



The Psychometric Properties of the 14-Item Resilience Scale (RS-14)

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Abstract

This study's purpose was to determine the factor structure of the 14-Item Resilience Scale. The RS-14 was administered to two samples as part of a larger battery. The first sample was comprised of adults seeking mental health services following the Gulf Oil Spill. The second sample was comprised of undergraduates from a medium-sized, southern university. Confirmatory factor analyses were conducted on each sample's scores, supporting a single distinct factor. RS-14 scores were also reliable and correlated in the expected direction with measures of well-being and psychopathology.

Purpose of This Study

- Resilience is "the ability to bounce back or recover from stress" (Smith et al., 2008, p. 194).
- The 14-Item Resilience Scale (RS-14; Wagnild, 2011) was developed by retaining the most reliable items from the 25-Item Resilience scale (RS; Wagnild & Young, 1993).
- The original RS was designed to measure resilience, based on a study of people who demonstrated effective coping following significant loss (Wagnild & Young, 1993).
- From this research, Wagnild and Young (1990, 1993) identified five essential characteristics of resilience (i.e., self-reliance, purposeful life, equanimity, perseverance, and existential aloneness) which function as the conceptual basis for the RS and the RS-14.
- The RS-14 utilizes a Likert-type response format ranging from 1 (strongly disagree) to 7 (strongly agree). Item responses are summed. Total scores range from 14 to 98 with higher scores indicating higher levels of resilience.
- RS-14 scores are negatively correlated with measures of depression and disability and are positively correlated with measures of self-esteem, social support, and self-reported good health (Nishi et al., 2010; Wagnild, 2009).
- RS-14 scores also have high internal consistency, often .90 and above (Wagnild, 2011).
- Significantly more research has been conducted with the RS than the RS-14. Available data suggest that the two forms are highly correlated ($r = .97, p < .0001$; Wagnild, 2011). This correlation may lead one to presume similar validity of scores across measures. However, more research is needed to support this assumption.
- Because resilience has been found to protect against the stress of negative life events (Wagnild & Young, 1990), it is important to have an instrument that is accurate in its measurement of the construct in order to better understand clients' strengths and inform treatment plans.
- Due to the lack of independent research available on the RS-14, the present study aimed to examine its factor structure. In addition, reliability coefficients and correlations with measures of well-being and psychopathology are calculated to report on the measure's potential psychometric utility.

Hypotheses

- The RS-14 will have one distinct factor, supported by data from two separate samples, specifically a clinical sample affected by the Gulf Oil Spill and a college student sample.
- The RS-14 will yield reliable scores in both samples.
- In both samples, RS-14 scores will be significantly and negatively related to measures of posttraumatic stress, depression, anxiety, and general stress.
- In both samples, RS-14 scores will be positively and significantly related to scores from a measure of perceived meaning in life.

Method

Procedures.

Sample 1:

- Respondents were adults seeking clinical services related to the effects of the Gulf Oil Spill. These sample data were collected through a contract between Dr. Schulenberg and the Mississippi Department of Mental Health. The Mississippi Department of Mental Health funded 19 clinical sites through a grant program made possible by funding from BP p.l.c.
- After obtaining informed consent, respondents were asked to complete a battery of questionnaires via paper-pencil or computerized (Qualtrics) formats.

Sample 2:

- Data were gathered using a screening procedure containing an array of measures to determine eligibility to participate in a variety of psychological studies conducted in a university setting.
- Respondents were predominantly enrolled in Introductory Psychology Courses, and they received course credit or extra credit for their participation.

Measures.

14-Item Resilience Scale (RS-14; Wagnild, 2011)

- 14-item measure used to measure resilience, with high scores indicating high levels of resilience.

21-Item Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995)

- Three 7-item scales that assess depression, anxiety, and stress separately, with high scores indicating high levels of each construct.

- Uses cutoff scores to determine levels of severity.

Posttraumatic Stress Disorder Checklist – Specific Version (PCL-S; Weathers et al., 1994)

- 17-item measure designed to assess the symptoms of PTSD as described in the *DSM-IV* (American Psychiatric Association, 2000).

Purpose in Life test-Short Form (PIL-SF; Schulenberg, Schnetzer, & Buchanan, 2011)

- 4-item measure used to assess perceived meaning in life, with higher scores indicating higher perceived meaning.

Results

Demographics.

- Clinical sample affected by the Gulf Oil Spill: $N = 1032$, 54.8% Female, 68.4% White, Ages ranged from 18 to 79 years, M age = 38.76 ($SD = 12.73$).
- College student sample: $N = 1765$, 57% Female, 68.6% White, Ages ranged from 18 to 48 years, M age = 19.05 ($SD = 2.06$).

Data-Analytic Procedures.

- Assumptions of multivariate statistics (linearity, normality, homogeneity) were analyzed and determined to be satisfactory for both samples. Participants who did not complete the RS-14 were excluded from analyses.
- Exploratory factor analysis was used following the recommendations of Preacher and MacCallum (2003). Scree plot and parallel analyses were examined.
- Reliability and descriptive data were calculated for the measures administered.
- Correlational analyses were conducted to determine the relationship between RS-14 scores and other variables.

Findings.

- Scree plot and parallel analyses indicated that there is one distinct factor within the RS-14 for both the clinical and college student samples, confirming Hypothesis 1.
- For the clinical sample affected by the Gulf Oil Spill, the one-factor model explained 53.2% of the variance. For the college student sample, the one-factor model explained 67.6% of the variance.
- For both samples, the one-factor model had good fit indices with all items loading onto the factor.
- Please refer to Tables 1 and 2 for item descriptions, factor loadings, and fit indices.

Table 1. Item descriptions and factor loadings for the clinical and college student samples

Question	Item Content	Factor Loadings	
		Clinical Sample	College Sample
1	Ability to Cope	0.575	0.721
2	Pride	0.668	0.845
3	Acceptance	0.645	0.801
4	Self-love	0.660	0.779
5	Organized	0.640	0.772
6	Drive	0.751	0.870
7	Perseverance	0.765	0.792
8	Willpower	0.704	0.812
9	Involvement	0.736	0.839
10	Humor	0.695	0.816
11	Self-efficacy	0.778	0.800
12	Dependable	0.667	0.804
13	Purpose	0.756	0.812
14	Resourcefulness	0.799	0.828

Table 2. Exploratory factor model fit indices for the clinical and college student samples

EFA Models	RMSEA	NNFI	CFI	SRMR	Alpha
Clinical Sample	0.09	0.90	0.92	0.05	0.94
College Sample	0.11	0.92	0.93	0.04	0.97

- Prior to analyzing the relationship between RS-14 scores and the other measures administered, basic psychometric data were calculated for the RS-14, the PCL-S, the DASS, and the PIL-SF.
- For both samples, the patterns of scores were as expected and the alpha coefficients for the RS-14 (Hypothesis 2) and the other measures ranged from acceptable to highly reliable.
- Please refer to Table 3 for mean scores, standard deviations, and coefficient alphas.

Table 3. Mean scores, standard deviations, and coefficient alphas for the RS-14, PCL-S, DASS, and PIL-SF for both samples

Measure	Clinical Sample			College Sample		
	Mean	SD	Alpha	Mean	SD	Alpha
RS-14	63.11	19.87	.93	74.88	17.05	.96
PCL-S	40.77	19.16	.97	33.02	13.95	.95
DASS-Depression	13.92	12.84	.94	10.11	3.72	.88
DASS-Anxiety	11.60	11.25	.89	9.81	3.20	.79
DASS-Stress	16.26	12.32	.92	11.69	3.92	.83
PIL-SF	18.86	5.38	.88	22.26	4.65	.90

- RS-14 scores significantly and negatively correlated with posttraumatic stress, depression, anxiety, and stress scores.
- RS-14 scores significantly and positively correlated with perceived meaning in life scores.
- Patterns of correlation support Hypotheses 3 and 4 (please see Table 4).

Table 4. Correlations between the RS-14 and measures of well-being (clinical and college student samples)

	PCL-S	DASS-Dep.	DASS-Anxiety	DASS-Stress	PIL-SF
Clinical Sample	-.251	-.401	-.278	-.305	.667
College Sample	-.337	-.286	-.222	-.183	.689

Note: All coefficients are significant at $p < .001$. Dep. = Depression.

Discussion

- This study examined the factor structure of the 14-Item Resilience Scale (RS-14).
- Exploratory factor analyses suggest one-factor models for both clinical and college student samples.
- All items loaded cleanly ($>.300$) onto a single factor, indicating cohesive structure for a one-factor model.
- RS-14 scores were highly reliable in both samples.
- Observed in both samples, and as predicted, higher levels of resilience were associated with higher levels of perceived life meaning and lower levels of posttraumatic stress, depression, anxiety, and general stress.
- The data from this study support the factor structure of the RS-14. The measure is comprised of one distinct factor. The data also offer support for the reliability and validity of scores in both clinical and college student samples.
- A limitation of this study is the lack of heterogeneity within both samples. Participants were predominantly White and, therefore, respondents from other racial/ethnic backgrounds were underrepresented. It is possible that sample diversity, or lack thereof, could influence the obtained results.
- Future research should include continued study in the area of clinical-disaster psychology to better understand the relationship between the constructs of interest. Such studies have direct relevance for disaster preparedness and intervention efforts.
- The psychometric properties of the RS-14 should be examined in relation to future disasters, including both technological (man-made) and natural, with added focus on increasing sample diversity. A broader body of research will better inform researchers and clinicians in the importance of resilience and the use of this measure.

References

For a complete list of references, please refer to the contact information below.

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