

Development and Psychometric Evaluation of the Resilience Scale

**Gail M. Wagnild, PhD, RN
Heather M. Young, PhD, RN**

This study describes the development and initial psychometric evaluation of the 25-item Resilience Scale (RS) in a sample of 810 community-dwelling older adults. Principal components factor analysis of the RS was conducted followed by oblimin rotation indicating that the factor structure represented two factors (Personal Competence and Acceptance of Self and Life). Positive correlations with adaptational outcomes (physical health, morale, and life satisfaction) and a negative correlation with depression supported concurrent validity of the RS. The results of this study support the internal consistency reliability and concurrent validity of the RS as an instrument to measure resilience.

Resilience as a personality characteristic that moderates the negative effects of stress and promotes adaptation has been a topic of research for a number of years. Frequently, the quality of resilience is attributed to individuals who, in the face of overwhelming adversity, are able to adapt and restore equilibrium to their lives and avoid the potentially deleterious effects of stress (Beardslee, 1989; Bebbington, Sturt, Tennant, & Hurry, 1984; Byrne, et al., 1986; Caplan, 1990; Masten & O'Connor, 1989; O'Connell & Mayo, 1988; Richmond & Beardslee, 1988; Rutter, 1985).

Most studies of resilience have focused on children with fewer studies of resilience among adults. Many of these studies have been efforts to understand how children growing up in adverse circumstances successfully avert later psychiatric disorders (Byrne et al., 1986; Honzik, 1984; Masten & O'Connor, 1989; Richmond & Beardslee, 1988; Smith, Smoll, & Ptacek, 1990; Werner, 1984, 1990; Werner & Smith, 1982; Wilson, 1984). Although there is agreement on the definition of resilience, rarely has resilience per se been measured (Beardslee, 1989). Instead, indicators of adaptive outcomes are described as evidence of resilience, usually in the realm of social and psychological competence (Bebbington et al., 1984; Byrne et al., 1986). The absence of a direct

From the School of Nursing, University of Washington (G. M. Wagnild and H. M. Young).

measure of resilience limits the ability to identify individuals who are resilient or have the capacity for resilience. Also the lack of empirical support for the relationships between resilience and psychosocial adaptation has limited its application and relevancy in nursing. In order to address these concerns and limitations, a Resilience Scale (RS) was developed. The purpose of this study was to describe the development and psychometric evaluation of the RS.

LITERATURE REVIEW

'Resilience' connotes emotional stamina and has been used to describe persons who display courage and adaptability in the wake of life's misfortunes (Wagnild & Young, 1990). Development of this construct has occurred primarily within the field of psychiatry. As a psychoanalytic construct, resilience has been defined as "... the dynamic capacity of an individual to modify his/her modal level of ego-control, in either direction, as a function of the demand characteristics of the environmental context" (Block & Block, 1980, p. 48). Ego-resilience when viewed as a continuum is at one extreme defined as being resourceful, flexible, and having an available repertoire of problem-solving strategies while on the opposite end of the continuum is ego-brittleness implying little flexibility, "... an inability to respond to the dynamic requirements of the situation, a tendency ... to become disorganized when encountering changed circumstances or when under stress, and a difficulty in recouping after traumatic experiences" (p. 48).

Rutter (1987) defined resilience as a buffering factor that protects individuals from psychotic disorders and described resilient individuals as possessing self-esteem, belief in one's own self-efficacy, a repertoire of problem-solving skills, and satisfying interpersonal relationships. Similarly, Richmond and Beardslee (1988), Caplan (1990), Beardslee (1989), and Honzik (1984) described resilience as self-confidence, curiosity, self-discipline, self-esteem, and control over the environment.

Druss and Douglas (1988) described resilient individuals as having unusual courage and optimism in the face of death, illness, and congenital disability. Individuals believed in their own invincibility and focused on positive aspects of their situations. Kadner (1989) conceptualized resilience as an individual's capacity to make a "psycho-social comeback in adversity" and defined resilience as comprising ego strength (the effectiveness of all ego functions in promoting the adaptation of the organism to the environment, Druss & Douglas, 1988), social intimacy, and resourcefulness.

Most studies have suggested that resilient persons tend to manifest adaptive behavior, especially in the areas of social functioning, morale, and somatic health. Wagnild and Young (1990) described resilient older women as being socially active and scoring mid to high on a measure of life satisfaction. The resilient person has also been defined as an individual who does not succumb to illness (Caplan, 1990; O'Connell & Mayo, 1988). Children who are described as resilient tend to be

physically robust (Honzik, 1984) and possess social competence (Byrne et al., 1986). Resilient persons are survivors (Beardsee, 1989).

Most agree that resilience develops over time and that early childhood experiences such as close confiding relationships (Beardslee, 1989), role models who advocated exuberance and self-reliance (Druss & Douglas, 1988), and effective family functioning contribute to later development of resilience (Richmond & Beardslee, 1988). Resilience appears to be fostered by secure current relationships as well (Beardslee, 1989; Richmond & Beardslee, 1988; Rutter, 1985).

The mechanism by which resilience facilitates adaptation has been described as the ability to identify what is stressful, appraise realistically one's capacity for action, and problem solve effectively (Beardslee, 1989; Block & Block, 1980; Caplan, 1990; Rutter, 1985). Repeated mastery in spite of stressors enables individuals to confront new experiences with a sense of competence rather than fear and ineptitude and builds resilience (Caplan, 1990; Druss & Douglas, 1988; Richmond & Beardslee, 1988; Rutter, 1985).

DEVELOPMENT OF THE RESILIENCE SCALE

The purpose of the Resilience Scale (RS) is to identify the degree of individual resilience, considered a positive personality characteristic that enhances individual adaptation. It was initially developed within a sample of older women but is also intended for use with a male population as well as a broad range of ages. The RS was developed from a qualitative study of 24 women who had adapted successfully following a major life event (Wagnild & Young, 1990) and was initially available and pretested in 1988. Participants were prescreened for positive psychosocial adaptation as indicated by mid-to-high levels of morale and social involvement. Each was asked to describe how she managed a self-identified loss. From their narratives, five interrelated components were identified that constitute resilience: equanimity, perseverance, self-reliance, meaningfulness, and existential aloneness.

Definitions and perspectives on resilience were validated and clarified by reviewing literature on resilience and related philosophic and psychologic writings: (a) Equanimity, a balanced perspective of one's life and experiences; equanimity connotes the ability to consider a broader range of experience and to 'sit loose' and take what comes, thus moderating extreme responses to adversity (Beardslee, 1989; Kadner, 1989; May, 1986); (b) Perseverance, the act of persistence despite adversity or discouragement; perseverance connotes a willingness to continue the struggle to reconstruct one's life and to remain involved and to practice self-discipline (Caplan, 1990; Druss & Douglas, 1988; May, 1986; Richmond & Beardslee, 1988); (c) Self-reliance, a belief in oneself and one's capabilities; self-reliance is the ability to depend on oneself and to recognize personal strengths and limitations (Caplan, 1990; Druss & Douglas,

1988; Richmond & Beardslee, 1988); (d) Meaningfulness, the realization that life has a purpose and the valuation of one's contributions; meaningfulness conveys the sense of having something for which to live (Bettelheim, 1979; Caplan, 1990; Frank, 1952; Frankl, 1985; Rutter, 1985); (e) Existential aloneness, the realization that each person's life path is unique; while some experiences are shared, there remain others that must be faced alone; existential aloneness confers a feeling of freedom and sense of uniqueness (Frankl, 1985; von Witzelben, 1958).

Initially, verbatim statements from the interviews reflecting each of the five components were selected. For instance, the item "keeping interested in things is important to me" was meant to reflect an overall impression of perseverance.

Respondents were asked to state the degree to which they agreed or disagreed with each item. All items are scored on a 7-point scale from 1, disagree, to 7, agree. All items are worded positively and reflect accurately the verbatim statements made by participants in the original study (Wagnild & Young, 1990). Possible scores range from 25 to 175 with higher scores reflecting higher resilience.

No norms have been established for performance on the RS but summary statistics are available from prior studies. The means and standard deviations for these studies are presented below. Looking at a particular score in relationship to the means presented allows an individual's score to be compared. High scores indicate a high degree of resilience.

The RS possesses a priori content validity in that during construction items were selected that reflected the generally accepted definitions of resilience and were drawn from interviews of persons who characterized resilience. The RS was reviewed by two psychometricians and two nurse researchers prior to further testing and minor changes were made in the wording of items. Although the use of all positively worded items may have led to a response set bias, the investigators were concerned that reversing the items would change the meaning and decided to write the items as they were expressed by participants.

The pilot form was pretested for readability and clarity of items, initial reliability, and specificity of directions among 39 undergraduate nursing students. Internal consistency reliability coefficient was .89 in this sample (Table 1).

The RS has been used in five studies prior to the one reported here. Internal consistency and test-retest reliabilities have been supported as well as construct and concurrent validity. Study samples included caregivers of spouses with Alzheimer's disease (Wagnild & Young, 1988), graduate students (Cooley, 1990; Klaas, 1989, first-time mothers returning to work (Killien & Jarrett, 1993), and residents in public housing (Wagnild & Young, 1991). The RS had respectable reliability in these samples and also provided evidence of validity. Test-retest reliability is being assessed in an ongoing study (Killien & Jarrett, 1993). Pregnant and postpartum women ($N = 130$) were

TABLE 1. 25-Item Resilience Scale

	Disagree							Agree						
1. When I make plans I follow through with them.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
2. I usually manage one way or another.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
3. I am able to depend on myself more than anyone else.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
4. Keeping interested in things is important to me.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
5. I can be on my own if I have to.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
6. I feel proud that I have accomplished things in my life.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
7. I usually take things in stride.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
8. I am friends with myself.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
9. I feel that I can handle many things at a time.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
10. I am determined.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
11. I seldom wonder what the point of it all is.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
12. I take things one day at a time.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
13. I can get through difficult times because I've experienced difficulty before.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
14. I have self-discipline.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
15. I keep interested in things.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
16. I can usually find something to laugh about.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
17. My belief in myself gets me through hard times.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
18. In an emergency, I'm someone people generally can rely on.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
19. I can usually look at a situation in a number of ways.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
20. Sometimes I make myself do things whether I want to or not.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
21. My life has meaning.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
22. I do not dwell on things that I can't do anything about.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
23. When I'm in a difficult situation, I can usually find my way out of it.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
24. I have enough energy to do what I have to do.	1	2	3	4	5	6	7	1	2	3	4	5	6	7
25. It's okay if there are people who don't like me.	1	2	3	4	5	6	7	1	2	3	4	5	6	7

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administered the RS during pregnancy, and at 1, 4, 8, and 12 months postpartum. Correlations ranged from .67 to .84 ($p < .01$) which is considered satisfactory.

Established and valid measures of constructs integral to the theoretical definition of resilience were positively and significantly correlated with the RS and included self-esteem and perceived stress supporting construct validity. Measures of adaptational outcomes were correlated with the RS as prior investigators suggested that resilience facilitates adaptation, supporting concurrent validity. Measures of adaptation included morale, life satisfaction, depression, and somatic health (Table 2).

Although preliminary studies supported both the reliability and validity of the RS, exploring the psychometric properties of this instrument in a large randomly selected sample was a necessary next step.

TABLE 2. Data from Studies Using the 25-Item Resilience Scale Group Means, Standard Deviations, Score Ranges and Reliability Coefficients

	1 ^a	2 ^b	3 ^c	4 ^d	5 ^e
Age in years					
Mean	70.5	31.8	33.4	30.7	73.4
SD	±7.9	±6.1	±6.6	—	±11.7
Gender (% female)	100	100	100	100	83.7
Resilience Scale (RS)					
Mean	138.4	139.1	138.8	141.7	141.1
SD	±18.6	±14.5	±14.1	±14.9	±15.3
Range					
Minimum	90	92	105	101	114
Maximum	175	165	167	172	167
Cronbach's Alpha	.85	.86	.85	.90	.76
Test-Retest Reliability	—	—	—	.81**	—
Correlations between RS and study variables					
Morale ^f	.54***	—	—	—	.43**
Life Satisfaction ^g	—	—	—	—	.59***
Perceived Stress ^h	—	-.67***	-.32*	—	—
Symptoms of stress ⁱ	—	—	—	-.24**	—
Depression ^j	—	—	—	-.36**	—
Self-Esteem ^k	—	—	—	.57**	—
Health ^l	—	.50***	.40***	—	—

Note. A dash (—) indicates unavailable or unreported data.

^aAlzheimer's Caregivers (Wagnild & Young, 1988) ($n = 39$). ^bFemale grad students (Klass, 1989) ($n = 58$). ^cFemale grad students (Cooley, 1990) ($n = 43$). ^dFirst-time mothers (post-partum) (Killien & Jarrett, 1993) ($n = 130$). ^ePublic Housing Residents (Wagnild & Young, 1991) ($n = 43$). ^fPhiladelphia Geriatric Center Morale Scale (Lawton, 1975). ^gLife Satisfaction Index-A (Neugarten, Havighurst & Tobin, 1961). ^hPerceived Stress Scale (Cohen, Kamarck & Mermelstein, 1983). ⁱSymptoms of Stress Scale (Nakagawa-Kogan & Betrus, 1984). ^jBeck Depression Inventory (Beck & Beck, 1972). ^kSelf-Esteem Scale (Rosenberg, 1965). ^lGeneral Health Rating Scale (Davies & Ware, 1981).

* $p < .05$. ** $p < .01$. *** $p < .001$.

METHOD

Sample

A random sample of 1,500 community-dwelling older adults was selected from the readership of a major senior citizen periodical in the Northwest. Survey packets were mailed and 810 were anonymously returned for an overall response rate of 54%. There was no follow-up for mailed questionnaires. The survey packet included demographic information, the RS, and instruments to assess concurrent validity by exploring the relationships between RS and measures of adaptation (morale, life satisfaction, depression, and somatic health). Protection of human subjects was assured by following the guidelines of the University Human Subjects Review Board.

The sample ranged in age from 53 to 95 years with a mean of 71.1 years ($SD = 6.5$). The majority were female (62.3%); 61.2% were married; 25.7% widowed; 5.2% single; and 5.2% divorced. The participants tended to be well-educated with 66.2% educated beyond high school. Seventy-nine percent were retired. Most lived with a spouse (59.4%), 32.1% lived alone, and the remaining 10% lived with relatives, friends, or children. Most participants reported good health (13.8% excellent; 32.3% very good; 36.55% good) with some reporting fair (12.5%) or poor (2.2%) health. The median income reported was \$22,000 per year with 57% reporting an income of \$20,000 or more. The ethnic origin for all but 14 of the 810 participants was Caucasian with 7 reporting Asian background and 7 not reporting. For this reason, ethnicity was not identified as a separate variable in the analyses.

Instruments

Life satisfaction was measured using the Life Satisfaction Index A (LSI-A) (Neugarten, Havighurst, & Tobin, 1961). This measure compares present life in general with past life and with lives of others. This is a well-established instrument originally developed and validated for use with older persons. Internal consistency reliability has generally been high. Convergent validity was evaluated using the Life Satisfaction Rating resulting in a correlation of .55. Correlations with other measures of well-being in the range of .60 to .70 support the construct validity of this measure (Lohmann, 1977; Lohmann, 1980). The LSI-A has been used as a single-dimension instrument and is a measure of subjective well-being tapping five related components: zest, resolution, and fortitude; congruence between desired and achieved goals; positive self-concept; and mood tone. The LSI-A is a 20-item index scored dichotomously. In this study, the LSI-A was used to assess concurrent validity of the RS. Accordingly, a significant positive correlation was expected between resilience and life satisfaction.

Morale was measured using the 17-item Philadelphia Geriatric Center Morale Scale (PGCMS) (Lawton, 1975). This instrument is designed to assess morale and subjective well-being of the older person along three dimensions: agitation (6 items); attitude toward own aging (5 items); and, lonely dissatisfaction (6 items). The PGCMS is scored dichotomously. Kuder-Richardson (K.R.) alpha reliability for the PGCMS was .83. Alpha reliabilities for each of the subscales were .81 positive attitude toward own aging, .85 for agitation, and .85 for lonely dissatisfaction. The 17-item PGCMS is convergent with the original 22-item PGCMS ($r = .80$). The earlier version (22-item) of the PGCMS was validated against adjustment ratings given by staff to several hundred residents of two homes for the aged and an apartment building for the elderly (Lawton, 1972) and in groups of applicants to a home for the aged ($N = 269$) and applicants to a public housing project designed for the elderly and handicapped ($N = 406$) (Morris & Sherwood, 1975). In this study, morale was used to assess concurrent validity with the expectation that higher scores in resilience would correlate with higher scores in morale.

Depression was measured using the short form of the Beck Depression Inventory (BDI) (Beck & Beck, 1972). This 13-item scale evaluates the prevalence and severity of depression symptomatology. A number of investigators have concluded that the BDI is a reliable and valid measure for screening depression and discriminates between depressed and not depressed older adults (Beck & Beck, 1972; Beck, Rial, & Rickels, 1974; Gallagher, Nies, & Thompson, 1982; Reynolds & Gould, 1981). Yesavage et al. (1983) found correlations of .83 and .80 between the BDI and other measures of depression and internal consistency reliability ranged from .79 to .90 (Scogin, Beutler, Corbishley, Leahy, & Hamblin, 1988). This scale was used to assess concurrent validity. A negative correlation between depression and resilience was expected.

Physical health was measured by asking respondents to rate their health on a 5-point scale from excellent to poor which was reverse scored in this study. This self-report method has been used and reported by both Linn and Linn (1980) and Ferraro (1980), corresponds to objective health indicators, and thus is an acceptable indicator of physical health status. Physical health is a measure of concurrent validity and a positive correlation between resilience and physical health was expected.

Statistical Procedures

Data were analyzed using SPSS/PC Version 3.0 (Statistical Package for the Social Sciences: Norusis, 1988a, 1988b). Bivariate relationships were explored by correlational analyses. Factor analyses were conducted to examine the internal consistency and validity of the RS.

RESULTS

Descriptive Results

The mean scores and standard deviations for the BDI, LSI-A, and PGCMS were 2.96, $SD = 2.81$; 15.32, $SD = 3.45$; and 12.61, $SD = 3.34$ respectively. These scores fall within the mid-range for performance for these measures. Internal consistency reliabilities for the above scales were acceptable. Alpha coefficients were .78 for the BDI, .78 for the PGCMS, and .77 for the LSI-A.

The mean score for the RS in this sample (147.91; $SD = 16.85$) was half a standard deviation above the means reported for preliminary studies in smaller samples. Scores ranged from 75-175 and were slightly negatively skewed, but approximated a normal distribution. Using the preliminary division of scores where 147 to 175 is considered high, this sample's mean score is on the line between high and mid-range scores. The range, however, extends from low to high. There were nonsignificant relationships between the RS and age, education, income, and gender.

The reliability was high with a coefficient alpha of .91. Item-to-total correlations ranged from .37 to .75 with the majority falling between .50 and .70. All were significant at $p \leq .001$.

Principal Components Analysis. The 25-item RS was analyzed using principal components analysis (PCA) followed by oblimin rotation and Kaiser normalization. Since the RS items were selected to reflect five components of resilience and intercorrelated positively and consistently, one might expect to observe a five-factor structure. The factor solution indicated a substantial primary factor underlying the data. The scree test criterion likewise indicated that the cutoff point was between Factors I and II. The eigenvalue for Factor I was 9.56 and accounted for 38.3% of the variance. Loadings ranged from .30 to .76 with 23 of the 25 items falling between .45 and .76. The correlation between the factor scores and total RS score was .99, $p < .001$.

However, using Kaiser's criterion of considering all unrotated factors with eigenvalues greater than 1.0 resulted in five factors that accounted for 57.1% of the variance. Factor solutions were studied for two, three, four, and five factors.

Examining the five-factor solution and considering only those factor loadings greater than .40 revealed a number of secondary loadings leading to ambiguity in interpreting the factors. Likewise the three- and four-factor solutions were ambiguous due to numerous secondary loadings.

Applying the percent of variance criterion and stopping the factoring procedures when the last factor accounted for no less than 5% of the variance resulted in a two-factor solution. This solution proved to be more interpretable. Factors I and II included 17 and 8 items respectively. All factor loadings were .40 or higher. A total of 44.0% of the variance was explained by the two-factor solution (Table 3).

Concurrent Validity. Concurrent validity was evaluated by correlating the RS with theoretically relevant constructs. It was hypothesized that resilience would be positively related to measures of adaptation to stress which included life satisfaction, morale, and depression. It was also hypothesized that physical health as an indicator of adaptation to stress would be related to resilience; a positive self-report of health would be positively correlated with higher scores in resilience. Table 4 displays the relationships of the RS with the above measures. All were significant in the expected directions at $p \leq .001$. Higher resilience scores were associated with high morale, life satisfaction, better physical health, and a lower level of depression, supporting the concurrent validity of the RS.

DISCUSSION

The strengths of the RS include its internal consistency reliability, concurrent validity with established measures of adaptation, and preliminary construct validity indicated by the factor analysis. The internal consistency of the RS is respectable as demonstrated in a number of studies (.76-.91) and in the current study as well ($r = .91, p \leq .001$). Test-retest reliability is being assessed in an ongoing study of pregnant and postpartum women (Killien & Jarrett, 1993). Women were administered the RS over an 18-month period (during pregnancy and 1, 4, 8, and 12 months postpartum). Correlations have ranged from .67 to .84 ($p < .01$) which are respectable and suggest that resilience is stable over time.

TABLE 3. Factors with Item Loadings

Items	Factors	
	I	II
Factor I: Personal Competence		
Follow through with plans	<u>.75</u>	-.20
Manage one way or other	<u>.79</u>	-.12
Able to depend on self more than anyone	<u>.77</u>	-.28
Keeping interested in things is important	<u>.66</u>	.09
I can be on my own if I have to	<u>.71</u>	-.12
I feel proud that I have accomplished things	<u>.60</u>	.06
I feel that I can handle many things at a time	<u>.56</u>	.08
I am determined	<u>.70</u>	.04
I can get through difficult times because of experience	<u>.55</u>	.23
I have self-discipline	<u>.48</u>	.26
I keep interested in things	<u>.56</u>	.08
My belief in myself gets me through	<u>.53</u>	.35
In an emergency, people can rely on me	<u>.62</u>	.13
I can usually look at situation in number of ways	<u>.43</u>	.26
Sometimes I make myself do things	<u>.49</u>	.15
When in difficult situation, can usually find way out	<u>.51</u>	.33
I have enough energy to do what I have to do	<u>.41</u>	.18
Factor II: Acceptance of Self and Life		
I usually take things in stride	.36	<u>.45</u>
I am friends with myself	.38	<u>.45</u>
I seldom wonder what the point of it all is	-.01	<u>.42</u>
I take things one day at a time	-.01	<u>.66</u>
I can usually find something to laugh about	.36	<u>.45</u>
My life has meaning	.39	<u>.40</u>
I do not dwell on things	-.03	<u>.74</u>
It's okay if there are people who don't like me	.04	<u>.49</u>

Support for concurrent validity was shown by high correlations of the RS with well-established valid measures of constructs linked with resilience and outcomes of resilience. Specifically they were depression ($r = -.37$), life satisfaction ($r = .30$), morale ($r = .28$), and health ($r = -.26$).

Theoretical definitions of resilience supported a multidimensional construct. The exploratory PCA suggested a unique dominant factor supported by examination of the scree plot. Examining the percent of variance accounted for by each factor and eigenvalues greater than 1.0, however, suggested a two-factor solution.

Each of the two factors reflected the theoretical definition of resilience. The 17 items for Factor I suggested self-reliance, independence, determination, invincibility, mastery, resourcefulness, and perseverance, and this factor was labeled Personal Competence.

TABLE 4. Correlations Among Resilience and Measures of Adaptation

Measure	RS	BDI	LSI	PGCMS
BDI	-.37			
LSI	.30	-.62		
PGCMS	.28	-.35	.67	
Health	.26	-.47	.44	.47

Note. RS = Resilience Scale; BDI = Beck Depression Inventory; LSI = Life Satisfaction Index; PGCMS = Philadelphia Geriatric Center Morale Scale.

$N = 810$

$p < .001$ for all coefficients;

The eight items on Factor II represented adaptability, balance, flexibility, and a balanced perspective of life. These items reflected acceptance of life and a sense of peace in spite of adversity. This factor was labeled Acceptance of Self and Life. Both factors reflected theoretical definitions of resilience providing support to the construct validity of RS.

A limitation in using the RS is that in all studies to date, the empirical range has not approached the theoretical range in the negative direction, suggesting that the response format of the RS warrants further refinement. Inclusion of the 'low resilience' items as well as negatively worded items needs to be piloted. Additionally, since scale items were generated from interviews with women, additional work needs to be done to analyze the differences between women and men on resilience.

Future testing of the RS must include assessment of construct validity through discriminant and convergent approaches to validation. Because it is suggested that resilience contributes positively to adaptation, relationships among resilience, social involvement, stress, and coping responses need to be explored. A longitudinal study among individuals experiencing transitions would provide important information about how resilience develops and changes over time. Test-retest reliability needs to be evaluated further; especially since it is suggested that resilience is an enduring personality characteristic.

The exploratory factor analysis and scree plot supported a unidimensional measure while the criterion of exploring all factors with eigenvalues greater than 1 suggested a multidimensional measure. Additional investigations are needed that analyze the underlying dimensions of resilience.

The RS is of potential use as a measure of internal resources and of the positive contribution an individual brings to a difficult life event. Identifying and measuring this quality will contribute to our understanding of stress resistance and successful adaptation.

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Offprints. Requests for offprints should be directed to Gail M. Wagnild, RN, PhD, Associate Professor, Community Health Care Systems, SM-24, University of Washington, Seattle, WA 98195.