

## **Supplement: Development of a Brief Resilience Scale**

Our theoretical interest was in developing a scale that assessed trait resilience as indicated by individual strengths and resources that can be drawn on when confronting hardship. To develop a brief scale, we drew items from published resilience scales and from studies that generated resilience scores using extant items in their surveys. Priority was given to those items with high face validity, that recurred frequently across publications, and that were included in the most frequently used resilience scales.

### **Measures.**

The published scales from which we drew items included the Connor-Davidson Resilience Scale (Connor & Davidson, 2003); Short Grit Scale (Duckworth & Quinn, 2009); Ego Resilience Scale (Block & Kremen, 1996); Resilience Scale (Wagnild & Young, 1993); and the Brief Resilience Scale (Smith et al., 2008). Based on resilience work that used items in the Health and Retirement Study (HRS) survey, we added 5 items from the “Perceived Constraints” scale and 5 items from the “Perceived Mastery” scale (Manning et al., 2016). We also included items from the Mastery Scale and Self-Esteem Scale by Pearlin and Schooler (1978), Rosenberg’s Self-Esteem Scale (Rosenberg, 1965), the Hope Scale (Snyder, Cheavens, & Sympson, 1997) and the Multidimensional Measurement of Religiousness/Spirituality (BMMRS-adapted) (Fetzer Institute, 1999). These items and their source scales are listed in Supplementary Table 1.

This led to a questionnaire that included 47 unique items along with some basic demographic information. The questionnaire began with the following instructions: People differ in how they approach and deal with the challenges and stresses of life. For each of the following

statements, please indicate how much you think the statement is true of you, from “not at all true of me,” to “very much true of me.”

### **Methods.**

The questionnaire was administered in 2014 to a small pilot test (n=21) of older adults, patients recruited from the waiting area of a primary care clinic in a large Midwestern hospital. Individuals received \$25 for participating.

### **Analyses.**

Correlations between items were calculated, the focus being on correlations of three items that were deemed face-valid candidate measures of resilience that were robustly correlated with many other items: (1) I tend to bounce back quickly after hard times; (2) When things look hopeless, I don't give up; and (3) I feel that I have a number of good qualities.

Items with correlations  $\geq 0.6$  were given priority in determining meaningful clusters associated with each of the 3 founding items. Founding item #1 - “I tend to bounce back quickly after hard times” generated a cluster of 3 additional items that correlated at levels  $\geq 0.6$ , exhibited face validity and represented different aspects of resilience. This resulted in a total of four items, the founding item plus “I am regarded as a very energetic person,” “I usually take things in stride,” and “I can do just about anything I really set my mind to” (Cronbach's alpha = 0.85).

Founding item #2 – “When things look hopeless, I don't give up” - generated a cluster of 3 additional items that correlated at levels  $\geq 0.6$ , but that were heavily weighted toward self-esteem. These included, “On the whole, I am satisfied with myself,” “I wish I could have more respect for myself”, and “I certainly feel useless at times.”

Founding item #3 – “I feel that I have a number of good qualities” – generated a cluster of 9 items, of which two items were also present in the cluster for founding item #1 (“I can do

just about anything I really set my mind to” and “I am regarded as a very energetic person”). For face validity and brevity, we opted for the first cluster described above.

## References

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Supplementary Table 1. Resilience Scale and Item Pool


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**Item no. Description**


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**From the Connor-Davidson Resilience Scale (Connor & Davidson, 2003)**

- 12 When things look hopeless, I don't give up
- 16 Not easily discouraged by failure
- 17 Think of self as strong person
- 22 In control of your life
- 23 I like challenges

**From the Short Grit Scale (Grit-S) (Duckworth & Quinn, 2009)**

- 9. I finish whatever I begin.
- 10. Setbacks don't discourage me.

**From the Ego Resiliency Scale (Block & Kremen, 1996)**

- 3. I enjoy dealing with new and unusual situations.
- 6. I am regarded as a very energetic person.
- 9. Most of the people I meet are likeable.
- 13. I would be willing to describe myself as a pretty "strong" personality.
- 14. I get over my anger at someone reasonably quickly.

**From the Brief Resilience Scale (Smith et al., 2008)**

- 1. I tend to bounce back quickly after hard times.
- 2. I have a hard time making it through stressful events.

**From Resilience Scale (Wagnild & Young, 1993)**

- 1. Follow through with plans
- 2. Manage one way or other
- 4. keeping interested in things is important
- 5. I can be on my own if I have to.
- 6. I feel proud that I have accomplished things
- 7. I usually take things in stride.
- 9. I feel that I can handle many things at a time.
- 10. I am determined.
- 14. I have self-discipline.
- 16. I can usually find something to laugh about.
- 21. My life has meaning.

**From Perceived Constraints (Manning et al., 2016)**

Q22a I often feel helpless in dealing with the problems of life.

Q22d I have little control over the things that happen to me.

**From Perceived Mastery (Manning et al., 2016)**

Q23a I can do just about anything I really set my mind to.

Q23b When I really want to do something, I usually find a way to succeed at it.

Q23c Whether or not I am able to get what I want is in my own hands.

Q23d What happens to me in the future mostly depends on me.

Q23e I can do the things that I want to do.

**From Mastery scale (Pearlin & Schooler, 1978)**

3. There is little I can do to change many of the important things in my life.

5. Sometimes I feel that I'm being pushed around in life.

7. I can do just about anything I really set my mind to.

**From Self-esteem scale (Pearlin & Schooler, 1978)**

1. I feel that I have a number of good qualities.

2. I feel that I'm a person of worth, at least on an equal plane with others.

3. I am able to do things as well as most other people.

4. I take a positive attitude toward myself.

5. On the whole, I am satisfied with myself.

6. All in all, I am inclined to feel that I'm a failure.

**From Rosenberg Self-Esteem Scale (Rosenberg, 1965)**

5. I feel I do not have much to be proud of.

6. I certainly feel useless at times.

8. I wish I could have more respect for myself.

**From Hope Scale (Snyder, Cheavens, & Simpson, 1997)**

6. I can think of many ways to get the things in life that are most important to me.

**From the Multidimensional Measurement of Religiousness/Spirituality (Fetzer Institute, 1999)**

31. I try hard to carry my religious beliefs over into all my other dealings in life.

37. To what extent do you consider yourself a religious person?