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The Stress Profile*

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The Stress Profile consists of a number of questionnaires which have been developed to assess the severity of stress in nine areas of life: social habits, social relationships, life events, sexual problems, sleep, psychiatric symptoms, old age, menstrual stresses, and 'stress and the heart'. The questionnaires have been validated for inter-rater reliability and against the Hamilton anxiety and depression rating scales. Using the Profile, the inter-relationships between different stress areas can be assessed, appropriate treatments advised, and the response to treatment in relation to different components evaluated.

The Maudsley Stress Clinic was established in order to diagnose and quantify the effects of stress on the health and well-being of those referred to it (Wheatley, 1984). The Stress Profile was developed for the same purpose. It consists of questionnaires in nine different stress areas, the answers being quantified and subsequently represented diagrammatically (Wheatley, 1987*a*). The Profile can be used also for recording subsequent response to therapy (Wheatley, 1987*b*). Although references to its use have been made in various reports, it has not been described in detail. It consists of the following sections: social habits, social relationships, life events, sexual problems, sleep, psychiatric symptoms, old age, menstrual stresses, and 'stress and the heart'.

Each section is divided into a number of subitems, which are scored individually for severity. The total score in each area is not necessarily the same, so that the resultant Stress Profile is constructed in relation to the proportional scores of the constituent sections. An example Stress Profile of a patient with major depression is shown in Fig. 1.

Stress areas

Social habits

This records the patient's use of alcohol, tobacco, caffeine-containing drinks, and addictive drugs. With the exception of alcohol, each of these sections is scored as none (0), light (1), or heavy (2), giving a maximum score of eight for this section. For alcohol the scores are: none (1), light (0) and heavy (2), since there is evidence that light alcohol consumption is beneficial, particularly in relation to the cardiovascular system (Gill *et al*, 1986; Shaper *et al*, 1987). The divisions between 'light' and 'heavy' relate to daily consumption: three drinks (Anderson, 1976), 15 cigarettes and five cups respectively. For addictive drugs, 'light' corresponds to irregular use (parties, weekends, etc.) and 'heavy' to regular use.

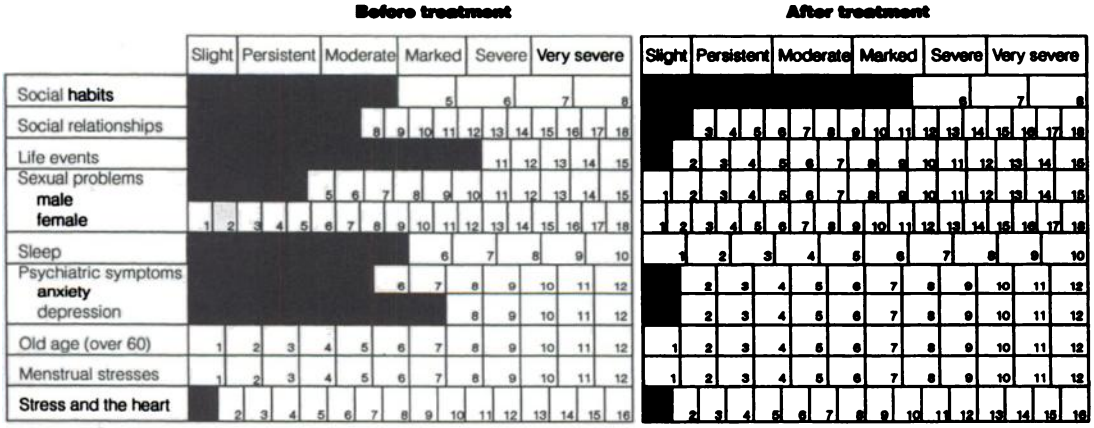


FIG. 1 Stress Profiles of a patient (under 60 years) with major depression (DSM-III-R) before and after 12 weeks' treatment with antidepressant drug therapy, showing reductions in severity of many stress areas, with the exception of social habits and 'stress and heart' (dark areas indicate patient's scores on each item).

*Copies of this instrument are available from DW for a sum of £1 (UK) or £3 (overseas) (US$5) to cover production and postal costs.

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Social relationships

This consists of six items, each of which is scored on a four-point scale (none (0), light (1), moderate (2), considerable (3)), giving a maximum score of 18 for the whole section. The individual items are concerned with: discontent at work or due to unemployment; mental strain in recreations; marital problems; lack of a close confidante; relationships with other people and opportunities for social contacts; and problems concerning physical appearance.

Life events

The questionnaire is divided into five items concerned with different types of events that have been found to influence the response to psychotropic drugs (Wheatley, 1982): emotional, living (earning), living (enjoyment), general health, and serious illness or death. Each item is scored on a four-point scale relating to the degree of stress still experienced by the patient by the event: none (0), slight (1), moderate (2), very much (3). Stress may be caused by both beneficial and adverse events, although more frequently the latter. The maximum score is 15 for this section.

Examples of beneficial emotional events are: love relationships, engagements, marriage, birth of babies; and adverse ones are: broken romances, separation, unwanted pregnancies, abortion, etc. Living (earning) events include: promotion at work, passing examinations, financial gains; dismissal, failing examinations, financial losses, demotion, etc. Living (enjoying) events include: acquisition of prized objects, parties, outings, happy world events; damage in the home, car accidents, losing at sport, etc. General health events may involve the patient or others: recovery from illness, successful operations; recurrent coryza, bronchitis, arthritis. Serious illness or death refers to a close friend or relative or the patient for the former.

It is important to highlight for the patient the difference between social relationships, which refer to the present time, and events, which refer to the past, although they may be of a similar nature.

Sexual problems

There are five main items and one extra for women, each item being scored on a four-point scale (none (0), slight (1), moderate (2), very much (3)), giving a possible total of 15 for men and 18 for women. The items are: dissatisfaction with degree of libido; stress in sexual relationships or lack of them; physical problems such as poor erection, premature ejaculation, anorgasmia, etc.; guilt feelings; and stress in relation to masturbation. The additional item for women is concerned with dysparunia and fear of pregnancy.

Sleep

The experience of sleep is assessed on five characteristics, each one being rated 0–2, giving a maximum total of 10. These items are: delayed onset of sleep (< ½ hour (0), ½–1 hour (1), > 1 hour (2)); nocturnal awakenings (0–1 (0), 2–3 (1), ⩾4 (2)); early morning waking (< ½ hour (0), ½–1 hour (1), > 1 hour (2)); average hours of sleep (7–9 (0), 5–6 (1), < 5/9 > (2)); and feeling refreshed on waking (completely (0), moderately (1), not much (2)).

Psychiatric symptoms

The Raskin depression (1970) and Covi anxiety (1974) scales are completed to indicate overall psychiatric morbidity. Each scale consists of three parts scored on a five-point scale (none (0), mild (1), moderate (2), severe (3), and very severe (4)) giving a maximum score of 12. The Hamilton Rating Scale for Depression (HRSD; Hamilton, 1967) and for Anxiety (HRSA; Hamilton, 1959) are also completed, as indicated later.

Old age

There are four items: degree of unhappiness with the way of life; problems with deafness or defective vision; impact of other physical defects (arthritis, etc.); and dissatisfaction at not being able to do things that were previously possible. Each item is scored as none (0), slight (1), moderate (2) and very much (3), giving a maximum of 12.

Menstrual stresses

The items here include menstrual abnormalities, and either pre-menstrual symptoms or menopausal effects, the last two being themselves subdivided into three sections. Pre-menstrual syndrome (PMS), defined as symptoms occurring or accentuated any time during 14 days before period and/or first 1–2 days of period, includes: anxiety and depression; irritability, loss of energy and difficulty in thinking; and physical symptoms such as weight gain, swollen breasts, etc. Menopausal symptoms, defined as occurring from age 35 onwards, with or without menstrual changes (heavy, missed, irregular periods) or following hysterectomy include: physical (hot flushes, sweats, headaches, etc.), sexual (reduced libido, dry vagina, etc.) and affective (anxiety and depression). Each item (or section) is scored on a four-point scale (none (0), slight (1), moderate (2), severe (3)), giving a maximum score of 12.

Stress and the heart

This section is scored on four items using five-point scales (0–4), giving a possible total of 16. Family history (heart trouble, hypertension, diabetes etc.) is scored according to the number of relatives having one or more of these disorders, (no relatives (0)–four or more relatives (4)). The diastolic level, assessed (sitting) at interview (95–115 mmHg (1), 116+ mmHg (2)) is combined with pulse rate (100–120 (1) and 120+ or irregular (2)), to give the second item, which has the same possible maximum score (4) as the others. Coronary heart disease is scored progressively as: suspicious pain on exertion (1), undue shortness of breath on exertion (2), ECG proven (3) and previous myocardial infarction (4). Finally, cardiophobia is assessed according to the worry caused: slight (occasional) (1), moderate (when not otherwise mentally occupied) (2), marked (most of the time) (3) or extreme (dominating patient's life) (4).

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Validation

Inter-rater reliability

Ratings were undertaken consecutively by two different observers at the patient's first attendance at the clinic in a sample of 24 cases, and correlation coefficients were calculated for each stress area and the total profile score. The only exceptions were 'stress and the heart' and 'old age', which were not analysed. In the case of the former, one observer was not skilled in taking cardiovascular measurements, and in the case of the latter, there were too few patients aged over 60 years for analysis.

As shown in Table I, agreement was good for the individual sections (0.69 (depression)–1.0 (social habits)). The coefficient for the total profile scores was 0.91. All these coefficients were highly statistically significant ($P<0.001$).

Hamilton ratings

There is no independent measure of stress with which the Stress Profile can be compared and indeed stress-induced illness is such a relatively new concept that comprehensive stress scales have not yet been developed. However, there are precedents for using the HRSA and HRSD for comparative purposes (Carroll *et al*, 1981). While these scales are not measures of stress *per se*, anxiety and depression have been the most important manifestations of the response to stress seen in the clinic (Wheatley & Lader, 1987). Therefore the total profile scores were correlated with the HRSA and HRSD totals in a sample of 95 patients, irrespective of diagnosis. Furthermore, correlations were calculated in 28 of these cases at the end of treatment.

As shown in Table II, correlations were not as close as in the case of inter-rater reliability, but were still highly significant in respect of both comparisons ($P<0.001$).

TABLE I

Inter-rater reliability in relation to Stress Profile sections and total severity scores

Stress item	*Mean score (n = 24)* observer A	observer B	*Correlation coefficient (r)*
Social habits	2.8	2.8	1.0
Social relationships	4.7	5.0	0.84
Life events	5.5	5.6	0.78
Sexual problems	1.3	1.5	0.95
Sleep	2.4	2.3	0.88
Psychiatric symptoms			
anxiety	5.1	5.2	0.87
depression	4.2	4.6	0.69
Old age	—	—	—
Menstrual stresses	1.4	1.6	0.88
Stress and the heart	—	—	—
Total	26.9	28.1	0.91

TABLE II

Correlations between total scores on the Stress Profile and those on the Hamilton scales

	Before treatment (total scores) (n = 95)			*After treatment (total scores) (n = 28)*		
	Stress Profile	*HRSA*	*HRSD*	*Stress Profile*	*HRSA*	*HRSD*
Mean	34.3	22.7	20.7	22.8	14.2	12.5
s.e.m.	1.5	0.7	0.7	2.2	1.4	1.5
r	—	0.48	0.61	—	0.63	0.62
P<	—	0.001	0.001	—	0.001	0.001

Indeed, had the correlations been extremely high it might have suggested that the Stress Profile is redundant since anxiety and depression might be rated instead.

Further correlations were made between the two main diagnostic categories (anxiety/panic/phobias and depression) and the total Hamilton scores. Although there were similar significant correlations of the diagnostic categories to both Hamilton scales, there was no higher correlation between specific diagnosis and specific scale. This probably underlines the fact that there is considerable symptom overlap between the two Hamilton scales and that the patients attending the clinic suffered from multiple stress problems with an overlay of anxiety and somatic symptoms.

Cardiovascular measures

As yet, only 15 patients have had cardiovascular measurements taken before and after treatment, irrespective of diagnosis. There were reductions in mean pulse rate, and in systolic and diastolic blood pressures, these changes reaching significance in the case of the blood-pressure measurements ($P<0.01$ and <0.02 respectively). No correlations were found between these reductions in haemodynamic measures and relief of total stress in these patients.

Discussion

The Stress Profile can be administered by a social assistant at interview or even self-recorded by the patient. The psychiatrist can then amplify the data either by further elucidation of the salient points or by using more comprehensive scales, which may be standard instruments or others that have been further devised for use in the clinic (Wheatley, 1984). Significant improvement in many items of the profile has been demonstrated with antidepressant drugs when depression was a major response to stress (Wheatley, 1990); and with beta-adrenergic blocking drugs in the case of anxiety and panic attacks (Wheatley, 1988). The Stress Profile provides a convenient means of assessing the effects of stress and diagnosing the main aetiological factors involved.

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