STarT Back Screening Tool

Description

The STarT (Subgroups for Targeted Treatment) Back Screening Tool (SBST) is a brief screening questionnaire designed for directing initial treatment for low back pain (LBP) in primary care. There are 9 items that assess physical (leg pain, co-morbid pain, and disability) and psychosocial (bothersomeness, catastrophising, fear, anxiety, and depression) factors previously found to be strong indicators of poor prognosis. As the tool was developed with the primary purpose of guiding initial treatment, only prognostic factors deemed to be modifiable were included.

Patients are asked to either *agree* or *disagree* with each of the 9 statements, except for bothersomeness, which uses a Likert scale (ranging from *not at all* to *extremely* bothersome). The total score (Q 1–9) and psychosocial subscale score (Q 5–9) are both calculated. A total score of ≤ 4/9 allocates the patient to the 'low risk' group. Scores of ≥ 4 and ≥ 4 on the psychosocial subscale allocates a patient to the 'high risk' group. A score ≥ 4 but ≤ 4 on the psychosocial subscale allocates a patient to the 'medium risk' group. The SBST takes approximately 2 minutes to complete and is available at: http://www.keele.ac.uk/sbst/

The discriminant validity of the SBST has been shown to range from 'acceptable' (AUC 0.73 for leg pain) to 'outstanding' (AUC 0.92 for disability), and has substantial test-retest reliability (Quadratic Weighted Kappa 0.73) (Hill et al 2008). Discriminant validity across the physical and psychosocial constructs of the SBST was similarly high for external samples in the UK, US, and Denmark (Hill et al 2008, Fritz et al 2011, Mors et al 2011). Subgroup cutoff scores were set by using an ROC analysis. Hill et al (2008) found good predictive ability for these cutoff scores (High-risk cutoff specificity 94.6%, sensitivity 39.6%; Low-risk cutoff specificity 65.4%, sensitivity 80.1%).

There is good agreement between the SBST scores and the reference standard OMPSQ (Spearman's r = 0.8), showing good concurrent validity (Hill et al 2010a). Direct comparison on predictive validity has not been reported, although similar AUCs for the two tools have been found (OMPSQ 0.68–0.83 *cf* SBST 0.8)(Hockings et al 2008, Hill et al 2010a). The SBST has demonstrated relatively poor agreement with expert clinical opinion (Cohen's Kappa = 0.22) (Hill et al 2010b). In patients receiving physiotherapy care the SBST has shown superior responsiveness compared with several single construct measures (Wideman et al 2012, Beneciuk et al 2012). A 2.5 score change on the SBST could predict 'improved' disability at 6 month follow-up (AUC 0.802) (Wideman et al 2012).

Commentary

Nearly 40% of people presenting to primary care with LBP are at a high risk of developing chronic disability (Henschke et al 2008). It is generally accepted that the one-size-fits-all approach to treating LBP produces disappointing results in physiotherapy practice. The SBST has been rigorously developed and used in one of the first trials to demonstrate improved outcomes with a stratified care approach in LBP (Hill et al 2011). It has since been translated into 17 languages and is currently being validated in six countries.

The SBST can provide the physiotherapist with a consistent and valid indication of overall prognostic complexity. The tool has comparable clinimetrics properties to the current reference standard screening tool (OMPSQ), and is quicker to complete. By providing valid subgroups in LBP, the tool has potential to reduce disagreement in primary care referrals to physiotherapy.

However, the SBST was not originally developed to be a robust clinical prediction rule for physiotherapists, and some considerations should be made before using the tool in this context. First, the success of the tool may depend on the clinical setting. Despite finding good construct validity in a Danish study between primary and secondary care (Mors et al 2013), the SBST has shown inconsistent predictive validity in physiotherapy (Fritz et al 2011, Beneciuk et al 2012) and chiropractic (Field and Newell 2012) care settings. Second, the high false negative rate (34–40%) (Hill et al 2011) means that many of the 'low risk' group will still be at risk of having a poor outcome. The SBST risk categories should therefore supplement and not replace clinical judgment. Finally, full length questionnaires may still be more useful for selecting and monitoring treatment in the high risk group (Beneciuk et al 2012).

Further research could look at including 'resilience' factors which may have a unique predictive ability for chronic pain (Sturgeon and Zautra 2010). Prospective validation studies in different cultural and clinical settings will also make the tool more appealing to physiotherapists.

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The Ten Test for Sensation

Description

The Ten Test (TT) is a quantitative sensory test requiring no test equipment (Strauch 2003). The subject reports his/her light touch perception of the skin area being tested compared to the reference normal area when the examiner gives a simultaneous stimulus by stroking a normal area and the area under examination. When examining subjects with bilateral hand involvement it has been suggested that a normally innervated facial comparator could be used. The response from the patient rating the sensibility of the test area is recorded as a fraction out of 10 between 1/10 and 10/10 (10 = normal sensory perception). The test may be repeated to produce an average score. Detailed test procedure available at http://www.youtube.com/watch?v=ktvjsqbIfUM.

Reliability and validity: The TT has been found to be reliable and repeatable. Inter-observer reliability was excellent (ICC = 0.91) and very strong agreement (Ð =1.00, $p < 0.003$) was found between examiners (Strauch 1997; Sun 2010). Good to excellent intra-observer reliability (ICC = 0.62 to 0.90, $p < 0.05$) was found (Strauch 1997) when equal delivery of the stimulus pressure to the test and normal areas was evaluated. Multiple studies demonstrated the TT may be used for outcome measurement (Novak 2003, 2005; Humphreys 2007). The TT is recommended for: clinical use in patients age > 5 years (Sun 2010); different conditions of upper extremities (Patel 1999; Faught 2002; Novak 2005), and lower extremities (Humphreys 2007); and pre/post operative sensory evaluation (Strauch 1997, MacDermid 2004, Novak 2003).

Commentary

This test provides a quantitative score to the ratings obtained while the examiner administers light moving touch stimuli to a test area and simultaneously comparing that to a reference area of 'normal' sensation. *Advantages*: The TT is quick to administer, requires no equipment and can be used where self-report measures are not feasible or possible. It provides a reliable option for clinicians in busy clinical settings, and/or where quantitative sensory testing equipment is unavailable. *Limitations*: The test requires patient co-operation and the concept of rating sensibility may be cognitively challenging for some patients. Testing is best compared to contra-lateral body part with same dermatome innervation which can be problematic in bilateral conditions. Maintaining equal pressure and a precise test area for simultaneous stimulation of both the normal and abnormal part may be challenging. If the patient presents with hyperaesthesia (sensory sensitisation, or an abnormal pain response), or allodynia over a hypoaesthetic territory (Spicher 2008), then the scoring (and clinical interpretation) differs: normal sensation = 1 and the test area is scored between 1/10 and 10/10 (10 = hyperaesthesia). Testing contraindications include open wounds or absence of an available normal reference territory.

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