

Four Dimensional Symptom Questionnaire (4DSQ)

Author: Berend Terluin, MD, PhD

Introduction

The 4DSQ is a self-rating questionnaire measuring four dimensions of common psychopathology: distress, depression, anxiety and somatization. The 4DSQ was developed in general practice. The principal aim of the 4DSQ is to distinguish between stress-related syndromes (denoted as 'stress', 'burnout', 'nervous breakdown' or in Dutch 'overspanning' or 'surmenage') and psychiatric disorders (i.e. depression and anxiety disorders).

Content

The Distress scale measures nonspecific symptoms of psychopathology, ranging from worrying and irritability to fatigue and demoralization. As a general nonspecific component distress is always part of the symptomatology of anxiety and depressive disorders, in which case distress accompanies specific symptoms of anxiety or depression. Distress alone, or in combination with somatization, is characteristic of uncomplicated stress-related syndromes that are commonly encountered in general practice. The Distress score is associated with any psychosocial diagnosis as established by general practitioners (GPs) in general practice patients.

The Depression scale measures severe anhedonia and depressive thoughts, including suicidal ideation, symptoms that are characteristic of depressive disorders. The Depression score indicates the probability of having a major depressive disorder.

The Anxiety scale measures free floating anxiety, panic, and phobic anxiety, symptoms that are specific to the anxiety disorders. The Anxiety score indicates the probability of having one or more anxiety disorders.

The Somatization scale measures a range of common physical symptoms, known to be related to distress or psychopathology. Examples are headache, palpitations, nausea, and muscle aches. Moderate levels of somatization commonly accompany psychological distress that is not necessarily pathologic. High levels of somatization reflect pathological neurophysiological and psychological mechanisms such as 'sensitization', illness attributions and health anxiety. The Somatization score is associated with the GP's suspicion of a psychosocial background in patients presenting with physical symptoms.

Psychometric properties

Reliability of the 4DSQ scales is high with alpha-coefficients ranging from 0.84 to 0.94 and test-retest coefficients ranging from 0.89 to 0.94. The correlations between the 4DSQ-scales range from 0.35 to 0.71. The four-factor structure of the 4DSQ has been confirmed.

Measurement equivalence has been established across gender, age and socio-economic status. The 4DSQ can be used from the age of 10 years.

Applications

The 4DSQ can be used both in clinical practice, especially in general practice and occupational medicine, as well as in research.

Distribution

The 4DSQ is managed and distributed by Mapi Research Trust. The 4DSQ is free of charge for non-commercial use, for instance in clinical practice and unfunded research. People who wish to make use of the 4DSQ are referred to Mapi Research Trust (www.mapi-trust.org).

Questions regarding psychometric properties, translations and applications can be directed to the author [b.terluin@amsterdamumc.nl].

References

1. Terluin B, van Marwijk HWJ, Adèr HJ, de Vet HCW, Penninx BWJH, Hermens MLM, van Boeijen CA, van Balkom AJLM, van der Klink JJL, Stalman WAB: The Four-Dimensional Symptom Questionnaire (4DSQ): a validation study of a multidimensional self-report questionnaire to assess distress, depression, anxiety and somatization. *BMC Psychiatry* 2006; 6:34.
2. Terluin B, van Rhenen W, Schaufeli WB, de Haan M: The Four-Dimensional Symptom Questionnaire (4DSQ): measuring distress and other mental health problems in a working population. *Work Stress* 2004; 18:187-207.
3. Terluin B: De Vierdimensionale Klachtenlijst (4DKL). Een vragenlijst voor het meten van distress, depressie, angst en somatisatie [The Four-Dimensional Symptom Questionnaire (4DSQ)]. A questionnaire to measure distress, depression, anxiety, and somatization]. *Huisarts Wet* 1996, 39:538-547.
4. Terluin B, Rijmen F, van Marwijk HWJ, Stalman WAB. Waarde van de Vierdimensionale Klachtenlijst (4DKL) voor het detecteren van depressieve stoornissen [The Four-Dimensional Symptom Questionnaire's (4DSQ) value for the detection of depressive disorders]. *Huisarts Wet* 2007; 50: 300-5.
5. Terluin B, Terluin M, Prince K, van Marwijk HWJ. De Vierdimensionale Klachtenlijst (4DKL) spoort psychische problemen op. [Nascholing] *Huisarts Wet* 2008; 51: 251-5.
6. Terluin B, Neeleman-van der Steen CWM, Verbraak MJPM, Smitskamp JF, Duijsens IJ. Kunnen SCL-90-scores worden voorspeld op basis van 4DKL-scores? Vergelijking van de Vierdimensionale Klachtenlijst (4DKL) en de Symptom Checklist (SCL-90). *De Psycholoog* 2009; 44: 498-507.
7. Braam C, van Oostrom SH, Terluin B, Vasse R, de Vet HCW, Anema JR. Validation Study of a Distress Screener. *J Occup Rehabil* 2009; 19(3):231-7.
8. Brouwers EPM, Terluin B, Tiemens BG, Verhaak PFM. Predicting return to work in employees sick-listed due to minor mental disorders. *J Occup Rehabil* 2009; 19: 323-32.
9. Terluin B, Brouwers EPM, van Marwijk HWJ, Verhaak PFM, van der Horst HE. Detecting depressive and anxiety disorders in distressed patients in primary care; comparative diagnostic accuracy of the Four-Dimensional Symptom Questionnaire (4DSQ) and the Hospital Anxiety and Depression Scale (HADS). *BMC Fam Pract* 2009; 10:58.
10. Terluin B, van Rhenen W, Anema JR, Taris TW. Psychological symptoms and subsequent sickness absence. *Int Arch Occup Environ Health* 2011; 84(7):825-37
11. Langerak W, Langeland W, van Balkom AJLM, Draisma S, Terluin B, Draijer N. A validation study of the Four-Dimensional Symptom Questionnaire (4DSQ) in insurance medicine. *Work* 2012; 43(3): 369-80
12. Tebbe BBM, Terluin B, Koelewijn JM. Assessing psychological health in midwifery practice: A validation study of the Four-Dimensional Symptom Questionnaire (4DSQ), a Dutch primary care instrument. *Midwifery* 2013; 29: 608-15
13. Tebbe BBM, Terluin B, van Poppel MNM. Measuring maternal mental health using the Dutch Four-Dimensional Symptom Questionnaire (4DSQ): Pregnancy-related item bias across the perinatal period. *Midwifery* 2016; 40:192-9.
14. Terluin B, Oosterbaan DB, Brouwers EP, van Straten A, van de Ven PM, Langerak W, van Marwijk HW. To what extent does the anxiety scale of the Four-Dimensional Symptom Questionnaire (4DSQ)

detect specific types of anxiety disorder in primary care? A psychometric study. *BMC Psychiatry* 2014; 14(1):121.

15. Terluin B, Smits N, Miedema B. The English version of the four-dimensional symptom questionnaire (4DSQ) measures the same as the original Dutch questionnaire: A validation study. *Eur J Gen Pract* 2014.
16. Geraghty AWA, Stuart B, Terluin B, Kendrick T, Little P, Moore M. Distinguishing between emotional distress and psychiatric disorder in primary care attenders: A cross sectional study of the four-dimensional symptom questionnaire (4DSQ). *J Affect Disord* 2015; 184:198-204.
17. Chambe J, Le Reste JY, Maisonneuve H, Sanselme AE, Oho-Mpondo J, Nabbe P, Terluin B. Evaluating the validity of the French version of the Four-Dimensional Symptom Questionnaire with differential item functioning analysis. *Fam Pract* 2015; 32: 474-9.
18. Terluin B, Unalan PC, Turfaner SipahioÄÝlu N, Arslan Özkul S, van Marwijk HWJ. Cross-cultural validation of the Turkish Four-Dimensional Symptom Questionnaire (4DSQ) using differential item and test functioning (DIF and DTF) analysis. *BMC Fam Pract* 2016; 17(1):53.
19. Terluin B, Smits N, Brouwers EPM, de Vet HCW. The Four-Dimensional Symptom Questionnaire (4DSQ) in the general population: scale structure, reliability, measurement invariance and normative data: a cross-sectional survey. *Health Qual Life Outcomes* 2016; 14(1):130.
20. Terluin B, Brouwers EPM, Marchand MAG, de Vet HCW. Assessing the equivalence of Web-based and paper-and-pencil questionnaires using differential item and test functioning (DIF and DTF) analysis: a case of the Four-Dimensional Symptom Questionnaire (4DSQ). *Qual Life Res* 2018; online first.
21. Terluin B, van der Wouden JC, de Vet HCW. Measurement equivalence of the Four-Dimensional Symptom Questionnaire (4DSQ) in adolescents and emerging adults. *PLoS One* 2019;14(8):e0221904.