



SAQ

stress assessment questionnaire

> User Manual

Stress Assessment

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1.0 Introduction

1.1 Stress

Stress results from factors such as dissatisfaction with work, personal relationships and parental responsibilities alongside critical life incidents such as illness, family bereavement or unemployment. Stress produces short term emotional, behavioural and physical symptoms of varying intensity moderated by the individual's coping style and personality. Chronic stress invariably produces lower self-esteem and can also produce symptoms of depression and anxiety disorder.

1.2 Stress Assessment Questionnaire

The SAQ is a multi-factor stress assessment instrument that measures four major stress domains together with 16 traits or facets / elements that define these four domains. The four domains cover possible sources and symptoms of stress, coping style, personality factors and mental health. Figure 1 illustrates the SAQ concept model.

Figure 1. SAQ Concept Model



1.3 Concept model

The SAQ was designed to provide an integrated multi-factor stress assessment measure for counselling and self-development. Examination of existing instruments revealed that most tended to offer a partial view of stress by focusing on one or two dimensions – for example, stress arising from job-related factors, stress symptoms, perfectionism etc. The SAQ was designed as a broad measure assessing the following:

- the factors causing stress in the client's life covering work, relationships and parental responsibilities;
- the client's experience of critical life incidents that often produce stress such as those measured by the Holmes-Rahe Social Adjustment Scale;

- how far the client was displaying common symptoms of stress;
- the client's coping strategies and relevant personality factors;
- the possible impact of stress on the client's mental health.

1.4 Questionnaire construction

The SAQ was developed in the following stages:

1. A concept / rational model of the instrument was developed based on sixteen scales covering the dimensions described above.
2. A prototype inventory was produced. Sixteen scales were constructed using item data identified in the literature search. These included a mixture of positively and negatively keyed / phrased items. The table below shows what the scales measure.
3. The prototype questionnaire together with a basic report generation facility providing feedback was established on the internet and advertisements were placed to attract people to take a free stress assessment.
4. Analysis of the database was conducted at regular intervals to check the reliability of the scales and explore the factor structure of the instrument. Poorly performing items were changed to improve scale reliability. Exploratory factor analysis indicated that the pilot questionnaire was tapping two stress domains.
5. The final questionnaire was assembled and norms were collected over the internet. Respondents who gave their ages as under 16 or over 65 were excluded from the normative sample. Duplicate cases and cases of random or haphazard responding identified from visual inspecting the data were deleted.

1.5 Access

The SAQ is designed for stress counselling interventions where its main function is to help develop the client's understanding of stress and whether they should seek professional help. The SAQ report is intended to help clarify things for the client but it cannot in any way replace a formal assessment by a qualified mental health professional. The SAQ is designed to be used by psychologists and stress counsellors but is also available direct to individuals from the website www.stresstest.me.

1.5 Design standards

The SAQ meets many of the important benchmarks of a modern psychometric measure specified in the EFPA review model (Bartram, 1998). It has been submitted to the British Psychological Society Psychological Testing Centre (PTC) and the Buros Institute of Mental Measurements for review.

Table 1. Summary of SAQ concept model key areas and scales

Scale	What the scale measures	
Work	Dissatisfied with job, stress arises from various work conditions.	Sources
Relationship	Suffers stress as a result of relationship difficulties in personal life.	
Parenting	Experiences stress as a result of work overload from childrearing and family.	
Emotional symptoms	Worries, feels afraid, has intrusive thoughts, may have panic attacks.	Symptoms
Behavioural symptoms	Feels tired, works less efficiently, has difficulty concentrating.	
Physical symptoms	Multiple symptoms such as indigestion, headaches, skin complaints.	
Social support	Talks through problems, seeks social support to help reduce stress.	Strategies
Self-regulation	Recognises and manages feelings and emotions.	
Problem solving	Seeks to understand, control and improve situation.	
Distraction	Seeks distractions to reduce pressure and take mind off things.	Personality
Health	Keeps in shape, eats healthy diet, moderates drinking.	
Procrastination	Puts things off, avoids completing projects, lacks initiative.	
Perfectionism	Holds unrealistic standards about self and other people.	Stability
Self-esteem	Lacks self-respect, feels worthless, judges self to be a failure.	
Depression	Feels unhappy, guilty and inadequate, loses motivation and interest.	
Anxiety	Worries excessively, has feelings of fear, relives upsetting events.	

2.0 Administration

The SAQ can only be administered online via the internet. There are two ways that clients can be tested.

2.1 Administered by professional

Where the test is being administered to a group by a psychologist, trainer or counsellor, the test taker receives an email from the test administrator containing a hyperlink which takes the test taker to a testing screen with instructions on how to complete the test. The test taker then goes through a series of screens with the questions and completes a personal details form.

Once the assessment test has been completed, the test taker may view or download the computer-generated feedback report if the online testing service has been set up to provide feedback reports to test takers. The online testing system can be set up by a test administrator to have feedback reports emailed to the test administrator, or to the test taker, or to the test taker and to the test administrator.

2.2 Direct access

Clients can also purchase the SAQ assessment test direct from www.stresstest.me. In this case, the client is presented with instructions, does the test and then completes a personal details form. The client then pays for the assessment by credit card and once the transaction has been processed, the client can view and download the feedback report in PDF format. Test takers can also request a copy of their feedback report to be emailed to them.

2.3 Scoring and norming

The scoring and generation of feedback reports are done online. A client's SAQ raw scores are compared to a very large international comparison group of clients who have answered the questionnaire. Details of this norm group are given in Chapter 6.

3.0 Scale Descriptions

Each scale description table in this chapter contains elements covering the meaning of low scores, moderate scores and high scores.

3.1 Scale items

The SAQ questionnaire has 8 items per scale with positively and negatively keyed items in some of the scales. The tables below present examples of the items.

3.2 Relationships with other scales

The final section of each table shows other scales that the scale correlates highly with. These correlations are from the international comparison group. The full intercorrelation matrix is shown in Chapter 5.

3.3 Scale contents

Scale	Page
Work	9
Relationship	10
Parenting	11
Emotional	12
Behavioural	13
Physical	14
Social Support	15
Self-Regulation	16
Problem Solving	17
Distraction	18
Health	19
Procrastination	20
Perfectionism	21
Self-Esteem	22
Depression	23
Anxiety	24

Scale1: Work		
Low scorer	High scorer	
Description Gets satisfaction and fulfilment from work.	Description Dissatisfied with current work.	
Typical item I have felt empowered at work.	Typical item I have felt that my job was insecure.	
Key behaviours Gains satisfaction from work. Feels empowered, is consulted about changes, has chance for advancement, is satisfied with pay. Tends to use social support network to cope with stress.	Key behaviours Feels dissatisfied with current employment because of factors such job insecurity, overload, having an unsupportive boss, having little control over job. May suffer from low self-esteem and display symptoms of stress, depression and anxiety.	
Moderate scorer		
As satisfied with work as the average person. Or Moderately satisfied/dissatisfied. Or Satisfied/dissatisfied some of the time.		
Relationship with other scales	Positive	Negative
Strongest correlations	Low self-esteem Depression Anxiety Behavioural stress symptoms	Social support coping style

Scale 2: Relationship		
Low scorer		High scorer
Description Satisfied with relationship with current partner.		Description Dissatisfied with relationship with current partner.
Typical item I have had a loving relationship with my partner.		Typical item I have had rows with my partner.
Key behaviours Enjoys doing things with partner. Communicates, gets on well, has good sex life. Tends to use social support network to cope with stress.		Key behaviours Keeps things from partner. Tends to argue a lot. Feels unable to confide in partner. Feels partner ignores his/her needs. May suffer from low self-esteem and display symptoms of stress, depression and anxiety.
Moderate scorer		
As satisfied with personal relationship as the average person. Or Gets on well in some situations but not others. Or Moderately satisfied with relationship.		
Relationship with other scales	Positive	Negative
Strongest correlations	Low self-esteem Depression Anxiety Behavioural stress symptoms	Social support coping style

Scale 3: Parenting		
Low scorer		High scorer
Description Satisfied with parental role.		Description Dissatisfied with parental role.
Typical item I have found my children are a joy and fun to be with.		Typical item I have felt unable to cope with my children.
Key behaviours Happy with partner's contribution to the children, finds the children are a joy and fun to be with, enjoys being a parent. Is emotionally close to his/her children. Able to control feelings and emotions when parental role causes stress.		Key behaviours Feels unable to cope, unappreciated by his/her children, controlled and dominated by their needs and demands. Overwhelmed by the demands of being a parent. May suffer from low self-esteem and display symptoms of stress, depression and anxiety.
Moderate scorer		
Neither very satisfied not very dissatisfied but in between. Or Feels happy some of the time. Or Is as satisfied with parental role as the average person.		
Relationship with other scales	Positive	Negative
Strongest correlations	Low self-esteem Depression Anxiety Behavioural stress symptoms	Self-regulation coping style

Scale 4: Emotional symptoms		
Low scorer	High scorer	
<p>Description</p> <p>Experiences few or no common emotional symptoms of stress.</p>	<p>Description</p> <p>Experiences some common emotional symptoms of stress.</p>	
<p>Typical item</p> <p>I have been afraid of losing control.</p>		
<p>Key behaviours</p> <p>Does not experience the emotional symptoms of stress. Able to recognise and control feelings and emotions successfully when put under stress.</p>	<p>Key behaviours</p> <p>Examples of emotional symptoms include spending less time with people, recurrent thoughts about a bad experience, worrying a lot, trembling, nightmares, being afraid to drive and being nervous around people. May suffer from low self-esteem and display symptoms of depression and anxiety.</p>	
Moderate scorer		
<p>Experiences some emotional symptoms of stress. Or Experiences emotional symptoms on some occasions but not others. Or Experiences as many emotional symptoms of stress as the average person who has completed the questionnaire.</p>		
Relationship with other scales	Positive	Negative
<p>Strongest correlations</p>	<p>Anxiety Depression Behavioural stress Physical stress symptoms</p>	<p>Self-regulation</p>

Scale 5: Behavioural symptoms		
Low scorer	High scorer	
<p>Description</p> <p>Experiences few or no common behavioural symptoms of stress.</p>	<p>Description</p> <p>Experiences some common behavioural symptoms of stress.</p>	
<p>Typical item</p> <p>I have experienced periods of confusion.</p>		
<p>Key behaviours</p> <p>Does not experience the behavioural symptoms of stress. Able to recognise and control feelings and emotions when put under stress.</p>	<p>Key behaviours</p> <p>Examples of behavioural symptoms include working less efficiently, experiencing periods of confusion, having trouble paying attention, becoming forgetful and losing train of thought. May suffer from low self-esteem and display symptoms of depression and anxiety.</p>	
Moderate scorer		
<p>Experiences some behavioural symptoms of stress. Or Experiences behavioural symptoms on some occasions but not others. Or Experiences as many behavioural symptoms of stress as the average.</p>		
Relationship with other scales	Positive	Negative
Strongest correlations	Anxiety Depression Low self-esteem	Self-regulation

Scale 6: Physical symptoms		
Low scorer		High scorer
Description Experiences few or no common physical symptoms of stress.		Description Experiences some common physical symptoms of stress.
Typical item I have experienced periods of confusion.		
Key behaviours Does not experience the physical symptoms of stress. Able to recognise and control feelings and emotions when put under stress.		Key behaviours Examples of physical symptoms include feeling light-headed, headaches, pains in chest, periods of breathlessness and palpitations. May suffer from low self-esteem and display symptoms of depression and anxiety.
Moderate scorer		
Experiences some physical symptoms of stress. Or Experiences physical symptoms on some occasions but not others. Or Experiences as many physical symptoms of stress as the average person.		
Relationship with other scales	Positive	Negative
Strongest correlations	Anxiety Emotional stress symptoms Behavioural stress symptoms	Self-regulation coping style

Scale 7: Social support		
Low scorer	High scorer	
Description Tries to cope on own.	Description Looks to a support network to help cope with stress.	
Typical item I have been able to count on friends/family to help me when I have been down-in-the-dumps		
Key behaviours Likes to solve problems on own, keeps feelings and emotions to self. May not have social network to provide support.	Key behaviours Is able to count on social support network to talk through problems, to provide distraction from worries, to help when under pressure, to care about what happens to him/her. Uses support network to counter depression and boost self-esteem.	
Moderate scorer		
Looks to others for support in some situations but not others. Or Relies on support from others as much as the next person. Or Come across as reasonably independent/resourceful in solving own problems.		
Relationship with other scales	Positive	Negative
Strongest correlations	Distraction coping style	Low self-esteem Depression

Scale 8: Self-regulation		
Low scorer		High scorer
Description Finds it hard to manage feelings and emotions.		Description Recognises and controls feelings and emotions.
Typical item When I have been under stress, I have got very emotional.		Typical item When I have been under stress, I have been able to control my feelings and emotions.
Key behaviours Gets angry, lashes out at people, gets very emotional, says inappropriate things.		Key behaviours Recognises emotions, able to control them, stays positive and composed in stressful situations, thinks clearly and stays focused, does not lash out at people. Tries to solve problems and keep healthy and fit when under stress.
Moderate scorer		
Controls their feelings and emotions as well as the next person. Or Manages to stay in control in some situations but loses it in others. Or As emotionally controlled as the next person.		
Relationship with other scales	Positive	Negative
Strongest correlations	Problem solving coping style Good health	Low self-esteem Depression Anxiety

Scale 9: Problem solving		
Low scorer	High scorer	
Description Does not understand nor manage stress.	Description Takes action to understand problems and reduce stress.	
Typical item When I have felt stressed, I have thought hard about what steps to take.		
Key behaviours Loses feeling of being in control, does not analyze situation, does not know what to do to reduce stress. Tends to be paralysed by stress.	Key behaviours Tries to solve problems finds ways to reduce stress, tries to understand the situation, analyses the problem, makes an extra effort. Tends also to deploy distraction coping style and tries to stay fit and healthy.	
Moderate scorer		
As likely to try to understand the situation as the next person. Or Takes action in some situations but not in others. Or Shows a moderate degree of initiative in trying to reduce stress.		
Relationship with other scales	Positive	Negative
Strongest correlations	Distraction coping style Good health	Low self-esteem Depression

Scale 10: Distraction		
Low scorer	High scorer	
Description Does not use distraction as coping strategy.	Description Seeks activity and distractions to reduce stress.	
Typical item When I have felt stressed, I have gone for walks to reflect on things.		
Key behaviours Tends to be absorbed and overwhelmed by stress. Does not know how to take mind off problems. May not have social support network to help alleviate stress.	Key behaviours Seeks out company of other people, goes shopping to take mind off things, treats self to feel better, goes for walks to reflect on things. Tends also to deploy problem solving and social support coping styles.	
Moderate scorer		
Is able to find distractions some of the time. Or Copes by seeking distractions as often as the average person. Or Is moderately able to detach self from problems.		
Relationship with other scales	Positive	Negative
Strongest correlations	Problem solving coping style Social support coping style	

Scale 11: Health		
Low scorer		High scorer
Description Lets self get out of shape.		Description Manages diet and takes exercise to stay fit.
Typical item I have missed work through illness.		Typical item I have taken part in regular sports or physical activity.
Key behaviours Often misses work through illness, is overweight, feels guilty about drinking. Tends to suffer from broad range of stress symptoms, and display symptoms of depression and anxiety.		Key behaviours Enjoys good health, takes regular sports or physical activity, eats healthy diet. Tries to stay fit and healthy to counter likelihood of experiencing stress, depression and anxiety.
Moderate scorer		
Is as fit and healthy as the next person. Or As liable to lapse into bad diet/lack of exercise as next person. Or Likely to miss work through sickness as much as the next person.		
Relationship with other scales	Positive	Negative
Strongest correlations	Self-regulation coping style	Physical stress symptoms Emotional stress symptoms Behavioural stress symptoms Depression Anxiety Low self-esteem

Scale 12: Procrastination		
Low scorer		High scorer
Description Does things quickly, shows initiative.		Description Puts things off, avoids completing projects, lacks initiative.
Typical item I have accomplished things ahead of schedule.		Typical item I have delayed starting work.
Key behaviours Plans things well in advance, returns phone calls promptly, makes decisions quickly. Has perfectionist tendencies.		Key behaviours Postpones decisions, delays starting work, leaves things to the last minute, needs a push to get started. Tends to display symptoms of stress, depression and anxiety.
Moderate scorer		
<p>Puts things off as often as the average person. Or Shows an average amount of procrastination. Or Delays starting work on some occasions but not others.</p>		
Relationship with other scales	Positive	Negative
Strongest correlations	Behavioural stress symptoms Low self-esteem Depression Anxiety	Perfectionism

Scale 13: Perfectionism		
Low scorer	High scorer	
<p>Description</p> <p>Is disorganised and leaves things unfinished.</p>	<p>Description</p> <p>Is methodical and systematic and likes to get the detail right.</p>	
<p>Typical item</p> <p>I have left others look after the details.</p>	<p>Typical item</p> <p>I have wanted everything to be perfect.</p>	
<p>Key behaviours</p> <p>More disorganised in work and personal life. Leaves others to look after the detail and tidy up behind him. Tends to procrastinate and may display behavioural symptoms of stress.</p>	<p>Key behaviours</p> <p>Organises their work and personal lives, develops plans, and checks things to ensure everything is right. Has high standards which others may find difficult to achieve. Tries to solve problems when under stress.</p>	
Moderate scorer		
<p>Is organised and methodical when it suits. Or Shows as much concern over the detail as the next person. Or Is moderately tidy and organised.</p>		
Relationship with other scales	Positive	Negative
<p>Strongest correlations</p>	<p>Problem solving coping style</p>	<p>Behavioural stress symptoms Procrastination</p>

Scale 14: Self-esteem		
Low scorer		High scorer
Description Has high self-esteem.		Description Suffers from low self-esteem.
Typical item I have had a positive attitude towards myself.		Typical item I have felt I do not have much to be proud of.
Key behaviours Feels has many good qualities, has a positive attitude towards self, is satisfied with own achievements. Copes with stress using social networks, self-regulation and by trying to stay fit and healthy.		Key behaviours Feels like a failure, lacks self-respect, dislikes self. Tends to display broad range of stress symptoms as well as symptoms of depression and anxiety.
Moderate scorer		
Has self-esteem in some situations but not others. Or Has as much self-esteem as the average person. Or Feels fairly self-confident.		
Relationship with other scales	Positive	Negative
Strongest correlations	Depression Anxiety Emotional stress symptoms Behavioural stress symptoms Physical stress symptoms	Social support coping style Self-regulation Coping style Good health

Scale 15: Depressed		
Low scorer	High scorer	
<p>Description</p> <p>Feels comfortable with life and positive about the future.</p>	<p>Description</p> <p>Is prone to feeling depressed and pessimistic about the future.</p>	
<p>Typical item</p> <p>I have been full of energy.</p>	<p>Typical item</p> <p>I have felt depressed.</p>	
<p>Key behaviours</p> <p>Feels comfortable with self and happy with life. Feels positive about the future and looks on the bright side. Is generally relaxed, resilient and self-confident.</p>	<p>Key behaviours</p> <p>Feels depressed and is unhappy with self. Has frequent mood swings and tends to have a pessimistic outlook. Prone to worry and lacks self-confidence.</p>	
Moderate scorer		
<p>Is as comfortable with self as the average person. Or Feels depressed / low as often as the next person. Or Is fairly content with life.</p>		
Relationship with other scales	Positive	Negative
<p>Strongest correlations</p>	<p>Low self-esteem Anxiety Emotional stress symptoms Behavioural stress symptoms</p>	<p>Social support coping style Self-regulation Coping style Good health</p>

Scale 16: Anxious		
Low scorer	High scorer	
Description Presents self as stable and relaxed.	Description Displays symptoms of anxiety disorder.	
Typical item I have relived upsetting events from the past.		
Key behaviours Does not experience typical symptoms of anxiety disorder. Able to recognise and control feelings and emotions when under stress. Tries to stay fit and healthy.	Key behaviours Is afraid of many things, avoids social situations because of feelings of fear, has recurrent thoughts and images that have refused to go away, feels compelled to perform certain behaviours repeatedly.	
Moderate scorer		
Usually relaxed but occasionally feels anxious. Or Is as anxious as the average person. Or Is moderately anxious.		
Relationship with other scales	Positive	Negative
Strongest correlations	Low self-esteem Depression Emotional stress symptoms Behavioural stress symptoms	Self-regulation Coping style Good health

4.0 Interpretation and Feedback Report

4.1 Sten scores

The SAQ uses the standard ten (sten) scoring approach. To help professional users and clients understand what different sten scores mean, the SAQ interpretive model breaks the sten range into five categories. Table 2 illustrates the approach. For example, a sten of 8 indicates that the client has very high stress levels. A sten of 5 indicates that the client has average stress levels, and a sten of 4 indicates that the client has lower than average stress levels.

Table 2. SAQ scoring approach

Sten Range	Level	Meaning
8-10	5	Very high
7	4	High
5-6	3	Average
4	2	Low
1-3	1	Very low

Table 3 shows how a client's sten scores relate to percentiles. For example, a sten of 6 indicates that the client's stress levels are higher than those of about 60% of clients in the international the comparison group.

Table 3. Relationship between stens and percentiles

sten score	Higher than
10	99 % of clients in the comparison group
9	95 % of clients in the comparison group
8	90 % of clients in the comparison group
7	75 % of clients in the comparison group
6	60 % of clients in the comparison group
5	40 % of clients in the comparison group
4	25 % of clients in the comparison group
3	10 % of clients in the comparison group
2	5 % of clients in the comparison group
1	1 % of clients in the comparison group

4.2 Feedback report

The SAQ report provides interpretive text and graphical representation of the printed profile chart finished to publication quality output. The report is intended for the counsellor and the client but it is written in second person. It is intended to be transparent and make explicit the linkages between the scores and the text. The tone of the report is non-directive. The report has seven sections:

Section 1

Gives a brief introduction to the assessment and the structure of the report.

Section 2

Provides a summary of the factors that may be causing stress to do with work, relationships, parenting responsibilities and critical incidents.

Section 3

Assesses the extent to which the client is experiencing some of the common emotional, behavioural and physical symptoms of stress.

Section 4

Describes the extent to which the respondent uses differing coping strategies: social support, self-regulation, problem solving, distraction and health and fitness.

Section 5

Summarizes the degree to which the respondent's level of procrastination and perfectionism may be contributing factors.

Section 6

Indicates the impact of stress on the respondent's self-esteem and whether they are suffering from anxiety or depression.

Section 7

Contains a profile chart and stress symptoms checklist.

Annex 1 shows a sample feedback report.

5.0 Reliability and Validity

5.1 Internal consistency reliabilities

Table 4 presents internal consistency estimates based on Cronbach's coefficient alpha together with raw and sten score SEMs for the SAQ. These estimates are based on the SAQ international comparison group of 10,000 respondents. Section 6 provides information about the characteristics of this group.

High reliability is an important consideration for an assessment test and reliabilities in the range of 0.6 to 0.8 are generally considered acceptable for a psychometric scale. Overall, the SAQ scales have good internal consistency reliability. The internal consistencies range from 0.60 to 0.94 with a median of 0.80.

Table 4: Internal consistency reliabilities for the SAQ international comparison group (n = 10,000)

Scale	Alpha	Mean	SD	Raw score SEM	sten score SEM
Work	0.61	17.61	4.99	3.12	1.24
Relationship	0.80	14.60	6.32	2.83	0.88
Parenting	0.82	13.41	6.47	2.74	0.88
Emotional symptoms	0.86	16.01	7.10	2.66	0.81
Behavioural symptoms	0.82	16.87	6.08	2.58	0.90
Physical symptoms	0.80	15.09	6.54	2.92	0.95
Social Support	0.94	16.88	8.05	1.97	0.51
Self-Regulation	0.76	14.50	5.40	2.65	0.95
Problem Solving	0.84	15.34	5.95	2.38	0.87
Distraction	0.75	13.89	5.69	2.85	1.09
Health	0.60	17.36	5.25	3.32	1.24
Procrastination	0.75	16.91	5.48	2.74	0.98
Perfectionism	0.60	19.25	4.24	2.68	1.42
Self-Esteem	0.88	16.63	7.03	2.44	0.66
Depression	0.79	17.97	5.76	2.64	0.88
Anxiety	0.83	17.02	6.85	2.82	0.85
Median	0.80	16.75	6.02	2.71	0.89

The Standard Error of Measurement (SEM) provides an error band around a score. There is a 68% chance that a person's true score on a trait will be within one SEM of the observed score and the person's real score will fall outside a two SEM band only 5% of the time. The SAQ raw score SEMs range from 1.97 to 3.32 with a median SEM of 2.71. The sten score SEMs range from 0.51 to 1.42 with a median of 0.89.

This indicates that a person's true score on one of the trait scales will be about one sten either side of the observed score. This is the band of error around scores shown on the

profile chart. There should be two stens difference between scores of two people on the same scale before it can be said that there is a reliable difference on that characteristic – for example, John is more likely to adopt a social support coping style than Jim.

5.2 SAQ scale intercorrelations

Table 5 shows the intercorrelations of the SAQ scales. The strongest correlations are to be found within two clusters of scales that were identified by exploratory factor analysis. The first cluster of scales measures the sources and symptoms of stress, anxiety and depression. The second cluster measures coping strategies. Section 5.5 gives more information about these two clusters of scales.

5.3 Intercorrelations and reliability

Intercorrelations corrected for unreliability show how effectively a questionnaire differentiates between the constructs it is designed to measure. Less than 50% shared by any two scales is a good indicator that the scales are measuring different things. Table 6 shows the percentage of common reliable variance for the SAQ scales. Overall, 51% of the scale pairs share less than 25% common variance and 83% of the scale pairs share less than 50% common reliable variance. There is reasonable to good differentiation within the sources of stress scales, the coping style scales and the personality scales but less differentiation within the symptoms of stress scales and the mental health scales.

5.4 Standard error of difference

The SEd gives an indication of what constitutes a real difference between a person's scores on any pair of scales. The SEd depends on the reliability of the scales – the higher the reliability the smaller the SEd is. If there are two full SEds between the scores on two scales, then there is a 95% likelihood that there is a real difference. The SEds for the scales range from 0.83 to 1.89 with a median of 1.31 (Table 7). This means that you need to see a difference of about 3 Stens before you can infer that a client has more of one characteristic than the other – for example, John has more anxiety symptoms than depressive ones.

Table 5: Intercorrelations of SAQ scales (n=4,554)

Scale	Work	Relationship	Parenting	Emotional symptoms	Behavioural symptoms	Physical symptoms	Social Support	Self-Regulation	Problem Solving	Distraction	Health	Procrastination	Perfectionism	Self-Esteem	Depression	Anxiety
Work	1.00	0.25	0.25	0.32	0.38	0.26	-0.32	-0.38	-0.28	-0.24	-0.40	-0.36	-0.17	0.48	0.50	0.33
Relationship		1.00	0.41	0.35	0.44	0.28	-0.44	-0.38	-0.25	-0.10	-0.38	-0.34	-0.28	0.46	0.44	0.36
Parenting			1.00	0.40	0.42	0.34	-0.37	-0.40	-0.16	-0.04	-0.33	-0.37	-0.28	0.47	0.40	0.38
Emotional				1.00	0.79	0.77	-0.14	-0.52	0.04	0.17	-0.44	-0.47	-0.35	0.58	0.62	0.89
Behavioural					1.00	0.72	-0.15	-0.48	-0.01	0.14	-0.57	-0.53	-0.48	0.61	0.64	0.77
Physical						1.00	-0.06	-0.37	0.09	0.25	-0.35	-0.51	-0.34	0.42	0.46	0.74
Social Support							1.00	0.37	0.50	0.47	0.31	0.31	0.11	-0.44	-0.44	-0.14
Self-Regulation								1.00	0.49	0.30	0.48	0.46	0.23	-0.61	-0.65	-0.49
Problem Solving									1.00	0.69	0.34	0.30	0.11	-0.39	-0.41	0.03
Distraction										1.00	0.22	0.15	-0.07	-0.26	-0.31	0.16
Health											1.00	-0.45	-0.50	0.61	0.64	0.44
Procrastination												1.00	0.31	-0.54	-0.57	-0.47
Perfectionism													1.00	-0.35	-0.32	-0.32
Self-Esteem														1.00	0.77	0.59
Depression															1.00	0.62
Anxiety																1.00

Table 6: Percentage of common reliable variance for SAQ scales (n=4,554)

Scale	Relationship	Parenting	Emotional symptoms	Behavioural symptoms	Physical symptoms	Social Support	Self-Regulation	Problem Solving	Distraction	Health	Procrastination	Perfectionism	Self-Esteem	Depression	Anxiety
Work	0.13	0.13	0.20	0.29	0.14	0.18	0.32	0.16	0.12	0.44	0.28	0.08	0.43	0.52	0.22
Relationship		0.25	0.18	0.29	0.12	0.26	0.24	0.09	0.02	0.30	0.19	0.16	0.30	0.31	0.20
Parenting			0.23	0.27	0.17	0.17	0.26	0.04	0.00	0.22	0.22	0.16	0.31	0.25	0.21
Emotional				0.88	0.87	0.03	0.42	0.00	0.04	0.38	0.34	0.24	0.44	0.57	1.11
Behavioural					0.78	0.03	0.38	0.00	0.03	0.66	0.46	0.47	0.52	0.63	0.87
Physical						0.00	0.23	0.01	0.10	0.26	0.43	0.24	0.25	0.33	0.82
Social Support							0.19	0.31	0.31	0.17	0.14	0.02	0.23	0.26	0.03
Self-Regulation								0.38	0.16	0.51	0.37	0.12	0.56	0.70	0.38
Problem Solving									0.76	0.23	0.14	0.02	0.21	0.25	0.00
Distraction										0.11	0.04	0.01	0.10	0.16	0.04
Health											0.45	0.69	0.70	0.86	0.39
Procrastination												0.21	0.44	0.55	0.35
Perfectionism													0.23	0.22	0.21
Self-Esteem														0.85	0.48
Depression															0.59

Table 7: SEd of SAQ scales (n=4,554)

Scale	Relationship	Parenting	Emotional symptoms	Behavioural symptoms	Physical symptoms	Social Support	Self-Regulation	Problem Solving	Distraction	Health	Procrastination	Perfectionism	Self-Esteem	Depression	Anxiety
Work	1.52	1.52	1.48	1.53	1.56	1.34	1.56	1.51	1.65	1.75	1.58	1.89	1.40	1.52	1.50
Relationship		1.24	1.20	1.26	1.29	1.02	1.29	1.24	1.40	1.52	1.32	1.67	1.10	1.24	1.22
Parenting			1.20	1.26	1.29	1.02	1.29	1.24	1.40	1.52	1.32	1.67	1.10	1.24	1.22
Emotional				1.21	1.25	0.96	1.25	1.19	1.36	1.48	1.27	1.63	1.04	1.20	1.17
Behavioural					1.31	1.03	1.31	1.25	1.41	1.53	1.33	1.68	1.12	1.26	1.24
Physical						1.08	1.34	1.29	1.45	1.56	1.36	1.71	1.16	1.29	1.27
Social Support							1.08	1.01	1.20	1.34	1.10	1.51	0.83	1.02	0.99
Self-Regulation								1.29	1.45	1.56	1.36	1.71	1.16	1.29	1.27
Problem Solving									1.39	1.51	1.31	1.67	1.09	1.24	1.22
Distraction										1.65	1.47	1.79	1.27	1.40	1.38
Health											1.58	1.89	1.40	1.52	1.50
Procrastination												1.73	1.18	1.32	1.30
Perfectionism													1.57	1.67	1.65
Self-Esteem														1.10	1.08
Depression															1.22

5.5 Factor analysis

Principal components extraction with oblique rotation was performed on the SAQ scales on a subset of the norms sample of 10,000 respondents – that is, 4,554 respondents who had answered all the items. Five thousand four hundred and forty six respondents did not have a partner or parental responsibilities and did not complete the items for scales 2 and 3. Oblique rotation was used because many correlations in the correlation matrix exceeded 0.30.

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was 0.92, well above 0.6 required for a good factor analysis. Two factors were extracted with eigenvalues over 1 accounting for 60% of the variance. The variables were moderately well-defined by the factor solution. Communality values ranged from 0.27 to 0.83 with a median value of 0.66.

Table 8: Factor structure of SAQ scales (n=4,554)

Scale	F1	F2	Communality
Work	0.35	-0.38	0.35
Relationship	0.42	-0.30	0.35
Parenting	0.49	-0.19	0.34
Emotional symptoms	0.96	0.20	0.83
Behavioural symptoms	0.94	0.13	0.82
Physical symptoms	0.90	0.32	0.73
Social support	-0.05	0.72	0.54
Self-regulation	-0.48	0.47	0.59
Problem solving	0.18	0.91	0.75
Distraction	0.37	0.91	0.74
Procrastination	0.54	-0.35	0.54
Health	-0.57	0.26	0.49
Perfectionism	-0.52	0.00	0.27
Self-esteem	0.62	-0.42	0.73
Depression	0.63	-0.43	0.76
Anxiety	0.94	0.20	0.80
Percent of variance	43.58	16.66	
Percent of covariance	72.34	27.66	

Extraction Method: Principal Component Analysis. Rotation Method: Prmax with Kaiser Normalization. Loadings of .45 and above in bold.

Table 8 shows the factor structure of the questionnaire. The first factor in the solution is made up of a large number of the scales comprising the symptoms of stress and mental health. This seems to be a generalised measure of an individual's experience of stress. The second factor provides a measure of an individual's coping style made up of the distraction, problem solving and social support scales.

Table 9 shows that the correlation between the derived factors in the direction that might be expected. Stress symptoms are negatively related to a positive coping style.

Table 9: Intercorrelations of SAQ oblique factors (n=4,554)

Factor	Stress	Coping Style
Stress	1.00	-0.32
Coping Style		1.00

5.6 Relationship to other measures

Table 10 shows the relationship between seven of the SAQ scales and marker variables drawn from diagnostic criteria identified in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR Fourth Edition) and items in the International Personality Item Pool (IPIP, 2001¹). The demographic characteristics of the normative sample are described in Chapter 6.

Items from these two sources were included in the scales. For example, the SAQ Emotional Symptoms scale has two of the DSM-IV-TR diagnostic criteria for acute stress disorder. The SAQ Anxiety scale includes two items from the IPIP NEO N1 Anxiety scale. The figures reported in the table are the correlations between the marker variables and the total scale score.

The correlations in the normative sample range from 0.74 to 0.90 with a median correlation of 0.80.

Table 10: Correlations between SAQ scales and marker variables (n=10,000)

SAQ Scale	r	Source of Markers
Emotional symptoms	0.83	DSM-IV-TR
Behavioural symptoms	0.83	DSM-IV-TR
Procrastination	0.74	IPIP
Perfectionism	0.70	IPIP
Self-Esteem	0.90	IPIP
Depression	0.80	IPIP
Anxiety	0.79	IPIP
Median	0.80	

All correlations significant at 1% level

¹ The International Personality Item Pool is a "scientific collaboratory for the development of advanced measures of personality and other individual differences". A collaboratory is defined as a computer-supported system that allows scientists to work with each other, facilities, and data bases without regard to geographical location.

5.7 Criterion validity

In order to assess the criterion-related validity of the SAQ, we carried out an analysis of correlations between the SAQ factors and the Holmes-Rahe scale score. The Holmes-Rahe scale provides an indication of the degree of stress experienced based on exposure to critical life incidents – for example, separation, bereavement etc. In order to assess stress according to the Holmes and Rahe Stress Scale, the numbers of "Life Change Units" that apply to events in the past year of an individual's life are added and a weighted total score provides a rough estimate of how stress affects health.

Table 11 shows the frequency of some stressful incidents experienced by respondents in the international comparison group. These incidents are twenty of the forty incidents in the Holmes-Rahe scale. The most frequently occurring stressful incidents experienced by about 40% of respondents were a "major change in sleeping habits" and a "major change in finances".

Table 11: Most frequently occurring stressful incidents (n=10,000)

	Incident	Frequency	Percent
1	Major change in sleeping habits	4,069	40.69
2	Major change in finances	3,711	37.11
3	Increase in number of arguments with partner	3,284	32.84
4	Sexual difficulties	3,185	31.85
5	Major change in eating habits	3,025	30.25
6	Major change at work - merger, reorganization, bankruptcy	2,971	29.71
7	Death of a close family member	2,827	28.27
8	Major change in the health or behavior of a family member	2,821	28.21
9	Major change in living conditions	2,719	27.19
10	Major change in responsibilities at work	2,640	26.40
11	Change to different line of work	2,533	25.33
12	Moving house	2,467	24.67
13	Major change in working hours or conditions	2,424	24.24
14	Major change in social activities	2,349	23.49
15	Separating from your partner	2,319	23.19
16	Taking out a mortgage or loan for a major purchase	2,203	22.03
17	Taking out a loan for a purchase	2,163	21.63
18	Trouble with boss	2,150	21.50
19	Major personal injury or illness	2,139	21.39
20	Major change in usual type and/or amount of recreation	2,001	20.01

Table 12 shows the numbers of SAQ respondents in the Holmes-Rahe at risk categories. About one third of the sample fell into the "at risk of illness" category and one third into the "slight risk of illness" category. About 4 out of 10 respondents were in the middle moderate risk of illness category.

Table 12: Number of respondents in Holmes-Rahe Scale at risk categories (n=10,000)

Category	Percent
Score of 300 and over--at risk of illness	32.79
Score of 150 to 299--risk of illness is moderate	38.73
Score up to 149--a slight risk of illness.	28.48
Total	100.00

Table 13 shows the correlations between the SAQ stress symptoms scale scores and respondents' experience of stressful incidents. There is a significant correlation at 0.3 between the SAQ generalised stress symptoms factor and the Holmes-Rahe scale weighted score, and correlations between 0.18 and 0.28 with the individual SAQ symptoms and mental health scales. The median correlation is 0.25. The table also shows the correlations when a simple raw score total is created from the sum of the number of the number of stressful incidents experienced.

Table 13: Correlations between SAQ and Holmes-Rahe Scale (n=10,000)

Scale	Holmes-Rahe Weighted Score	Simple Raw Score Total
SAQ stress factor	0.30	0.30
Behavioural symptoms	0.28	0.29
Emotional symptoms	0.27	0.28
Anxiety	0.25	0.26
Physical symptoms	0.24	0.25
Depression	0.22	0.23
Self-esteem	0.18	0.20
Health	-0.23	-0.24
Median	0.25	0.26

All correlations significant at 1% level

5.8 Demographics and SAQ scales

Table 14 shows the correlations between the SAQ scales, age and gender. There are statistically significant differences related to age and gender but the magnitude of these differences is very small. They reach statistical significance due to the large sample size. There is no need for separate norms for men and women or for different age groups because the observed differences are so small.

Age

There are statistically significant correlations in 15 scales but only two correlations exceed 0.10 in absolute magnitude. Older people tend to be slightly more dissatisfied with their relationship and they tend to be able to control their feelings and emotions slightly better than younger people.

Gender

There are 14 statistically significant correlations related to gender but only four correlations exceed 0.10 in absolute magnitude. Women tend to experience slightly higher stress due to parenting responsibilities, and they tend to score higher on the Emotional, Physical and Depression scales. These differences are consistent with those reported by Costa and McCrae (1991) for Neuroticism.

Table 14: Correlations of SAQ scores with age and gender (n=10,000)

Scale	Age	Gender
Work	0.02*	0.00
Relationship	0.11**	-0.02
Parenting	-0.02	0.16**
Emotional symptoms	-0.09**	0.16**
Behavioural symptoms	-0.05**	0.08**
Physical symptoms	-0.10**	0.11**
Social Support	-0.08**	0.02*
Self-Regulation	0.15**	-0.14**
Problem Solving	0.09**	0.02*
Distraction	-0.03**	0.06**
Health	-0.06**	-0.08**
Procrastination	-0.11**	0.03**
Perfectionism	0.05**	0.03**
Self-Esteem	-0.10**	0.09**
Depression	-0.08**	0.10**
Anxiety	-0.10**	0.07**
Median	-0.06**	0.04**

** Significant at 0.01 level, * Significant at 0.05 level (2-tailed). Gender was coded 1 for male and 2 for female. N for Relationship was 6,894 and N for Parenting was 5,225.

6.0 Norms

6.1 SAQ normative sample

SAQ norms are based on an international sample of 10,000 men and women who completed the questionnaire on the internet between 2003 and 2011. The normative sample is made up of incidental samples of 5,000 men and 5,000 women. The male and female samples were selected from a larger sample of over 25,000 respondents two thirds of whom were women. The norm groups were created by screening out respondents aged under 16 or over 65. Duplicate cases were removed from the database and random samples of cases were created using SPSS.

Age

The mean age of the sample is 34 with a standard deviation of 12. Table 15 shows the age distributions of the male and female samples. The mean age of the male sample is 35 years with a standard deviation of 12. The mean age of the female sample is 33 with a standard deviation of 12.

Occupation

Respondents come from over 70 occupational sectors. Table 16 shows the top twenty occupational groups according to the number of SAQ respondents. About one fifth of the respondents were employed in education or health services.

Table 15: Age distribution of international comparison group (n=10,000)

Age group	Male (%)	Female (%)	Total (%)
16-24	21.62	30.22	25.92
25-34	28.92	28.07	28.50
35-44	26.23	23.99	25.11
45-54	15.55	13.70	14.62
55-64	7.68	4.02	5.85
Total	100.00	100.00	100.00

Table 16: Top twenty occupational backgrounds of respondents in the international comparison group (n=10,000)

Sector	N	Percent
Education	1,133	11.3
Health services	832	8.3
Government	590	5.9
Sales	389	3.9
Construction	336	3.4
Food/beverage	295	3.0
Computer-related services	285	2.9
Accounting	280	2.8
Retail/wholesale &	272	2.7
Other non-profit	267	2.7
Engineering	262	2.6
Computers/software	254	2.5
Medical/health care devices	227	2.3
Food service/lodging	211	2.1
Social services	204	2.0
Transportation	193	1.9
Legal services	172	1.7
Military	165	1.7
Telecommunications	158	1.6
Advertising/marketing	154	1.5

Nationality

Information about the respondent's nationality was not recorded but an indication of the country composition of the sample is provided by an analysis of website visits. Table 17 shows the country composition of visits to the main website where data was collected recorded by Google Analytics. This suggests that the majority of respondents were from the United States, the United Kingdom, Canada and Australia.

Table 17: Country composition of website visits (n=187,296)

Country	Visits	Percent
United States	91,801	49.0
United Kingdom	38,086	20.3
Australia	14,873	7.9
Canada	11,669	6.2
India	4,599	2.5
New Zealand	3,004	1.6
Ireland	2,151	1.1
South Africa	1,873	1.0
Philippines	1,416	0.8
Mexico	1,273	0.7
Other countries	16,551	8.9
Total	187,296	100.00

Table 18 shows the SAQ general population norm group using the standard ten (sten) scale and Table 19 provides percentiles for the group.

Table 18: SAQ general population norms (n = 10,000*)

Scale	sten										Scale	Mean	SD
	1	2	3	4	5	6	7	8	9	10			
Work	0-8	9-10	11-13	14-15	16-17	18-20	21-23	24-25	26-28	29-32	Work	17.61	4.99
Relationship	0-2	3-4	5-8	9-12	13-15	16-18	19-21	22-24	25-27	28-32	Relationship	14.60	6.32
Parenting	0-1	2-3	4-6	7-10	11-14	15-17	18-20	21-23	24-26	27-32	Parenting	13.41	6.47
Emotional symptoms	0-2	3-5	6-9	10-12	13-16	17-20	21-24	25-27	28-30	31-32	Emotional	16.01	7.10
Behavioural symptoms	0-4	5-7	8-11	12-14	15-17	18-20	21-23	24-26	27-28	29-32	Behavioural	16.87	6.08
Physical symptoms	0-2	3-5	6-8	9-12	13-15	16-18	19-22	23-25	26-28	29-32	Physical	15.09	6.54
Social Support	0	1-4	5-8	9-13	14-17	18-21	22-25	26-30	31	32	Social Support	16.88	8.05
Self-Regulation	0-4	5-6	7-9	10-12	13-15	16-17	18-20	21-23	24-26	27-32	Self-Regulation	14.50	5.39
Problem Solving	0-3	4-7	8-10	11-13	14-15	16-18	19-21	22-25	26-28	29-32	Problem Solving	15.34	5.95
Distraction	0-3	4-6	7-9	10-11	12-14	15-16	17-19	20-23	24-28	29-32	Distraction	13.89	5.69
Health	0-5	6-8	9-12	13-14	15-17	18-20	21-22	23-25	26-28	29-32	Health	16.91	5.48
Procrastination	0-11	12-13	14-15	16-17	18-19	20-21	23-24	25-26	27-28	29-32	Procrastination	19.25	4.24
Perfectionism	0-2	3-5	6-9	10-13	14-17	18-20	21-24	25-27	28-30	31-32	Perfectionism	16.63	7.03
Self-Esteem	0-5	6-9	10-12	13-15	16-18	19-21	22-24	25-26	27-29	30-32	Self-Esteem	17.97	5.76
Depression	0-3	4-6	7-10	11-14	15-17	18-21	22-24	25-27	28-29	30-32	Depression	17.02	6.85
Anxiety	0-7	8-10	11-12	13-15	16-17	18-20	21-23	24-26	27-28	29-32	Anxiety	17.36	5.25

N for Relationship was 6,894 and N for Parenting was 5,225.

Table 19: Percentiles for SAQ scales (n = 10,000*)

Raw Score	Work	Relationship	Parenting	Emotional symptoms	Behavioural symptoms	Physical symptoms	Social Support	Self-Regulation	Problem Solving	Distraction	Health	Procrastination	Perfectionism	Self-Esteem	Depression	Anxiety
0		1	1	1	1	1	2		1	1				1		1
1		2	3	2	1	1	4		1	1				2		1
2		3	5	3	1	2	5	1	2	2		1		3	1	2
3		5	7	4	2	4	6	2	2	3		1		4	1	3
4		7	10	6	3	6	8	3	4	4	1	2		5	2	4
5	1	9	13	8	4	8	10	5	5	6	1	3		7	2	6
6	1	11	17	10	5	10	11	7	7	8	2	4		9	3	8
7	2	15	20	13	7	13	14	10	9	11	3	5		12	4	10
8	4	18	24	16	9	17	17	14	12	15	4	7	1	14	6	13
9	5	22	29	19	12	21	20	18	16	20	7	9	1	16	8	15
10	8	26	33	23	15	25	23	23	20	27	9	12	2	19	10	18
11	11	31	38	27	18	30	26	29	25	33	13	15	3	22	12	22
12	15	36	43	32	23	35	29	35	30	41	17	20	5	27	16	25
13	19	41	49	36	28	40	32	42	37	48	22	25	7	32	21	30
14	26	48	55	41	34	46	36	50	44	57	29	32	12	37	26	35
15	33	54	60	47	40	53	42	57	52	65	36	38	18	42	32	39
16	43	61	68	53	47	59	48	66	60	73	45	47	27	49	39	45
17	51	67	74	58	54	65	54	72	67	79	53	55	35	55	46	51

18	59	73	79	64	61	71	59	79	73	83	61	62	44	60	52	57
19	65	78	83	68	67	76	63	84	78	87	67	68	53	65	59	62
20	72	83	87	73	72	80	66	88	82	90	73	75	62	70	66	68
21	78	86	90	77	77	83	69	90	86	92	79	80	71	75	73	73
22	83	89	92	80	82	87	73	93	89	93	83	84	77	79	78	77
23	87	92	94	83	86	89	76	95	91	94	87	89	83	82	83	81
24	91	94	96	87	89	91	81	96	92	94	90	92	89	86	87	85
25	94	96	97	90	92	93	85	97	94	95	93	94	93	89	90	89
26	96	97	98	92	94	95	87	98	96	96	95	96	95	91	94	92
27	98	98	98	95	96	97	89	99	97	97	97	97	97	93	96	95
28	99	99	99	96	98	98	91		98	98	98	98	99	95	97	96
29				98	99	99	93		99	99	99	99		97	98	98
30				98			96							98	99	99
31				99			98							99		
32																

N for Relationship was 6,894 and N for Parenting was 5,225.

7.0 References

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Annex 1. Sample Feedback Report