Stress and Health

Stress and Health **22**: 105–114 (2006)
Published online in Wiley InterScience (www.interscience.wiley.com). **DOI:** 10.1002/smi.1081
Received 19 August 2005; Accepted 18 October 2005

Short Communication: User friendly and 'useworthy' Stress Barometer

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Summary
The Stress Barometer, which includes stress symptoms, stress types, relationship stress and time stress, was developed as an easy-to-use instrument which provides a visual representation of the stress an individual is experiencing. The purpose of this study was to assess the reliability, validity and usefulness of the Stress Barometer. Reliability was tested using a test–retest procedure on 23 pain patients on long-term sick leave. To assess validity, the results of the instrument were compared to the results of the SF-36 Health Survey, the Hospital Anxiety and Depression Scale and the Shirom–Melamed Burnout Questionnaire administered to 112 pain and/or emotional exhaustion syndrome patients on long-term sick leave. Fifty directors who participated in a management leadership course focusing on stress also completed and evaluated the instrument. Reliability was high for most of the subscales included. The results of the validity test showed that the Stress Barometer correlates with the respondents' perceived experience of a variety of health aspects such as anxiety, depression as well as different aspects of burnout/emotional exhaustion. The Stress Barometer is quick to complete and it offers immediate feedback. The study demonstrates that the Stress Barometer is also usable and useworthy. Copyright © 2006 John Wiley & Sons, Ltd.

Key Words
stress; burnout; measurement instrument

Introduction

There are a multitude of stress tests, many of which can be found on the Internet. Their composition may vary, but they all deal with one or more of the following areas: time/lack of time, irritation/impatience, achievement, prioritizing, gearing up, symptoms, concentration difficulties, setting boundaries, fatigue, sleep problems, anxiety, restlessness, depression and decision-making anxiety. The respondent either checks the different statements or rates them by number. When finished, the total score indicates the stress level. The respondent finds out if he/she is able to tolerate stress, is susceptible to stress, or has a stress problem. There are also more complex stress instruments. One of these is the Stress Profile constructed by Setterlind and Larsson (1995). It is comprehensive and is particularly suitable for situations in which the goal is to analyse different dimension of stress: physical work environment, management climate, work content, etc. The Stress Profile determines the presence of social support but does not otherwise deal with relationship stress.

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A number of stress tests contain questions that are intended to classify people as 'Type A' or 'Type B' personalities. The concept 'Type A behaviour' was introduced by the cardiologists Friedman and Roseman (1959). 'Type A' people see themselves as 'doers' and often believe that they are indispensable (Währborg, 2002). 'Type B' behaviours, for the most part, are the opposite of 'Type A': 'Type B' people are calm and relaxed.

Among the stress-induced conditions, 'burnout' is probably written about and debated the most. In Sweden, the term is being used less frequently because it is felt to be insufficiently defined and altogether too negative. Instead, the terms emotional exhaustion syndrome or exhaustive depression are used (National Board of Health and Welfare, 1997). The expert most often associated with burnout is Maslach (1982), who has studied the way care giving professionals deal with negative feelings in their work with patients. Originally, the term was used to characterize a crisis in relation to work with people. Currently, the term 'emotional exhaustion syndrome' is used to denote a crisis in relation to the actual work and/or one's private life. An instrument for measuring emotional exhaustion syndrome is the Shirom–Melamed Burnout Questionnaire (SMBQ) (Melamed, Kushnir, & Shirom, 1992; Melamed et al., 1999).

In recent years, it has become apparent that the disturbances in attention and hyperactivity observed in some children do not decrease with age, but that diagnoses such as Attention Deficit Hyperactivity Disorder (ADHD) exist in adults as well (Barkley, Fischer, Edelbrock, & Smallish, 1990). It is most likely that there are some people with stress/emotional exhaustion syndrome who have an underlying neuropsychiatric disturbance such as ADHD (Wender, Wolf, & Wasserstein, 2001). There are tests that can screen for the presence of ADHD with a sensitivity of 68.7 per cent and a specificity of 99.5 per cent (Kessler et al., 2005; McCann, Scheele, Ward, & Roy-Byrne, 2000; Stein et al., 1995; Ward, Wender, & Reimherr, 1993).

What existing stress tests have in common is that they lack, for the most part, questions that address relationship stress, which is the kind of stress that women in particular often experience. Women of working age who are afflicted with chronic illnesses are often psychosocially burdened, not just at work but even more so in their family lives (in relation to their husband/partner, for example) (Horsten, Mittelman, Wamala, Schenck-Gustafsson, & Orth-Gomér, 2000; Orth-Gomér et al., 2000). Orth-Gomér and her colleagues have developed and structured an interview method on stress in a life perspective that takes about an hour per patient to administer.

The Stress Barometer

The Stress Barometer was developed as a simple instrument intended to find out how stressed an individual is, as well as to offer an indication of why she/he is stressed. It is not based on the SMBQ. Anxiety and depression are included, for example, as these symptoms are common in late stages of stress syndromes. The Barometer consists of four subtests, the results of which are presented graphically on four wheels. Since the stress symptoms are the reason for the visit to the doctor, the first wheel includes 18 stress symptoms. The second wheel includes 12 stress types that indicate what kind of help might be needed. What causes the most stress for people are relationships and the experience of not having enough time to get everything done. Hence, the remaining two wheels deal with relationship stress (14 relationship problems) and time stress (16 signs of time stress). Each subtest consists of a set of visual analogue scales (VAS) (denoted by the spokes on the wheels) on which the respondent places an X. A line is then drawn to connect the Xs, resulting in what appears to be an irregularly shaped 'flower' (Brattberg, 2004), Figure 1. The wheels in Figure 1 are filled in as an example. The Stress Barometer takes about 10 minutes to complete. It provides a visual representation of the individual's stress state. Thus, the respondent immediately receives feedback without having to calculate a stress index. The different wheels can be used individually or together. The Stress Barometer is constructed in the same manner as the previously validated Health Barometer (Brattberg, 2002). The aim of this study was to investigate the reliability, validity and usefulness of the Stress Barometer.

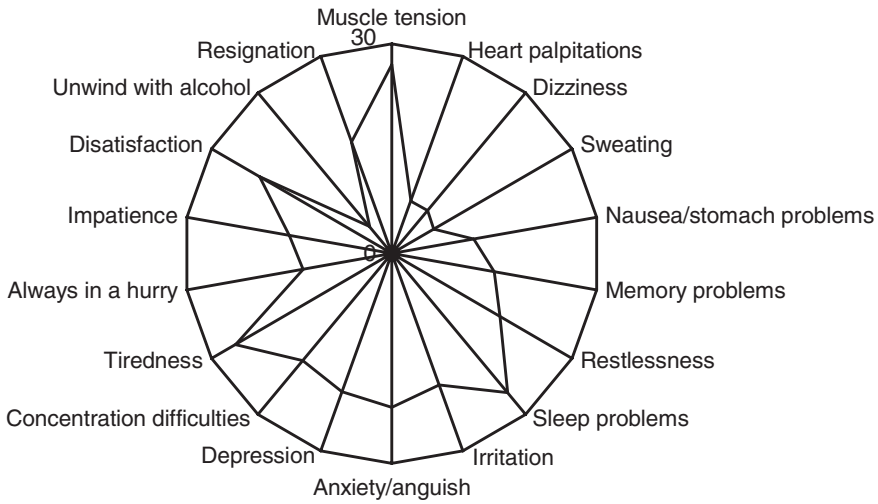
Materials and methods

Reliability

The reliability of the values measured was determined by having 23 women on long-term sick

DOI: 10.1002/smi

Stress symptoms



Stress types

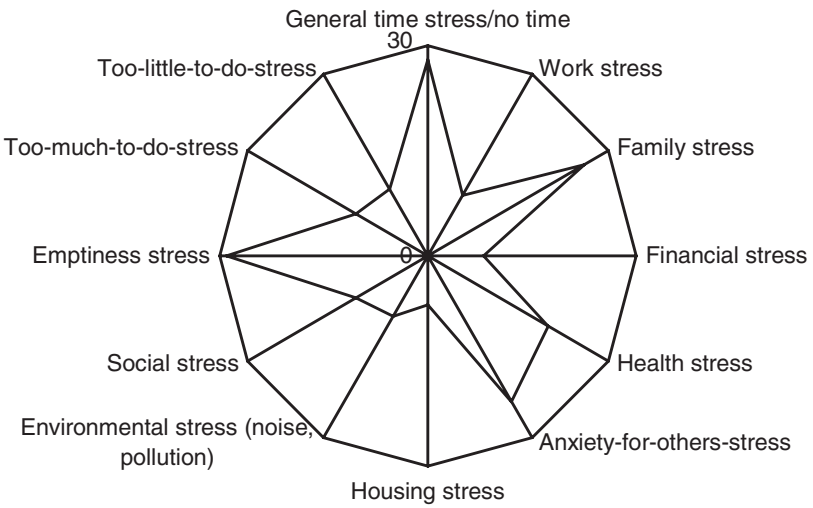
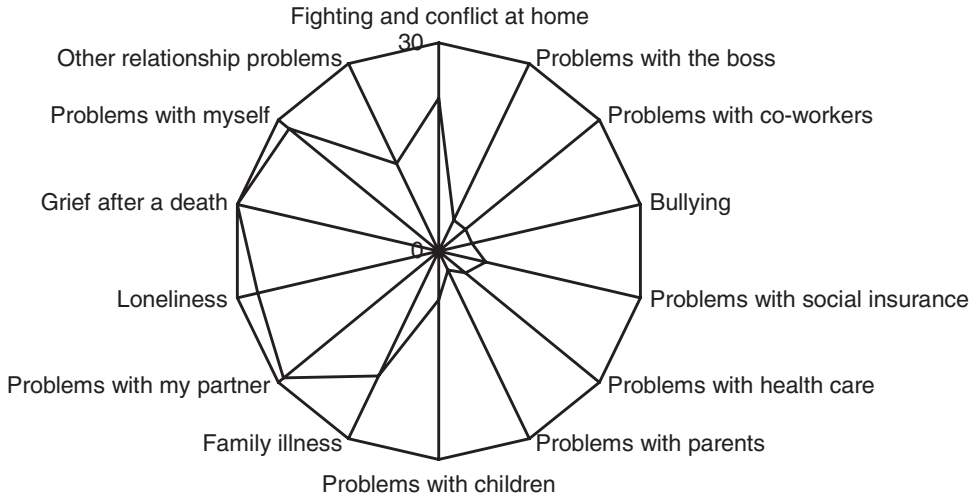


Figure 1. Stress Barometer.

leave due to chronic pain (mean age 53; standard deviation, SD = 10), and who were participating in a discussion group as part of their rehabilitation, fill in the Stress Barometer on two occasions, a test–retest procedure, in which Cronbach's alpha was calculated (Cronbach, 1951). Repeated measurements on the same individual should give reliability over 0.70 if their health does not change between the two test occasions. If the time between tests is too short, there is a risk that the respondents will remember how they answered, resulting in a falsely high reliability. If the time

Relationship stress



Time stress

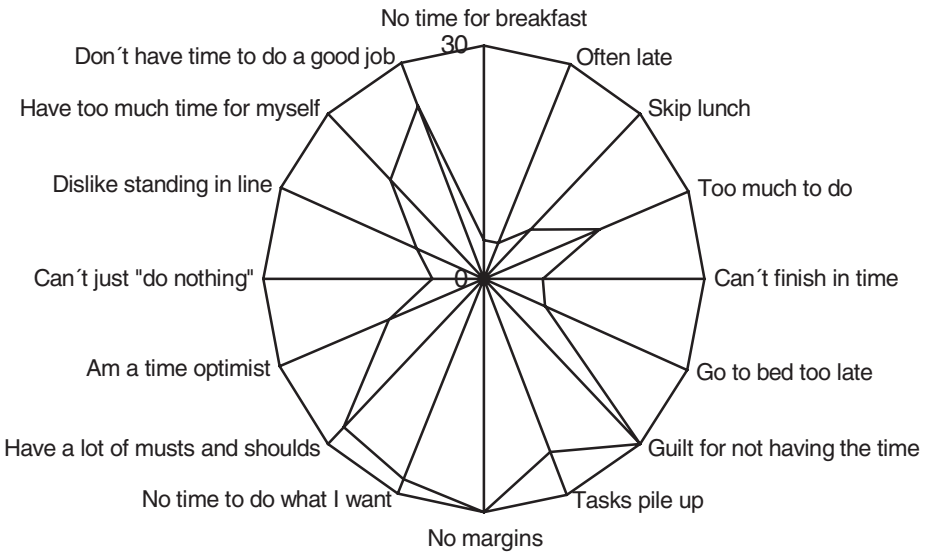


Figure 1. *Continued*

interval is too long, there is a risk that the health conditions will have changed between tests, resulting in an underestimation of reliability. In this study, the state of pain of the participants was relatively stable, even if their mental well-being was fragile and influenced by current events. An interval of 2 to 3 days was used between the two measurement occasions.

DOI: 10.1002/smi

Validity

Because the Stress Barometer measures experienced health, anxiety, depression and a number of stress aspects, its validity was studied in relation to the SF-36 (Sullivan, Karlsson, & Ware, 1995), the Hospital Anxiety and Depression Scale (HAD) (Zigmond & Snaith, 1983) and the SMBQ (Melamed et al., 1992, 1999). The SF-36 Health Survey measures physical health [scales: physical functioning (PF), roll-physical (RP), bodily pain (BP)], mental well-being [scales: mental health (MH), roll-emotional (RE), social functioning (SF)], and provides two more overall measurements of health including physical and mental aspects [scales: general health (GH), vitality (VT)]. HAD measures the degree of anxiety and depression, and the SMBQ provides, in addition to a global measure of burnout/emotional exhaustion, four submeasurements: emotional exhaustion, physical fatigue, tension and listlessness, cognitive weariness. None of these instruments (SF-36, HAD, SMBQ) correspond exactly to the Stress Barometer but together they fairly well cover the aspects of stress and health which are measured by the Barometer.

One hundred and twelve persons on long-term sick leave, 11 men and 101 women (mean age 47; SD = 8) with chronic pain and/or the diagnosis of burnout or 'emotional exhaustion syndrome' who were participating in rehabilitation discussion groups either in real life or in cyberspace, completed the Stress Barometer, SF-36 and HAD. Sixty-three of them also completed the SMBQ. The covariation between the Stress Barometer's variables and these validated tests was analysed using Spearman's Rank Correlation Coefficient. Values over 0.70 indicate a strong correlation; values between 0.30 and 0.70 indicate a moderate correlation; while values under 0.30 indicate a weak correlation (Colton, 1997). In addition, 50 persons (13 men and 37 women) who participated in a stress management leadership course expressed their opinions on the Stress Barometer's significance in their course evaluations (Jönsson, 2005).

Results

Reliability

Figure 2 shows the measurement values on two occasions for the four subtests: stress symptoms,

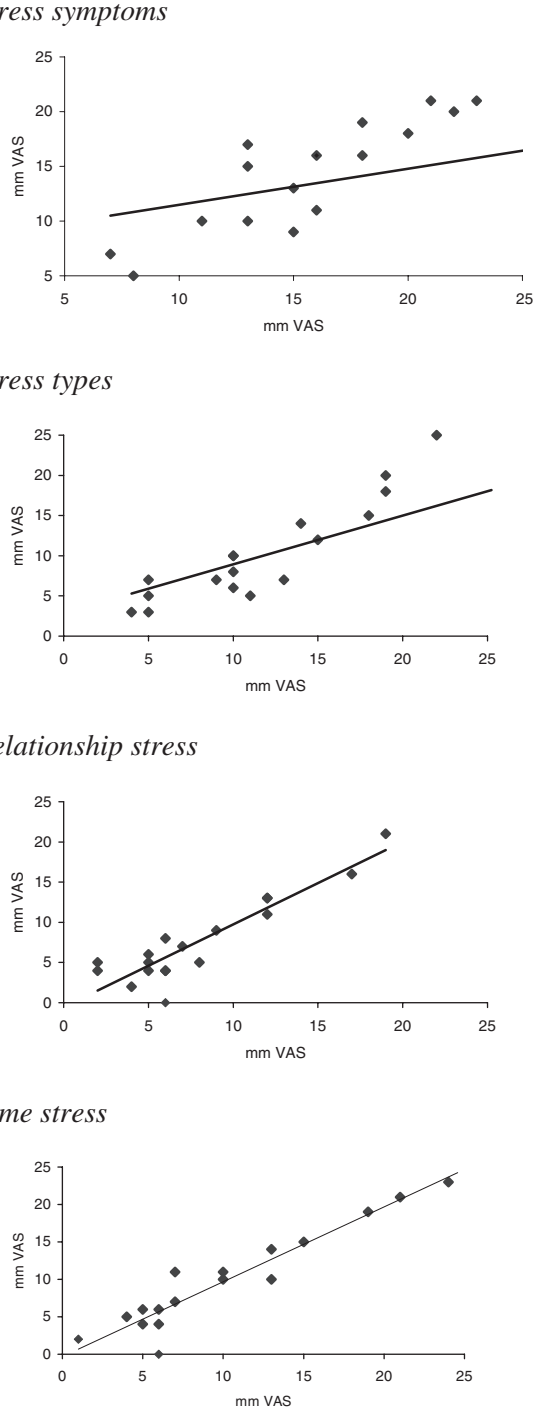


Figure 2. Values from the Stress Barometer's four subsections on two measurement occasions.

Table I. Stress Barometer's reliability assessed using a test–retest procedure; 95th per cent confidence interval in parentheses (n = 23).

	Chronbach's alpha		Chronbach's alpha
Stress symptoms		*Relationship stress*	
Muscle tension	0.97 (0.93–0.99)	Fighting and conflicts at home	0.85 (0.64–0.94)
Heart palpitations	0.96 (0.91–0.98)	Problems with the boss	0.87 (0.68–0.94)
Dizziness	0.95 (0.89–0.98)	Problems with co-workers	0.95 (0.89–0.98)
Sweating	0.97 (0.94–0.99)	Bullying	0.41 (–0.40–0.75)
Nausea/stomach problems	0.92 (0.82–0.97)	Problems with social insurance	0.95 (0.88–0.98)
Memory problems	0.95 (0.88–0.98)	Problems with health care	0.97 (0.93–0.99)
Restlessness	0.86 (0.69–0.94)	Problems with parents	0.95 (0.88–0.99)
Sleep problems	0.94 (0.86–0.97)	Problems with children	0.94 (0.85–0.97)
Irritation	0.85 (0.65–0.93)	Family illness	0.96 (0.91–0.98)
Anxiety/anguish	0.86 (0.67–0.94)	Problems with my partner	0.94 (0.85–0.97)
Depression	0.87 (0.69–0.94)	Loneliness	0.90 (0.76–0.96)
Concentration difficulties	0.94 (0.86–0.97)	Grief after a death	0.95 (0.89–0.98)
Tiredness	0.94 (0.86–0.97)	Problems with myself	0.95 (0.88–0.98)
Always in a hurry	0.58 (0.04–0.82)	Other relationship problems	0.95 (0.89–0.98)
Impatience	0.53 (–0.09–0.80)		
Dissatisfaction	0.92 (0.82–0.97)	*Time stress*	
Unwind with alcohol	0.80 (0.55–0.92)	No time for breakfast	0.88 (0.72–0.95)
Resignation	0.65 (0.18–0.85)	Often late	0.92 (0.80–0.97)
		Skip lunch	0.99 (0.98–0.99)
Stress types		Too much to do	0.98 (0.96–0.99)
General time stress/no time	0.95 (0.89–0.98)	Can't finish in time	0.94 (0.80–0.96)
Work stress	0.97 (0.93–0.99)	Go to bed too late	0.92 (0.78–0.96)
Family stress	0.91 (0.80–0.96)	Guilt for not having the time	0.97 (0.93–0.99)
Financial stress	0.91 (0.80–0.96)	Tasks pile up	0.76 (0.43–0.90)
Health stress (own health)	0.97 (0.93–0.99)	No margins	0.98 (0.95–0.99)
Anxiety-for-others-stress	0.97 (0.93–0.99)	No time to do what I want	0.94 (0.86–0.97)
Housing stress	0.96 (0.90–0.98)	Have a lot of musts and shoulds	0.97 (0.93–0.99)
Environmental stress	0.97 (0.92–0.99)	Am a time optimist	0.97 (0.94–0.99)
Social stress	0.98 (0.95–0.99)	Can't just 'do nothing'	0.94 (0.85–0.97)
Emptiness stress	0.98 (0.96–0.99)	Dislike standing in line	0.84 (0.61–0.93)
Too-much-to-do-stress	0.94 (0.87–0.98)	Have too much time to myself	0.77 (0.46–0.90)
Too-little-to-do-stress	0.58 (0.03–0.82)	Don't have time to do a good job	0.95 (0.87–0.98)

stress types, relationships stress and time stress. The values plotted are the mean values of the variables that were tested in a given subtest. Chronbach's alpha was 0.92 (confidence interval, CI-0.81–0.97) for stress symptoms, 0.94 (CI-0.85–0.97) for stress types, 0.95 (CI-0.89–0.98) for relationship stress and 0.99 (CI-0.98–0.99) for time stress. The values for each subscale in the subtests are presented in Table I.

Validity

In practical use, it is the entire surface area of the Stress Barometer's four wheels that provides the visual representation of the respondent's health. The surface area is dependent on the values of the respective subscales. The mean value of the different subscales (variables) determines the radius of the circle, which, in turn, determines the surface size. Table II presents the correlation coefficients of mean values for stress symptoms, relationship stress and time stress in relation to the validated test instruments (SF-36, HAD, SMBQ). A detailed analysis of the different subscales showed that the presence of anxiety and depression did not correlate with relationship problems with the boss, coworkers, parents or children, but with 'loneliness' and 'problems with myself'. Table III presents the analysis of the correlations between subscales in the validation tests (SF-36, SMBQ) and individual spokes in the Stress Barometer's relationship and time stress wheels. Only the strongest correlations are included. For HAD, the correlations presented are between anxiety/anguish and depression in the Stress Barometer's stress symptoms' wheel.

DOI: 10.1002/smi

Table II. Stress Barometer's validity assessed through comparison with the SF-36, HAD and SMBQ (Spearman's Rank Correlation Coefficient); 95th per cent confidence interval in parentheses.

	Stress symptoms	Relationship stress	Time stress
SF-36 (n = 112)			
Function scales			
Physical functioning (PF)	–0.21 (–0.38 to –0.03)	–0.30 (–0.46 to –0.12)	–0.12 (–0.30 to –0.07)
Roll-physical (RP)	–0.30 (–0.46 to –0.12)	–0.33 (–0.49 to –0.16)	–0.35 (–0.50 to –0.17)
Roll-emotional (RE)	–0.40 (–0.55 to –0.24)	–0.21 (–0.38 to –0.02)	–0.34 (–0.49 to –0.16)
Social functioning (SF)	–0.49 (–0.62 to –0.34)	–0.43 (–0.57 to –0.27)	–0.45 (–0.59 to –0.29)
Bodily pain (BP)	–0.37 (–0.52 to –0.20)	–0.31 (–0.47 to –0.13)	–0.29 (–0.45 to –0.11)
Well-being scales			
Mental health (MH)	–0.60 (–0.71 to –0.47)	–0.45 (–0.59 to –0.29)	–0.35 (–0.50 to –0.17)
Vitality (VT)	–0.60 (–0.70 to –0.46)	–0.37 (–0.52 to –0.20)	–0.47 (–0.60 to –0.31)
General health (GH)	–0.39 (–0.54 to –0.22)	–0.27 (–0.43 to –0.09)	–0.21 (–0.38 to –0.02)
HAD (n = 112)			
Anxiety	0.67 (0.56–0.76)	0.41 (0.24–0.55)	0.49 (0.33–0.62)
Depression	0.64 (0.51–0.74)	0.43 (0.27–0.57)	0.42 (0.26–0.57)
SMBQ (n = 63)			
Emotional exhaustion	0.56 (0.35–0.71)	0.39 (0.15–0.59)	0.38 (0.14–0.57)
Physical fatigue	0.43 (0.20–0.62)	0.38 (0.14–0.58)	0.22 (–0.04–0.45)
Tension and listlessness	0.56 (0.35–0.71)	0.44 (0.21–0.62)	0.44 (0.21–0.62)
Cognitive weariness	0.44 (0.21–0.63)	0.27 (0.01–0.49)	0.33 (0.09–0.54)
SMBQ global	0.59 (0.40–0.73)	0.40 (0.17–0.60)	0.40 (0.17–0.60)

Table III. Correlation between Stress Barometer's subvariables and SF-36, HAD and SMBQ (Spearman's Rank Correlation Coefficient); 95th per cent confidence interval in parentheses.

	Stress Barometer	Correlation coefficient
SF-36 (n = 112)		
Physical health (PF, RP, BP)	Problems with my partner	–0.39 (–0.53 to –0.21)
	Problems with the boss	–0.36 (–0.51 to –0.18)
Mental well-being (MH, RE, SF)	Problems with myself	–0.56 (–0.68 to –0.42)
	Tasks pile up	–0.38 (–0.53 to –0.21)
General health (GH, VT)	Problems with myself	–0.40 (–0.54 to –0.23)
	Guilt for not having the time	–0.40 (–0.55 to –0.24)
HAD (n = 112)		
Anxiety	Anxiety/anguish	0.74 (0.65–0.82)
Depression	Depression	0.69 (0.58–0.77)
SMBQ (n = 63)		
Emotional exhaustion	Problems with myself	0.48 (0.26–0.65)
	Tasks pile up	0.38 (0.14–0.58)
	Can't just 'do nothing'	0.37 (0.13–0.57)
Physical fatigue	Problems with myself	0.42 (0.19–0.61)
	Can't just 'do nothing'	0.36 (0.11–0.56)
	Guilt for not having the time	0.33 (0.08–0.53)
Tension and listlessness	Problems with myself	0.57 (0.37–0.72)
	Can't just 'do nothing'	0.51 (0.30–0.68)
	Have a lot of musts and shoulds	0.40 (0.14–0.58)
Cognitive weariness	Problems with myself	0.57 (0.36–0.72)
	Tasks pile up	0.43 (0.20–0.62)
	No time to do what I want	0.40 (0.16–0.59)
SMBQ global	Problems with myself	0.63 (0.45–0.76)
	Can't just 'do nothing'	0.44 (0.20–0.62)
	Guilt for not having the time	0.41 (0.17–0.60)

Usefulness/useworthiness

The Stress Barometer was used in a management leadership course, the goal of which was the establishment of a long-term sustainable organization (Jönsson, 2005). Fifty directors/managers in government administration and private companies completed the Stress Barometer and asked their employees to do the same. What follows is a selection of comments from their evaluations of the Stress Barometer which demonstrate not only the usefulness of the instrument, but what Eftring calls 'useworthiness' (as distinguished from 'usability'). He defines useworthiness as '. . . the individual user's assessment of the extent to which the technology meets the user's high-priority needs.' (Eftring, 1999, p. 25). In this case, the 'technology' is the Stress Barometer and the respondents found it not only user friendly, but worth using in that it fulfils needs that are of great importance to them.

Respondents' evaluation of and insights gained from the Stress Barometer.

> It's clear to me now that something entirely different than lack of time causes my stress symptoms. Now I understand that it's primarily relationship stress that puts the pressure on me.
>
> It can be enough to be able to visualize the stress and what's causing it in order to do something about it.
>
> I've more stress symptoms than stress! Are the symptoms something that I learned earlier in life and are still affecting me?
>
> What I've realized is that stress is something very personal; that it's not just a matter of how much you have to do.
>
> I've learned to more easily identify what it is that provokes stress in me. This has also meant that I can more easily set aside time to deal with whatever it is that is pressuring me.
>
> The Stress Barometer's division into different stress types has helped me to reflect more deeply on my own stress.

Stress Barometer's effect on respondents' management style.

> The Stress Barometer has made my own stress visible. I have gained new insights into factors that stress me that will be useful in my management job in the future.
>
> Not all stress is related to time. For at least two of my employees it is due to understimulation.
>
> Two people with different stress types can find it difficult to understand each other. Understanding what causes others stress can be important in a relationship.
>
> I have used the Stress Barometer on several of my coworkers and it has become clearer for them what it is all about.
>
> Ten people have completed the Stress Barometer in preparation for their job reviews with me. They have been surprised to find that they are perhaps not actually as 'stressed out' as they have often inaccurately expressed it.

Discussion

Pressure on health care resources is increasing. Health care professionals often have a short time in which to assess a patient's life situation. Patients, feeling the pressure, may withhold information that is of value for treatment and rehabilitation. Aids that contribute to focusing the patient consultation time on that which is relevant are valuable. The Stress Barometer is one such aid, at least for people who have symptoms of burnout or 'emotional exhaustion syndrome' as it nowdays is called in Sweden. It is easy to complete and offers immediate graphic feedback on how the individual feels without having to calculate a score. The Stress Barometer also provides an indication of where to place the emphasis in the exploratory discussion. The immediate graphic feedback helps health care professionals in analysis and in gaining insight into different factors involved in the deteriorating health of the individual. The Stress Barometer has been used for several years, primarily as an aid to discussion, but also as an evaluation instrument in research and in management leadership courses in

DOI: 10.1002/smi

order to study the participants' own stress and that of their coworkers. In working life, the Stress Barometer can be used as a basis for job review discussions between a manager and his or her employee. A disadvantage in using it in research in the past has been that each subsection had to be hand measured with a ruler, which was a time consuming task. This problem, however, has been eliminated since the Stress Barometer was recently digitized and the length of the subscales can now be measured automatically if needed or desired.

People who are stressed and burnt out often assume that it is work that is the cause of their exhaustive depression: They have too much to do. In addition, they often have problems with their boss. This study shows that conflicts at home, problems with parents and partners, loneliness and above all, problems with oneself were more highly correlated with anxiety, depression and burnout/emotional exhaustion than problems with the boss or coworkers. The Stress Barometer can be a good instrument for illuminating this for the person on sick leave.

The test for reliability demonstrated good agreement for the majority of the subscales included. Complete agreement is not to be expected, since general health is likely to vary according to current events in a person's life. The validity test demonstrated that the Stress Barometer correlates with experiences of a variety of health aspects such as anxiety, depression and different aspects of burnout/emotional exhaustion. Stress symptoms had, not unexpectedly, a fairly strong correlation with vitality and mental health (SF-36) as well as anxiety and depression (HAD). Relationship stress had a somewhat stronger correlation with mental health than did time stress. However, time stress affected vitality somewhat more. Relationship stress and time stress were correlated with anxiety and depression, but the correlation with anxiety was somewhat stronger for time stress.

If you want to compress the stress test, you could use a wheel with six spokes including stress symptoms (anxiety/anguish, depression), relationship stress (problems with myself, problems with my partner) and time stress (can't just 'do nothing', guilt for not having the time). High ratings on these measurements indicate with great probability that the individual has a manifest stress problem that affects his or her mental well-being. If you supplement this with the wheel for stress types, you will also have an indication of what kind of help the individual may need, such as health care, company health care services, family counselling, financial counselling or assistance in finding new housing.

Conclusion

The Stress Barometer is easy and quick to complete. It provides immediate visual feedback, which makes it user friendly. This study has shown that it is also usable and above all, useworthy.

References

Barkley, R.A., Fischer, M., Edelbrock, C.S., & Smallish, L. (1990). The adolescent outcome of hyperactive children diagnosed with research criteria: I. An 8-year prospective follow-up study. *Journal of the American Academy of Child Adolescent Psychiatry*, *29*, 546–557.

Brattberg, G. (2002). Meeting women with chronic pain: 'Health barometer' provides support for constructive dialogue. *Lakartidningen*, *99*(49), 4974–4980.

Brattberg, G. (2004). *Väckarklockor [Alarm clocks]*. Stockholm: Värkstaden (in Swedish).

Colton, T. (1997). *Statistics in medicine*. Boston, MA: Little Brown and Company.

Cronbach, L. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, *16*, 297–334.

Eftring, H. (1999). *The useworthiness of robots for people with physical disabilities*. Lund: Certec, Department of Design Sciences, Lund University.

Friedman, M., & Roseman, R.H. (1959). Association of specific overt behaviour pattern with blood and cardiovascular findings. *Journal of the American Medical Association*, *169*, 1286–1296.

Horsten, M., Mittleman, A.M., Wamala, S.P., Schenck-Gustafsson, K., & Orth-Gomér, K. (2000). Depression and social isolation in relation to prognosis of coronary heart disease in women. *European Heart Journal*, *21*, 1072–1080.

Jönsson, B. (2005). *Kvalitet genom pacemaking [Quality through pacemaking]*. Lund: Certec. Retrieved October 17, 2005, from Certec Web site: http://www.certec.lth.se/pacemaking/rapportgoteborg.pdf (in Swedish).

Kessler, R.C., Adler, L., Ames, M., Demler, O., Faraone, S., Hirpi, E., Howes, M.J., Jin, R., Secnik, K., Spencer, T., Ustun, T.B., & Walters, E.E. (2005). The World Health Organization adult ADHD self-report scale (ASRS): A short screening scale for use in the general population. *Psychological Medicine*, *35*, 245–256.

Maslach, C. (1982). *Burnout, the cost of caring*. Englewood Cliffs, NJ: Prentice-Hall.

McCann, B.S., Scheele, L., Ward, N., & Roy-Byrne, P. (2000). Discriminant validity of the Wender Utah Rating Scale for attention-deficit/hyperactivity disorder in adults. *Journal of Neuropsychiatry and Clinical Neurosciences*, *12*(2), 240–245.

Melamed, S., Kushnir, T., & Shirom, A. (1992). Burnout and risk factors for cardiovascular diseases. *Behavioral Medicine*, *18*, 53–60.

Melamed, S., Ugarten, U., Shirom, A., Kahana, L., Lerman, Y., & Froom, P. (1999). Chronic burnout, somatic arousal

and elevated cortisol levels. *Journal of Psychosomatic Research*, *6*, 591–598.

National Board of Health and Welfare (Socialstyrelsen). (1997). *Ändringar i och tillägg till klassifikation av sjukdomar och hälsoproblem 1997 (ksh97)—systematisk förteckning [Changes in and additions to classifications of diseases and health problems 1997 (ksh97)—Systematic register]*. Retrieved October 17, 2005, from the World Wide Web: http://www.sos.se/epc/klassifi/KSHandr.htm (in Swedish).

Orth-Gomér, K., Wamala, S.P., Horsten, M., Schenck-Gustafsson, K., Schneiderman, N., & Mittleman, A.M. (2000). Marital stress worsens prognosis in women with coronary heart disease. *JAMA*, *284*, 3008–3014.

Setterlind, S., & Larsson, G. (1995). The stress profile: A psychosocial approach to measuring stress. *Stress Medicine*, *11*, 85–92.

Stein, M.A., Sandoval, R., Szumowski, E., Roizen, N., Reinecke, M.A., Blondis, T.A., & Klein, Z. (1995). Psychometric characteristics of the Wender Utah Rating Scale (WURS): Reliability and factor structure for men and women. *Psychopharmacology Bulletin*, *31*(2), 425–433.

Sullivan, M., Karlsson, J., & Ware, J.E. (1995). The Swedish SF-36 health survey—evaluation of data quality, scaling assumptions, reliability and construct validity across general populations in Sweden. *Social Science & Medicine*, *41*(10), 1349–1358.

Ward, M.F., Wender, P.H., & Reimherr, F.W. (1993). The Wender Utah Rating Scale: An aid in the retrospective diagnosis of childhood attention deficit hyperactivity disorder. *American Journal of Psychiatry*, *150*(6), 885–890.

Wender, P.H., Wolf, L.E., & Wasserstein, J. (2001). Adults with ADHD. An overview. *Annals of the New York Academy of Sciences*, *931*, 1–16.

Währborg, P. (2002). *Stress och den nya ohälsan [Stress as a new health problem]*. Stockholm: Natur och Kultur (in Swedish).

Zigmond, A.S., & Snaith, R.P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica*, *67*, 361–370.

DOI: 10.1002/smi