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The Four-Dimensional Symptom Questionnaire (4DSQ) detects psychological problems

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Abstract

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One in every three or four adult general practice patients has psychological complaints. The Four-Dimensional Symptom Questionnaire (4DSQ) is a convenient tool to assist the general practitioner (GP) to determine whether further action is required, and if so, which action. The GP can use the 4DSQ to distinguish between psychosocial complaints and depressive and anxiety disorders, to quantify the severity of suffering, to detect somatization and to monitor the course of the problems. After a patient has filled in the 4DSQ the GP and the patient can discuss the results of the 4DSQ together, formulate a shared 'diagnosis' and draw up a treatment plan.
The 4DSQ measures four dimensions of psychological symptoms: distress, depression, anxiety and somatization. Distress is a non-specific measure of the severity of psychological suffering. Depression and anxiety are specific symptoms of severe depressive and anxiety disorders. Somatization refers to the experience of bodily distress and the tendency to be worried about it. Almost the entire range of psychological and psychosomatic symptoms can be covered by these four dimensions.

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Conflict of interest: B. Terluin is copyright holder of the Four-Dimensional Symptom Questionnaire (4DSQ) and receives royalties from companies that make use of the 4DSQ on a commercial basis. He receives fees for presentations and workshops on the 4DSQ.

Core messages

► The 4DSQ is a convenient tool with which to assess common psychosocial symptoms and to determine whether further diagnosis is necessary.
► Discussing the 4DSQ scores is a good way to involve the patient in formulating a shared 'diagnosis' and a treatment plan.

Introduction

Mr. Ravenstein is a healthy 47 year old instrument maker. He is married and has a daughter of 17. His medical record is void of any serious health problems. He visits his GP because he had recently had headaches and is very tired. He is still working and has not reported sick. On questioning, Mr. Ravenstein admits that his work is stressful, and that he is also worried about his blood pressure. The GP reassures him with regard to his blood pressure and asks him to fill in a 4DSQ in order to see how serious his stress is. The 4DSQ scores are: distress 15, depression 0, anxiety 4, somatization 12. The distress and somatization scores are moderately high; the depression and anxiety scores are low. One week later, Mr. Ravenstein tells his doctor that, only when filling in the 4DSQ did he realize how much he was bothered by problems at work. Indeed, the scores do indicate stress, and the GP suggests to him that he makes an appointment with the occupational health physician. In order to prevent a nervous breakdown, it is important to deal with the stress at work.

One in every three or four adult general practice patients has psychological complaints. This presents GPs with two major problems. Firstly, how to make a distinction between a psychiatric disorder and psychosocial problems, which people have to deal with themselves? Secondly, how to help people to realize that their physical complaints may be associated with psychological problems? More and more GPs are using the 4DSQ as a tool to detect psychological problems, to assess them and to discuss them with the patient. This article starts with a short description of the background of the 4DSQ. Subsequently, we will discuss how to use the 4DSQ in general practice, how to interpret

the scores and how to use this information in a conversation with the patient. This discussion is partly based on scientific evidence, but also on our personal experience with the 4DSQ in daily practice.

Background

The 4DSQ was developed as a result of our research among patients with a 'nervous breakdown' in general practice.[1] Most patients with a 'nervous breakdown' present with a characteristic syndrome, comprising mainly non-specific distress symptoms. To some extent, these distress symptoms can be distinguished from symptoms of depression, anxiety and somatization. These four dimensions cover almost the entire range of psychological and psychosomatic complaints. The 4DSQ consists of fifty items concerning complaints in the past seven days. The items are distributed over four scales, one for each dimension (for examples of questions, see Table 1). The distress scale measures non-specific (psychological) distress. The depression scale measures symptoms of a depressive disorder. The anxiety scale measures symptoms that are characteristic of anxiety disorders. The somatization scale measures symptoms of bodily distress.

Patient with a more or less pure 'nervous breakdown' will score high on distress and low on depression and anxiety. Patients with depressive or anxiety disorders also score high on distress, but they also score high on depression or anxiety, respectively. Most patients who score high on somatization, also score high on distress, but some patients combine a high somatization score with a relatively low distress score. Information on the reliability and validity of the 4DSQ has been published elsewhere.[2]

Objectives

Detection of psychosocial problems within the framework of a dual track policy

Especially in patients with 'medically unexplained physical symptoms' the 4DSQ can help in the initiation of a discussion about psychosocial problems. These patients are often very worried about their physical complaints. They want their doctor to take them seriously and to investigate the possibility of a physical cause. They are often aware, at least to some extent, of the role of 'stress'. However, they can only come to acknowledge that fact and discuss it with the GP, when they feel assured that the GP is taking the somatic side of the problem seriously. The GP can reassure them by saying something like the following.

'You are concerned that you may have a serious disease. I also asked you if stress could possibly play a role, and you told me that that might be possible, because you have experienced some unpleasant events recently. I would like to suggest that we are going to have a good look at both your physical health and your mental health. With regard to your physical health, I suggest that I give you a physical examination and to have your blood tested in the laboratory. To assess your mental health I suggest that you fill in a questionnaire about your complaints. Then we can discuss the results next week.'

As the patient has to tick an increasing number of psychological complaints while filling in the 4DSQ, he will become more aware of his psychosocial problems, which were more or less pushed aside by worries about his physical health. Consequently, the patient will become more willing to discuss these problems with the GP, especially if the physical examination and lab-tests show no signs of somatic disorders.

Table 1 Examples of items and response categories of the Four-Dimensional Symptom Questionnaire (4DSQ)*

Scale	Examples of items	Response categories				
		no	sometimes	regularly	often	very often or constantly
	During the past week, …					
Distress	did you feel easily irritated?	☐	☐	☐	☐	☐
	did you feel that you can't cope anymore?	☐	☐	☐	☐	☐
Depression	did you feel that you can't enjoy anything anymore?	☐	☐	☐	☐	☐
	did you ever think "If only I was dead"?	☐	☐	☐	☐	☐
Anxiety	did you suffer from anxiety or panic attacks?	☐	☐	☐	☐	☐
	were you afraid of becoming embarrassed when with other people?	☐	☐	☐	☐	☐
Somatization	did you suffer from palpitations?	☐	☐	☐	☐	☐
	did you suffer from pain in the abdomen or stomach area?	☐	☐	☐	☐	☐

* The full 4DSQ can be downloaded from www.emgo.nl/researchtools/4dsq.asp.

Quantifying the severity of the problems
The distress score, in particular, gives a good indication of the severity of the patient's psychological suffering. The higher the distress score, the greater the suffering, and the higher the risk of social disfunctioning.

Detection of depressive and anxiety disorders
In a standardized psychiatric interview more than half of the patients who the GP has diagnosed with a 'nervous breakdown', appear to fulfil the criteria for DSM-IV diagnoses of depressive and/or anxiety disorder.[3] One quarter of the patients with a 'nervous breakdown' have a serious depressive disorder and/or a panic or phobic disorder for which specific treatment is needed. The 4DSQ depression and anxiety scores help the GP to identify those patients for whom further diagnosis could be worthwhile.

Identifying and explaining somatization
High somatization scores give the GP the opportunity to provide an acceptable explanation of medically unexplained physical symptoms, to reassure the patient, and to focus the discussion on psychosocial issues.

Monitoring the course
If, after a few weeks or months of treatment, patients say they are feeling better, it is often difficult to establish whether the patient is cured or whether there are still residual symptoms. Especially in the case of depressive disorders, a so-called 'partial recovery' is notorious because of the risk of relapse or recurrence after completion of the antidepressant treatment. The 4DSQ offers the opportunity to objectify the degree of recovery. If the patient is not sufficiently recovered, then the 4DSQ score can provide the motivation to intensify the treatment.
The 4DSQ is freely available for non-commercial use in health care and scientific research at www.emgo.nl/researchtools/4dsq.asp.

Practical issues

Preparation
One should not ask a patient to fill in a 4DSQ immediately. It is important to explain the goal of the questionnaire first. The patient must understand that psychological factors might play a role in his complaints. If the patient presents physical complaints, which the GP suspects could be associated with psychosocial factors, it is important that the GP explicitly explains this possibility to the patient at some time during the consultation. A half-hearted confirmation that 'it could perhaps be possible' is all the GP needs to suggest to the patient that this should also be investigated.

Completion of the questionnaire
There is a case for striking the iron while it is hot, and asking the patient to complete the 4DSQ immediately after the consultation, before leaving the practice. When the patient hands over the completed questionnaire to the doctor's assistant, she can then immediately make an appointment for the patient to discuss the results with the GP. However, if the patient prefers to complete the questionnaire at home at a later moment, with or without the help of others, that is all right. Completion of the 4DSQ takes an average of 5-10 minutes.

Scoring
Each 4DSQ item provides 0, 1 or 2 points: 0 points if a symptoms is absent, 1 point if a symptom is 'sometimes' present, and 2 points if a symptom is 'regularly' or more often present.

Interpretation and discussion of the 4DSQ scores

Each 4DSQ scale has two cut-off points, that divide the scores into 'low', 'moderately high and 'very high'. *Table 2* presents an overview of the cut-off points and their meaning for each of the scales. Low scores do not need any special attention; they are usually associated with normal levels of distress, in which case the patient's functioning is unaffected. Moderately high scores indicate that there might be something wrong. It is recommended that this signal should be discussed with the patient and, if necessary, a follow-up appointment should be made. In the case of a very high score, action must always be taken. The GP explains to the patient what the 4DSQ scales generally measure, and subsequently, together with patient searches for the individual meaning of the 4DSQ scores. The goal is to arrive at a shared 'diagnosis' and a joint plan of action. Since it is the patient's own problem, he must do most of the work. The 'diagnosis' and plan of action do not necessarily need to be finished within one consultation. Patients often need time to process the information, ask questions or discuss the complaints with other people. There is no point in making a diagnosis that the patient does not agree with; that is unlikely to result in successful treatment.

Table 2 Interpretation of the 4DSQ scores

Scale	Low	Moderately high	Very high
Distress	0-10: normal distress; in principle no action necessary	11-20: increased distress with the threat of disfunctioning; stress reduction is desirable	21-32: severe distress with high risk of disfunctioning (sick leave); stress reduction is indicated
Depression	0-2: probably no depressive disorder	3-5: possible depressive disorder; wait-and-see and re-evaluation after a few weeks; if indicated clinical depression diagnosis	6-12: relatively high risk of a depressive disorder; clinical depression diagnosis is indicated
Anxiety	0-7: probably no anxiety disorder	8-12: possible anxiety disorder; wait-and-see and re-evaluation after a few weeks; if indicated clinical anxiety diagnosis	13-24: relatively high risk of one or more anxiety disorders; clinical anxiety diagnosis is indicated
Somatization	0-10: relatively normal bodily reaction to stress	11-20: possible somatization with the threat of disfunctioning; discuss with patient	21-32: high risk of somatization; discuss with patient, consider cognitive behavioural therapy or referral

Distress
The distress score indicates how much tension (stress) the patient is experiencing, and how difficult it is to continue to function. A high distress score indicates that there is something wrong, but it does not tell *what* is wrong. The distress score is associated with work stress, psychosocial problems and stressful life events, and with the risk of sickness absence.[2]

GP: 'I will explain to you what the 4DSQ scores mean. The 4DSQ measures four kinds of complaints, namely distress, depression, anxiety and somatization. For each of these types of complaints you will get a score. Distress means stress or tension. Your score on the distress scale is 26 points, which is very high. This score tells me that you are having a very difficult time. The score does not tell me *why* you are having a difficult time, but we can talk about that later.'

Depression
The higher the depression score, the greater the risk of (severe) depressive disorder. With respect to the criteria in the Dutch Association of General Practitioners' Guidelines for Depressive Disorder [which are largely in accordance with the DSM-IV criteria] the 4DSQ depression score has an area under the curve (AUC) of 0.88. This means that there is an 88% chance that a randomly chosen patient with depression has a higher score on the 4DSQ depression scale than a randomly chosen non-depressive patient.[4]

GP: 'The depression scale measures symptoms that are characteristic for a depressive disorder. Your score on that scale is 11 points, indicating that there is a relatively high risk that you have a depressive disorder. A depressive disorder is characterized by abnormal moodiness. Typical is a total or partial loss of ability to enjoy ordinary things. Do you think that you have such a disorder?'

A very high depression score, therefore, means: search for the disorder, together with the patient. A patient who is convinced of having a depressive disorder, can more easily be motivated for a specific treatment. To check the diagnosis, the GP can apply the criteria of the Guidelines for Depressive Disorder.

Anxiety
The higher the anxiety score, the greater the risk of one or more anxiety disorders. With respect to the DSM-IV diagnoses for panic disorder, agoraphobia and/or social phobia, the 4DSQ anxiety score has an AUC of 0.85 (unpublished data). A generalized anxiety disorder is not always associated with a high anxiety score, but almost always with a high distress score. A generalized anxiety disorder is characterized by chronic (i.e. more than 6 months) brooding and worrying. As with a very high depression score, a very high anxiety score implicates a search for the disorder, together with the patient.

GP: 'The anxiety scale measures symptoms that are associated with anxiety disorders. Your score on that scale is 20 points, which indicates that you have a relatively high risk of having an anxiety disorder. Anxiety is a normal emotion when there is a threat of danger. However, in the case of anxiety disorder the anxiety is not normal, because it is hardly or not at all associated with real danger. Do you recognize this type of abnormal anxiety in yourself?'

The Dutch Association of General Practitioners' Guidelines for Anxiety Disorders provides criteria to determine which anxiety disorders are involved, based on the focus of the anxiety, the situations in which it occurs, and the kind of avoidance behaviour.

Somatization
The GP can tell a patient with a high somatization score that the body reacts to tension and stress, and that, in principle, this is normal. In some patients 'sensitization', a kind of hypersensitivity of the body, can play a role.[5] In addition, the complaints can be amplified unintentionally by concern, incorrect ideas about the complaints, and illness behaviour that makes things worse, like resting when tired. The sensitization rationale offers the patient an elegant, guilt-reducing explanation of the physical complaints.

Discussion

With the aid of the 4DSQ the GP can assess four dimensions of psychological complaints. The most important dimension is distress. If the score on the distress scale is high, there is always something wrong. What is wrong can then become clear in the dialogue with the patient. If the distress score is high the patient is almost always aware of psychological problems. High scores on the depression and anxiety scales make the GP and the patient aware of the possibility of a psychiatric disorder that needs specific attention. The somatization scale indicates how strong the body reacts to the stress.
Although the 4DSQ does detect the most common psychological *complaints*, it does not necessarily detect all psychosocial *problems* in general practice. Up till now, due to lack of empirical data, it is unclear to what extent the 4DSQ anxiety score detects serious, though relatively uncommon anxiety disorders such as obsessive-compulsive disorder, posttraumatic stress disorder and hypochondria. In addition, little is known about how patients score on the 4DSQ, if they have specific phobias (such as fear of spiders or heights), disorders that are common but cause relatively little suffering. This latter limitation is perhaps not so serious, since GPs rarely encounter a request for help concerning specific phobias. However, when a patient really *suffers* as a consequence of psychological problems, irrespective of their nature, this suffering is likely to be expressed in a high distress score. Bereavement, as such, cannot be inferred from the 4DSQ scores, but may be an explanation for a high distress score. The answers to questions 47 and 48, that inquire about upsetting events, can alert the GP to coping problems. Behaviour that is not associated with psychological suffering, such as addiction, eating disorders and antisocial behaviour, will not be detected by the 4DSQ. In view of the prevalence of alcohol misuse, it is sensible to inquire about this specifically, irrespective of the 4DSQ scores.
Obviously, the 4DSQ is not safeguarded against fraud. However, practical experience teaches us that patients in general practice almost always fill in the questionnaire truthfully. Presumably, this is because patients do realize very well that if they deliberately fill in the questionnaire incorrectly, they can not expect their GP to be able to help them.

Conclusions

► The 4DSQ is a convenient tool with which common psychosocial complaints can be assessed.
► The 4DSQ detects almost all patients who suffer psychologically, irrespective of the specific cause.
► The 4DSQ specifically detects patients who have a relatively high risk of having a serious depressive or anxiety disorder that needs specific treatment.
► Discussing the 4DSQ scores with the patient is a good way to involve the patient in formulating the diagnosis and a treatment plan. This strengthens the patient's responsibility for the problem and motivation for treatment.

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