

General Health Questionnaire – 28 (GHQ-28)

Description

The GHQ-28 was developed by Goldberg in 1978 (Goldberg 1978) and has since been translated into 38 languages. Developed as a screening tool to detect those likely to have or to be at risk of developing psychiatric disorders, the GHQ-28 is a 28-item measure of emotional distress in medical settings. Through factor analysis, the GHQ-28 has been divided into four subscales. These are: somatic symptoms (items 1–7); anxiety/insomnia (items 8–14); social dysfunction (items 15–21), and severe depression (items 22–28) (Goldberg 1978). It takes less than 5 minutes to complete. The GHQ-28 must be purchased and is available at the following website: <https://shop.psych.acer.edu.au/acer-shop/product/>

Instructions to client and scoring: Examples of some of the items in use include ‘Have you found everything getting on top of you?’, ‘Have you been getting scared or panicky for no good reason?’, and ‘Have you been getting edgy and bad tempered?’ Each item is accompanied by four possible responses: *Not at all*, *No more than usual*, *Rather more than usual*, and *Much more than usual*. There are different methods to score the GHQ-28. It can be scored from 0 to 3 for each response with a total possible score on the ranging

from 0 to 84. Using this method, a total score of 23/24 is the threshold for the presence of distress. Alternatively the GHQ-28 can be scored with a binary method where *Not at all*, and *No more than usual* score 0, and *Rather more than usual* and *Much more than usual* score 1. Using this method any score above 4 indicates the presence of distress or ‘caseness’.

Reliability and validity: Numerous studies have investigated reliability and validity of the GHQ-28 in various clinical populations. Test-retest reliability has been reported to be high (0.78 to 0.9) (Robinson and Price 1982) and interrater and intrarater reliability have both been shown to be excellent (Cronbach’s α 0.9–0.95) (Failde and Ramos 2000). High internal consistency has also been reported (Failde and Ramos 2000). The GHQ-28 correlates well with the Hospital Depression and Anxiety Scale (HADS) (Sakakibara et al. 2009) and other measures of depression (Robinson and Price 1982).

The GHQ-28 was developed to be a screening tool and for this reason responsiveness in terms of Minimal Detectable Change (MDC) and Minimally Clinically Important Difference (MCID) have not been established.

Commentary

Physiotherapists are becoming more aware of the need to screen for psychological and psychiatric co-morbidity in patients under their care. This may be to adapt or modify the physiotherapy approach to management or to institute referral to appropriate mental health care providers.

The GHQ-28 is one of the most widely used and validated questionnaires to screen for emotional distress and possible psychiatric morbidity. It has been tested in numerous populations including people with stroke (Robinson and Price 1982), spinal cord injury (Sakakibara et al 2009), heart disease (Failde and Ramos 2000), and various musculoskeletal conditions including whiplash associated disorders (Sterling et al 2003) and occupational low back pain (Feyer et al 2000) amongst others. Thus for clinicians there is a wealth of data with which to relate patient outcomes.

It assesses the client’s current state and asks if that differs from his or her usual state. It is therefore sensitive to short-term distress or psychiatric disorders but not to long-standing attributes of the client.

There are some disadvantages to use of the GHQ-28 in physiotherapy practice. First, the questionnaire is not freely available and must be purchased. Second, there is the

potential for confusion over the different scoring methods, and this has implications for interpretation of scores derived from the questionnaire. There may also be some concern over the severe depression subscale which includes some confronting questions for the patient to answer. Other tools such as the HADS may be less confronting for physiotherapy use.

Despite these limitations, the GHQ-28 remains one of the most robust screening tools available to assess psychological well-being and detect possible psychiatric morbidity.

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The Neer sign and Hawkins-Kennedy test for shoulder impingement

Description

Two clinical diagnostic tests that take little time to undertake and are commonly performed by primary practitioners dealing with shoulder subacromial impingement are the Neer sign (Neer 1983) and Hawkins-Kennedy test (Hawkins and Kennedy 1980).

Requirements for testing: The Neer sign constitutes the first part of the Neer injection impingement test where one hand stabilises the patient's scapula while the other hand raises the arm into full flexion (Neer 1983). This was thought to cause the greater tuberosity to impinge against the anterior acromion, damaging the rotator cuff tendons, long head of biceps, and the subacromial bursa, with a positive test indicated by pain (Neer 1983). The second part of the test involved a subsequent xylocaine injection to reduce the pain and thereby differentiate impingement lesions from other causes of shoulder pain (Neer 1983).

The Hawkins-Kennedy test involves flexing the shoulder to 90° then forcibly internally rotating it (Hawkins and Kennedy 1980), although gentle internal rotation has also been suggested (Park et al 2005). A positive sign involves reproducing the pain of impingement (Hawkins and Kennedy 1980). It was originally suggested that the

pathoanatomy of this clinical test involved driving the greater tuberosity under the coracoacromial ligament (Hawkins and Kennedy 1980). Hawkins and Kennedy (1980) noted that their impingement test was less reliable than the Neer impingement sign.

Diagnostic accuracy: The Hawkins-Kennedy test has derived negative likelihood ratios between 0.00 and 0.88 and positive likelihood ratios between 1.14 and 2.12 in seven evaluations across three studies (Hughes et al 2008). The Neer sign has derived negative likelihood ratios between 0.31 and 0.93 and positive likelihood ratios between 1.03 and 2.31 in seven evaluations across three studies (Hughes et al 2008).

Two studies investigated the combination of the Hawkins-Kennedy test or the Neer sign for subacromial impingement (Hughes et al 2008). These studies derived negative likelihood ratios to this combination of clinical tests between 0.16 to 0.95 and positive likelihood ratios between 1.04 and 2.81. One study investigated the Hawkins-Kennedy test and the Neer sign in combination to derive negative likelihood ratios between 0.12 and 0.75 and positive likelihood ratios between 1.35 and 2.63 (Ardic et al 2006).

Commentary

Recent evidence suggests the pathaetiology of shoulder impingement involves a pre-existing dysfunctional rotator cuff causing superior humeral head migration in shoulder elevation that causes damage to the subacromial structures (Lewis 2010).

The higher the positive likelihood ratio the more probable it is that a positive test will indicate the presence of the condition. Positive likelihood ratios of 2–5 yield small increases in the post-test probability of condition, 5–10 moderate increases, and above 10 large increases (Grimes and Shulz 2005). The smaller positive likelihood values indicate that positive tests results are less likely to indicate impingement. For negative likelihood values, a lower likelihood ratio indicates greater probability of a negative test excluding the condition and 0.2–0.5 is considered a small increase in the post-test probability of the condition, 0.1–0.2 moderate, and below 0.1 a large increase (Grimes and Shulz 2005). The larger negative likelihood ratios indicated poor diagnostic accuracy.

Poor reliability may be a factor for lack of diagnostic accuracy of clinical tests. Reliability studies for these tests have demonstrated around 70% agreement between testers (Michener et al 2009) and above 98% in another study (Calis et al 2000). This disparity is surprising given the test outcome is determined by the presence or absence of pain.

Studies investigating the diagnostic accuracy of impingement tests may have returned poor results because of a lack of anatomical validity of the tests. A systematic review of the anatomical basis of clinical tests for the shoulder found that there was a lack of evidence supporting the anatomical validity of impingement testing (Green et al 2008).

A recent cadaver study has highlighted that the Hawkins-Kennedy test is less likely to involve the greater tuberosity and causes most compression anterior to the supraspinatus tendon at the rotator interval, while the Neer sign might involve supraspinatus with internal rotation but might involve subscapularis with external rotation (Hughes et al 2011). This study suggested that the position that most compressed the supraspinatus tendon was internal rotation in abduction.

These shoulder impingement tests take little time and are easy to perform; however, if they do not inform clinical reasoning, that is they are not useful in diagnosing impingement, then their continued use must be questioned. Future research needs to seek a valid anatomical basis for impingement testing.

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