Psychometric Validation of the Stress in Context (SIC) Questionnaire: Links with Psychological and Physiological Measures of Stress and Health

Stefanie E. Mayer[1], Elissa S. Epel[1], George M. Slavich[2], and Wendy Berry Mendes[1]

[1]University of California, San Francisco (UCSF), [2]University of California, Los Angeles (UCLA)

Purpose

Background

- The Perceived Stress Scale (PSS) is one of the most common measures for assessing global stress perceptions.

- While the PSS is closely correlated with measures of psychological stress and self-reported health (depressive and physical symptomatology; Cohen et al., 1988), links with biological correlates of stress and health are less consistent.

- Being designed to measure global stress appraisals, the PSS also presents a limitation for assessing how stress perceptions may be linked to specific contexts that are typically creating demand (e.g., related to discrimination, isolation, conflict).

- We developed an alternative self-report measure of stress - the Stress in Context (SIC) questionnaire – that sought to address these limitations.

Developing the SIC

The SIC assesses stress perceptions in specific contexts, such as at home, in the neighborhood, in social relationships, at work, and during childhood:
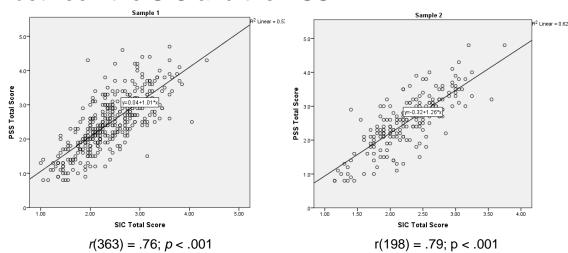
Below are questions about stress in your life. Select the number that best describes your life this week. The last four questions are about stress in your childhood.

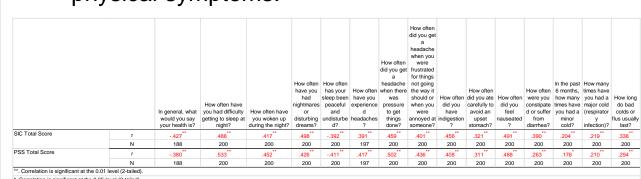| Not at All	Rarely	Sometimes	Often	Always
1	2	3	4	5

1) Is your life stable and predictable? Do you know where you will live and work, and who will be in your life?
2) Do you have control over your life? Do you decide how you spend your time each day?
3) Is there at least one person you can depend on? Is there someone you can rely on when you need help?
4) Do people think you seem overwhelmed? Would people close to you say you are having a hard time handling things?
5) Can you depend on the important people in your life? Do you feel you can rely on them for help or advice?
6) Are you lonely? Would you like to feel closer to others?
7) Do you have what you need to deal with life? Do you have enough money, inner strength, and people around to help you?
8) Do you fight with others? Do you argue with relatives, co-workers, friends, or your partner?
9) Are you treated differently because of who you are? Do people treat you badly because of your race, age, or how you look?
10) Do you spend time with friends? Do you do social or community activities?
11) Do you feel unsafe in your home or neighborhood? How often you feel you are in danger?
12) Do people close to you hurt your feelings? Do you feel ignored, put down, or left out?
13) Does your body react to stress? When under stress, do you feel tired or have headaches, stomach aches, or muscle pain?
14) Are you on edge? Do you watch out for trouble or potential problems?
15) Are you easily startled? When something surprises you, do you jump or overreact?
16) Does life seem overwhelming? Do you feel there is too much to cope with?
For the last four questions, please focus on your childhood:
17) Was your childhood unpredictable or chaotic? Did your life involve a lot of change?
18) Was there conflict in your home? Did people disagree, argue, or fight?
19) Did you feel unsafe? Did you feel you were in danger?
20) Did people hurt your feelings? Did you feel ignored, put down, or left out?

Current Research

The current aims were to:
1) examine test-retest reliability of the SIC
2) establish its discriminant/convergent validity
3) assess its predictive validity

Methods

Study 1: Amazon's MTurk samples

- Two samples (N_1 = 365; N_2 = 200) of Amazon's MTurk participants

- Completed measures of demographics, self-reported stress (SIC, PSS, major life events), physical health (general health, Physical Health Questionnaire – PHQ), and mental health (anxiety, depression)

- Same participants completed retest 1 month later

Study 2: Laboratory study

- We measured links between the SIC and participants' resting ANS responses in a laboratory study (N = 168) using impedance cardiography and electrocardiography.

Results – Study 1

- In both samples, the SIC showed good internal consistency (Cronbach's alphas = .89) and adequate 1-month test-retest reliability (N_1: r(114) = .68; p < .001; N_2: r(68) = .74; p < .001).
- Both MTurk samples showed strong correlations between the SIC and the PSS:

r(363) = .76; p < .001 r(198) = .79; p < .001

- Participants reporting a major life event in the past month also had greater SIC and PSS scores (N_1: all ps < .01). Anxious or depressed participants reported greater SIC and PSS scores (all ps < .001).
- Greater SIC and PSS scores were also correlated with worse general health and greater frequency of physical symptoms.

Results – Study 2

- Only the SIC predicted heightened resting state of the sympathetic nervous system above and beyond the effects of PSS and age.

	Beta	t	Sig.
(Constant)		31.309	0.000
SIC Total Score	-0.224	-2.114	0.036
PSS Total Score	0.167	1.510	0.133
Age	0.241	2.790	0.006
a. Dependent Variable: PEP + LVET			

Discussion

- We developed a novel stress measure that assesses stress perceptions within specific stressor domains.

- Our results suggest that the SIC is a reliable and valid questionnaire.

- The SIC and PSS were correlated, demonstrating convergent validity.

- Like the PSS, the SIC also tracks with self-reported psychological and physical symptom measures of stress and health.

- However, unlike the PSS, higher SIC scores were correlated with greater sympathetic nervous system levels during rest.

Further work is needed in evaluating the psychometric properties of the SIC, but our results suggest that this contextual measure of stress may be useful for examining both psychological and physiologic correlates of stress and health.

Future Directions

Future work will examine the utility of the SIC in lower income populations and samples exposed to chronic adversity. For example, individuals facing chronic social adversity do not have as elevated perceived stress scores as one might predict, suggesting there is habituation or social comparison and thus lower stress scores. This may obscure links with health outcomes in chronic stress exposed populations. Weighting stress perceptions to each of these contexts may help remind people of the many potential sources of perceived stress from their environment, and thus get a more accurate summative measure.