]
Avoidance Approach Coping scale	12.95	4.10	.73	.73	-.19	[-.28, -.09]
Short Grit Scale	3.04	0.80	.89	.87	.29	[.18, .40]
Satisfaction with Life Scale	19.46	5.69	.77	.77	.33	[.22, .43]
Positive Affect scale	22.25	4.59	.93	.93	.41	[.30, .50]
Negative Affect scale	15.50	4.83	.84	.83	-.41	[-.50, -.30]
Flourishing Scale	36.94	7.45	.82	.81	.50	[.40, .58]
Perceived Stress Scale	19.71	6.38	.79	.72	-.41	[-.51, -.31]
Depression scale	15.33	9.08	.88	.88	-.47	[-.55, -.37]
Anxiety scale	7.31	5.74	.86	.86	-.35	[-.45, -.24]

Note: α = Cronbach's α . ω = McDonald's ω . All correlations are significant at $p < .01$.

3.3. Construct Validity

Table 3 also includes the correlation coefficients between scores on the BRS-J and other related measures. Overall, these correlation coefficients supported the hypothesized relationships between the scores, indicating the construct validity of BRS-J. As expected, BRS-J scores were weakly positively correlated with the scores on the Cognitive and Behavioral Approach Coping scales (r s = .28 and .30, respectively). Furthermore, they were weakly negatively correlated with the Avoidance Approach Coping scale (r = -.19). There was a weak positive correlation between BRS-J and Short Grit Scale scores (r = .29). BRS-J scores were moderately positively correlated with scores on the Satisfaction with Life Scale and Positive Affect scales (r s = .33 and .41, respectively) and moderately negatively correlated with scores on the Negative Affect scale as a hedonic well-being measure (r = -.41). A high positive correlation was found between the scores on the BRS-J and the Flourishing Scale as a measure of eudaimonic well-being (r = .50). There were moderate and negative correlations between the BRS-J, Perceived Stress Scale, Depression scale, and Anxiety scale scores (r s = -.47 to -.35).

4. DISCUSSION

This study explored the reliability and construct validity of a new Japanese version of the BRS. The results of the data analysis from a Japanese college student sample preliminarily support the psychometric properties of the BRS-J. The exploratory factor analysis of the BRS-J supported a one-factor structure, similar to the original BRS (Sánchez et al., 2021; Smith et al., 2008) and non-English versions (Coelho et al., 2016; Jacobs & Horsch, 2019; Lai & Yue, 2014). Although several studies have identified two factors corresponding to positively and negatively worded items through exploratory factor analysis (e.g., Ahmad Sabki et al., 2023; Baattaiah et al., 2023; Soer et al., 2019), the present study identified one factor comprising all items.

However, the results of the confirmatory factor analysis supported the bifactor model with a general resilience factor and method factor, and not the one-factor model. This bifactor model was confirmed in the German version of the BRS with a German general population sample (Chmitorz, et al., 2018b), in the same version with a clinical sample with mental disorders (Broll et al., 2024), and in the original version with an Australian general population sample (McKay, Skues, & Williams, 2021). Variations in the factor structure of the BRS can be attributed to cultural, language, and population factors (Jacobs & Horsch, 2019; Sánchez et al., 2021). A bifactor model might have been identified because of some common underlying factors across various studies. The method factor in this bifactor model reflected the wording effect in the BRS-J, including reverse items, rather than the concept of resilience itself (Ahmad Sabki et al., 2023; Baattaiah et al., 2023; Broll et al., 2024; Rodriguez-Rey et al., 2016). In addition, although several previous studies excluded Item 5 (e.g., Coelho et al., 2016; Minh Nguyen et al., 2024), the results of the factor analysis found no grounds for omitting Item 5. Therefore, the BRS-J scores were calculated using all items based on the general resilience factor.

The internal consistency reliability of the BRS-J was good (DeVellis & Thorpe, 2021; Nunnally & Bernstein, 1994). The test-retest reliability was adequate based on the high test-retest correlation over a 1-month interval. BRS-J showed satisfactory internal consistency and temporal stability over a shorter period.

Correlations between BRS-J and the related scale scores, including their directions, were generally as expected for construct validity. BRS-J scores were weakly correlated with coping scores, which are especially important for the ability to recover from stress (Smith et al., 2010), and with grit, which is closely related to resilience (Cheng et al., 2023; Duckworth, 2017; Stoffel & Cain, 2018; Wang, 2021). Correlations between the scores for the components of hedonic and eudaimonic well-being were moderate to high. The scores for ill-being, specifically perceived stress, depression, and anxiety, were moderately and negatively correlated with BRS-J scores. All correlations indicated convergence and discrimination between BRS-J and the related measures.

Although this study provides a new Japanese version of the BRS, several limitations must be noted that will guide future research. The first is the use of only a sample of college students. Generalization of the present findings to other populations should be performed with caution. It is necessary to further examine other populations, such as workers, older adults, and clinical samples. The second limitation is the time interval for test-retest reliability. Further studies are needed to confirm the temporal stability of BRS-J at intervals longer than 1 month. The third limitation involves evaluating construct validity by examining correlations with related constructs. Additional studies should explore other forms of validity, such as predictive and concurrent validity. Although the limitations of this study should be carefully considered, the results provide preliminary support for BRS-J as a reliable and valid

measure for assessing the ability of Japanese-speaking people to bounce back or recover from stress. This brief measure will contribute to future research on resilience in Japan, including clinical screenings, educational settings, and cross-cultural studies.

REFERENCES

- Ahmad Sabki, Z., Kim, L. H., Danaee, M., Sulaiman, A. H., Razali, K. A., Koh, O. H., ... & Francis, B. (2023). Assessment of psychometric properties of the Malay version of the Brief Resilience Scale (BRS-M) among non-academic staff working from home during COVID-19 in Malaysia. *Healthcare, 11*, Article 1146. <https://doi.org/10.3390/healthcare11081146>
- American Psychological Association. (2014). *The road to resilience: From the American Psychological Association*. Retrieved from <https://advising.unc.edu/wp-content/uploads/sites/341/2020/07/The-Road-to-Resiliency.pdf>
- Baattaiah, B. A., Alharbi, M. D., Fayaz Khan, A., & Aldhahi, M. I. (2023). Translation and population-based validation of the Arabic version of the brief resilience scale. *Annals of Medicine, 55*(1), Article 2230887. <https://doi.org/10.1080/07853890.2023.2230887>
- Bardoel, E. A., & Drago, R. (2021). Acceptance and strategic resilience: An application of conservation of resources theory. *Group & Organization Management, 46*(4), 657-691. <https://doi.org/10.1177/10596011211022488>
- Beaton, D. E., Bombardier, C., Guillemin, F., & Ferraz, M. B. (2000). Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine, 25*(24), 3186-3191. <https://doi.org/10.1097/00007632-200012150-00014>
- Bertsia, V., & Poulou, M. (2023). Resilience: Theoretical Framework and Implications for School. *International Education Studies, 16*(2), 1-12. <https://doi.org/10.5539/ies.v16n2p1>
- Billings, A. G., & Moos, R. H. (1981). The role of coping responses and social resources in attenuating the stress of life events. *Journal of Behavioral Medicine, 4*, 139-157. <https://doi.org/10.1007/BF00844267>
- Block, J., & Kremen, A. M. (1996). IQ and ego-resiliency: Conceptual and empirical connections and separateness. *Journal of Personality and Social Psychology, 70*(2), 349-361.
- Bonanno, G. A., Romero, S. A., & Klein, S. I. (2015). The temporal elements of psychological resilience: An integrative framework for the study of individuals, families, and communities. *Psychological Inquiry, 26*(2), 139-169. <https://doi.org/10.1080/1047840X.2015.992677>
- Brislin, R. W. (1986). The wording and translation of research instruments. In W. J. Lonner & J. W. Berry (Eds.), *Field methods in cross-cultural research* (pp. 137-164). Beverly Hills, CA: Sage.
- Broll, J., Schafer, S. K., Chmitorz, A., Meule, A., Voderholzer, U., Helmreich, I., & Lieb, K. (2024). Psychometric properties of the German version of the brief resilience scale in persons with mental disorders. *BMC Psychiatry, 24*(1), Article 631. <https://doi.org/10.1186/s12888-024-06062-x>
- Brown, T. (2006). *Confirmatory factor analysis for applied research*. New York, NY: Guilford.
- Byrne, B. M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. New York, NY: Lawrence Erlbaum.
- Campbell-Sills, L., & Stein, M. B. (2007). Psychometric analysis and refinement of the Connor-Davidson Resilience Scale (CD-RISC): Validation of a 10-item measure of resilience. *Journal of Traumatic Stress, 20*(6), 1019-1028. <https://doi.org/10.1002/jts.20271>
- Cheng, E. H., Kam, C. C. S., & Cui, T. (2023). Revisiting grit: How much does it overlap with resilience?. *International Journal of Educational Research, 119*, Article 102187. <https://doi.org/10.1016/j.ijer.2023.102187>
- Chmitorz, A., Kunzler, A., Helmreich, I., Tuscher, O., Kalisch, R., Kubiak, T., ... Lieb, K. (2018a). Intervention studies to foster resilience? A systematic review and proposal for a resilience framework in future intervention studies. *Clinical Psychology Review, 59*, 78-100. <https://doi.org/10.1016/j.cpr.2017.11.002>

- Chmitorz, A., Wenzel, M., Stieglitz, R. D., Kunzler, A., Bagusat, C., Helmreich, I., ... Tüscher, O. (2018b). Population-based validation of a German version of the Brief Resilience Scale. *PLOS ONE*, 13(2), Article e0192761. <https://doi.org/10.1371/journal.pone.0192761>
- Coelho, G. L. H., Cavalcanti, T. M., Rezende, A. T., & Gouveia, V. V. (2016). Brief Resilience Scale: Testing its factorial structure and invariance in Brazil. *Universitas Psychologica*, 15(2), 397-408. <https://doi.org/10.11144/Javeriana.upsy15-2.brst>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum. <https://doi.org/10.4324/9780203771587>
- Cohen, S., Kamarack, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24(4), 385-396. <https://doi.org/10.2307/2136404>
- Cohen, S., & Williamson, G. M. (1988). Perceived stress in a probability sample of the United States. In S. Spacapan, & S. Oskamp (Eds.), *The social psychology of health* (pp. 31-67). Newbury Park, CA: Sage.
- Connor, K. M., & Davidson, J. R. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, 18(2), 76-82. <https://doi.org/10.1002/da.10113>
- Cutuli, J. J., Herbers, J. E., Masten, A. S., & Reed, M.-G. (2021). Resilience in development. In C. R. Snyder, S. J. Lopez, L. M. Edwards, & S. C. Marques (Eds.), *The Oxford handbook of positive psychology* (3rd ed., pp. 171-188). New York, NY: Oxford University Press.
- Datu, J. A. D. (2021). Beyond passion and perseverance: Review and future research initiatives on the science of grit. *Frontiers in Psychology*, 11, Article 545526. <https://doi.org/10.3389/fpsyg.2020.545526>
- De Vaus, D. (2013). *Surveys in Social Research* (6th ed.). London, UK: Routledge. <https://doi.org/10.4324/9780203519196>
- Denckla, C. A., Cicchetti, D., Kubzansky, L. D., Seedat, S., Teicher, M. H., Williams, D. R., & Koenen, K. C. (2020). Psychological resilience: An update on definitions, a critical appraisal, and research recommendations. *European Journal of Psychotraumatology*, 11(1). <https://doi.org/10.1080/20008198.2020.1822064>
- Derogatis, L. R., Lipman, R. S., Rickels, K., Uhlenhuth, E. H., & Covi, L. (1974). The Hopkins Symptom Checklist (HSCL): A self-report symptom inventory. *Behavioral Science*, 19(1), 1-15. <https://doi.org/10.1002/bs.3830190102>
- DeVellis, R. F., & Thorpe, C. T. (2021). *Scale development: Theory and applications* (5th ed.). Thousand Oaks, CA: Sage.
- 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
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125(2), 276-302. <https://doi.org/10.1037/0033-2909.125.2.276>
- Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D., Oishi, S., & Biswas-Diener, R. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research*, 97(2), 143-156. <https://doi.org/10.1007/s11205-009-9493-y>
- Duckworth, A. L. (2017). *Grit: Why passion and resilience are the secrets to success*. London, England: Penguin Random House.
- Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology*, 92(6), 1087-1101. <https://doi.org/10.1037/0022-3514.92.6.1087>
- Duckworth, A. L., & Quinn, P. D. (2009). Development and validation of the Short Grit Scale (GRIT-S). *Journal of Personality Assessment*, 91(2), 166-174. <https://doi.org/10.1080/00223890802634290>
- Duckworth, A. L., Quinn, P. D., & Tsukayama, E. (2021). Revisiting the factor structure of grit: A commentary on Duckworth and Quinn (2009). *Journal of Personality Assessment*, 103(5), 573-575. <https://doi.org/10.1080/00223891.2021.1942022>
- Fletcher, D., & Sarkar, M. (2012). A grounded theory of psychological resilience in Olympic 13 champions. *Psychology of Sport and Exercise*, 13(5), 669-678. <https://doi.org/10.1016/j.psychsport.2012.04.007>

- Fletcher, D., & Sarkar, M. (2013). Psychological resilience: A review and critique of definitions, concepts and theory. *European Psychologist*, 18(1), 12-23. <https://doi.org/10.1027/1016-9040/a000124>
- Friborg, O., Hjemdal, O., Rosenvinge, J. H., & Martinussen, M. (2003). A new rating scale for adult resilience: What are the central protective resources behind healthy adjustment?. *International Journal of Methods in Psychiatric Research*, 12(2), 65-76. <https://doi.org/10.1002/mpr.143>
- Fullerton, D. J., Zhang, L. M., & Kleitman, S. (2021). An integrative process model of resilience in an academic context: Resilience resources, coping strategies, and positive adaptation. *PLOS ONE*, 16(2), Article e0246000. <https://doi.org/10.1371/journal.pone.0246000>
- Furstova, J., Kascakova, N., Polackova Solcova, I., Hasto, J., & Tavel, P. (2021). How Czecho-Slovakia bounces back: Population-based validation of the Brief Resilience Scale in two central European countries. *Psychological Reports*, 125(5), 2807-2827. <https://doi.org/10.1177/00332941211029619>
- Gu, H., Wen, Z., & Fan, X. (2017). Examining and controlling for wording effect in a self-report measure: A Monte Carlo simulation study. *Structural Equation Modeling*, 24(4), 545-555. <https://doi.org/10.1080/10705511.2017.1286228>
- Haktanir, A., Lenz, A. S., Can, N., & Watson, J. C. (2016). Development and evaluation of Turkish language versions of three positive psychology assessments. *International Journal for the Advancement of Counselling*, 38, 286-297. <https://doi.org/10.1007/s10447-016-9272-9>
- Hata, U., & Onodera, A. (2013). Ego-Resiliency shakudo Nihon-go ban sakusei to shinrai-sei datou-sei no kento [Development and validation of a Japanese version of the Ego-Resiliency Scale (ER89)]. *Pasonaritei Kenkyu*, 22(1), 37-47. <https://doi.org/10.2132/personality.22.37>
- Herrman, H., Stewart, D. E., Diaz-Granados, N., Berger, E. L., Jackson, B., & Yuen, T. (2011). What is resilience?. *The Canadian Journal of Psychiatry*, 56(5), 258-265. <https://doi.org/10.1177/070674371105600504>
- Hidalgo-Rasmussen, C. A., & González-Betanzos, F. (2019). The treatment of acquiescence and the factorial structure of the brief resilience scale (BRS) in Mexican and Chilean University students. *Anales de Psicología*, 35(1), 26-32. <http://dx.doi.org/10.6018/analesps.35.1.297781>
- Hiebel, N., Rabe, M., Maus, K., Peusquens, F., Radbruch, L., & Geiser, F. (2021). Resilience in adult health science revisited: A narrative review synthesis of process-oriented approaches. *Frontiers in Psychology*, 12, Article 659395. <https://doi.org/10.3389/fpsyg.2021.659395>
- Hjemdal, O., Friborg, O., Stiles, T. C., Martinussen, M., & Rosenvinge, J. H. (2006). A new scale for adolescent resilience: Grasping the central protective resources behind healthy development. *Measurement and evaluation in Counseling and Development*, 39(2), 84-96. <https://doi.org/10.1080/07481756.2006.11909791>
- Jacobs, I., & Horsch, A. (2019). Psychometric properties of the French brief resilience scale. *European Journal of Health Psychology*, 26(1), 1-9. <https://doi.org/10.1027/2512-8442/a000022>
- Jones, L. (2019). Resilience isn't the same for all: Comparing subjective and objective approaches to resilience measurement. *Wiley Interdisciplinary Reviews: Climate Change*, 10(1), Article e552. <https://doi.org/10.1002/wcc.552>
- Judijanto, L. (2025). The Dynamics of Psychological Resilience Study in Last Two Decades. *The Eastasouth Journal of Social Science and Humanities*, 2(2), 119-129. <https://doi.org/10.58812/esssh.v2i02.475>
- Kalisch, R., Baker, D. G., Basten, U., Boks, M. P., Bonanno, G. A., Brummelman, E., ... Kleim, B. (2017). The resilience framework as a strategy to combat stress-related disorders. *Nature Human Behaviour*, 1, 784-790. <https://doi.org/10.1038/s41562-017-0200-8>
- Kalisch, R., Muller, M. B., & Tuscher, O. (2015). A conceptual framework for the neurobiological study of resilience. *Behavioral and Brain Sciences*, 38, Article e92. <https://doi.org/10.1017/S0140525X1400082X>
- Kim, J., Jeong, H. G., Lee, M. S., Lee, S. H., Jeon, S. W., & Han, C. (2023). Reliability and validity of the Korean version of the brief resilience scale. *Clinical Psychopharmacology and Neuroscience*, 21(4), 732-741. <https://doi.org/10.9758/cpn.23.1049>
- Lai, J. C., & Yue, X. (2014). Using the Brief Resilience Scale to assess Chinese people's ability to bounce back from stress. *Sage Open*, 4(4). <https://doi.org/10.1177/2158244014554386>

- Liu, J. J., Reed, M., & Girard, T. A. (2017). Advancing resilience: An integrative, multi-system model of resilience. *Personality and Individual Differences*, 111, 111-118. <https://doi.org/10.1016/j.paid.2017.02.007>
- Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development*, 71(3), 543-562. <https://doi.org/10.1111/1467-8624.00164>
- Masten, A. S., Lucke, C. M., Nelson, K. M., & Stallworthy, I. C. (2021). Resilience in development and psychopathology: Multisystem perspectives. *Annual Review of Clinical Psychology*, 17, 521-549. <https://doi.org/10.1146/annurev-clinpsy-081219-120307>
- McKay, S., Skues, J. L., & Williams, B. J. (2021). Does the Brief Resilience Scale actually measure resilience and succumbing? Comparing artefactual and substantive models. *Advances in Mental Health*, 19(2), 192-201. <https://doi.org/10.1080/18387357.2019.1688667>
- Minh Nguyen, T., Tran, M. A. Q., & Hoang Le, G. N. (2023). Psychometric validation of the Brief Resilience Scale in the sample of Vietnamese university student. *Journal of College Student Mental Health*, 38(3), 648-663. <https://doi.org/10.1080/87568225.2023.2231348>
- Muenks, K., Wigfield, A., Yang, J. S., & O'Neal, C. R. (2017). How true is grit? Assessing its relations to high school and college students' personality characteristics, self-regulation, engagement, and achievement. *Journal of Educational Psychology*, 109(5), 599-620. <https://doi.org/10.1037/edu0000153>
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed). New York, NY: McGraw-Hill.
- Pangallo, A., Zibarras, L., Lewis, R., & Flaxman, P. (2015). Resilience through the lens of interactionism: A systematic review. *Psychological Assessment*, 27(1), 1-20. <https://doi.org/10.1037/pas0000024>
- Price, R. A. (2023). A review of resilience in higher education: Toward the emerging concept of designer resilience. *Studies in Higher Education*, 48(1), 83-99. <https://doi.org/10.1080/03075079.2022.2112027>
- Rodríguez-Rey, R., Alonso-Tapia, J., & Hernansaiz-Garrido, H. (2016). Reliability and validity of the Brief Resilience Scale (BRS) Spanish Version. *Psychological Assessment*, 28(5), e101-e110. <https://doi.org/10.1037/pas0000191>
- Salisu, I., & Hashim, N. (2017). A critical review of scales used in resilience research. *IOSR Journal of Business and Management*, 19(4), 23-33. <https://doi.org/10.9790/487X-1904032333>
- Sánchez, J., Estrada-Hernández, N., Booth, J., & Pan, D. (2021). Factor structure, internal reliability, and construct validity of the Brief Resilience Scale (BRS): A study on persons with serious mental illness living in the community. *Psychology and Psychotherapy: Theory, Research and Practice*, 94(3), 620-645. <https://doi.org/10.1111/papt.12336>
- Sisto, A., Vicinanza, F., Campanozzi, L. L., Ricci, G., Tartaglini, D., & Tambone, V. (2019). Towards a transversal definition of psychological resilience: A literature review. *Medicina*, 55(11), Article 745. <https://doi.org/10.3390/medicina55110745>
- Smith, B. W. (2021). *Move from surviving to thriving: The positive psychology workbook for challenging times*. Seattle, WA: Kindle Direct. <https://doi.org/10.25844/qq9-4160>
- Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: assessing the ability to bounce back. *International Journal of Behavioral Medicine*, 15(3), 194-200. <https://doi.org/10.1080/10705500802222972>
- Smith, B. W., Tooley, E. M., Christopher, P. J., & Kay, V. S. (2010). Resilience as the ability to bounce back from stress: A neglected personal resource? *The Journal of Positive Psychology*, 5(3), 166-176. <https://doi.org/10.1080/17439760.2010.482186>
- Soer, R., Six Dijkstra, M. W., Bieleman, H. J., Stewart, R. E., Reneman, M. F., Oosterveld, F. G., & Schreurs, K. M. (2019). Measurement properties and implications of the Brief Resilience Scale in healthy workers. *Journal of Occupational Health*, 61(3), 242-250. <https://doi.org/10.1002/1348-9585.12041>

- Sousa, V. D., & Rojjanasrirat, W. (2011). Translation, adaptation and validation of instruments or scales for use in cross-cultural health care research: A clear and user-friendly guideline. *Journal of Evaluation in Clinical Practice*, 17(2), 268-274. <https://doi.org/10.1111/j.1365-2753.2010.01434.x>
- Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., & Yehuda, R. (2014). Resilience definitions, theory, and challenges: interdisciplinary perspectives. *European Journal of Psychotraumatology*, 5(s4). <https://doi.org/10.3402/ejpt.v5.25338@zept20.2014.5.issue-s4>
- Stainton, A., Chisholm, K., Kaiser, N., Rosen, M., Upthegrove, R., Ruhrmann, S., & Wood, S. J. (2019). Resilience as a multimodal dynamic process. *Early Intervention in Psychiatry*, 13(4), 725-732. <https://doi.org/10.1111/eip.12726>
- Stoffel, J. M., & Cain, J. (2018). Review of grit and resilience literature within health professions education. *American Journal of Pharmaceutical Education*, 82(2), Article 6150. <https://doi.org/10.5688/ajpe6150>
- Sumi, K. (1997). Optimism, social support, stress and physical and psychological well-being in Japanese women. *Psychological Reports*, 81(1), 299-306. <https://doi.org/10.2466/pr0.1997.81.1.299>
- Sumi, K. (1999). Taisho, pasonaritei to chikaku-sareta stress no kankei [Relationship between coping, personality and perceived stress]. *Kyouiku Igaku*, 44(3), 500-536.
- Sumi, K. (2007a). Chikaku-sareta sutoresu shakudo (Perceived Stress Scale) Nihongo-ban ni okeru shinrai-sei to datou-sei no kentou [Reliability and validity of the Japanese version of the Perceived Stress Scale]. *Kenkou Shinrigaku Kenkyu*, 19(2), 44-53. https://doi.org/10.11560/jahp.19.2_44
- Sumi, K. (2007b). Development and validation of the Coping Inventory for the Japanese (CIJ). In L. S. Boyar (Ed.), *New psychological tests and testing research*. (pp. 35-61). Hauppauge, NY: Nova Science.
- Sumi, K. (2013). Reliability and validity of Japanese versions of the Flourishing Scale and the Scale of Positive and Negative Experience. *Social Indicators Research*, 118(2), 601-615. <https://doi.org/10.1007/s11205-013-0432-6>
- Sumi, K. (2014). Temporal stability of the Japanese versions of the Flourishing Scale and the Scale of Positive and Negative Experience. *Journal of Psychology and Psychotherapy*, 4(2), Article 140. <https://doi.org/10.4172/2161-0487.1000140>
- Sumi, K. (2020). Uerubiingu to shakai-teki mondai kaiketsu nouryoku ni okeru sogo eikyo-sei: Daigaku-sei no judan deta wo mochiita kento [The reciprocal influence of well-being and social problem-solving abilities: An analysis of longitudinal data from college students]. *Kyouiku Igaku*, 66(1), 37-46. https://doi.org/10.32311/jsehs.66.1_41
- Sumi, K. (2022). A Japanese version of the Tendency to Forgive Scale: Translation, reliability and construct validity. In C. Pracana, & M. Wang (Eds.), *Psychology Applications & Developments VIII* (pp. 27-37). Lisbon, Portugal: inScience Press. <https://doi.org/10.36315/2022padVIII03>
- Sumi, K. (2024). Japanese translation and validation of the Short Grit Scale (Grit-S). In C. Pracana, & M. Wang (Eds.), *Psychology Applications & Developments X* (pp. 287-302). Lisbon, Portugal: inScience Press. <https://doi.org/10.36315/2024padX24>
- Tokuyoshi, Y., & Moriya, M. (2015, September). *Development and validation of the Brief Resilience Scale Japanese version (BRS-J)*. Paper presented at the 79th Annual Convention of the Japanese Psychological Association, Nagoya, Japan. https://doi.org/10.4992/pacjpa.79.0_1EV-055
- Troy, A. S., Willroth, E. C., Shallcross, A. J., Giuliani, N. R., Gross, J. J., & Mauss, I. B. (2023). Psychological resilience: an affect-regulation framework. *Annual Review of Psychology*, 74(1), 547-576. <https://doi.org/10.1146/annurev-psych-020122-041854>
- Ungar, M., & Theron, L. (2019). Resilience and mental health: How multisystemic processes contribute to positive outcomes. *The Lancet Psychiatry*, 7(5), 441-448. [https://doi.org/10.1016/s2215-0366\(19\)30434-1](https://doi.org/10.1016/s2215-0366(19)30434-1)
- Vella, S. L. C., & Pai, N. B. (2019). A theoretical review of psychological resilience: Defining resilience and resilience research over the decades. *Archives of Medicine and Health Sciences*, 7(2), 233-239. https://doi.org/10.4103/amhs.amhs_119_19

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- Wagnild, G., & Young, H. M. (1993). Development and psychometric evaluation of the Resilience Scale. *Journal of Nursing Measurement*, 1(2), 165-178.
- Wang, L. (2021). The role of students' self-regulated learning, grit, and resilience in second language learning. *Frontiers in Psychology*, 12, Article 800488. <https://doi.org/10.3389/fpsyg.2021.800488>
- Windle, G. (2011). What is resilience? A review and concept analysis. *Reviews in Clinical Gerontology*, 21, 152-169. <https://doi.org/10.1017/S0959259810000420>
- Windle, G., Bennett, K. M., & Noyes, J. (2011). A methodological review of resilience measurement scales. *Health Qual Life Outcomes*, 9, Article 8. <https://doi.org/10.1186/1477-7525-9-8>
- Xu, M., & Leung, S.-O. (2016). Bifactor structure for the categorical Chinese Rosenberg Self-Esteem Scale. *The Spanish Journal of Psychology*, 19, Article E67. <https://doi.org/10.1017/sjp.2016.66>
- Yang, F. M., & Jones, R. N. (2008). Measurement differences in depression: chronic health-related and sociodemographic effects in older Americans. *Biopsychosocial Science and Medicine*, 70(9), 993-1004. <https://doi.org/10.1097/PSY.0b013e31818ce4fa>

KEY TERMS & DEFINITIONS

Following Cohen (1988) and De Vaus (2013), correlation coefficients were classified as low (0.10 to 0.29), moderate (0.30 to 0.49), high (0.50 to 0.69) very high (0.70 to 0.89).

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