

## **Evidence-based practice tutorial – Outcome measures**

Many osteopaths will be familiar with the concept of clinical governance. Demonstration of a practice's clinical governance policy has now become a requirement by many health care insurers. Clinical governance itself is a public recognition of the fact that quality, accountability, transparency and continuous improvement are vital aspects of the life of any health care professional.

### **What is an outcome measure?**

Clinical governance attempts to examine competence of practice, among other aspects of care, as part of a quality assurance process. The use of appropriate outcome measures can play a significant part in this aspect of care as they assess the results of health care processes in a more objective manner; they essentially measure the change from one specified time point e.g. before a treatment intervention began, to another time point e.g. following a single or a specified number of treatment interventions. Outcome measures are most useful when they are standardised and have clear and explicit instructions concerning how to administer and score them. Many of these instructions can be found in the original paper in which the outcome measure was published.

### **What features should outcome measures possess?**

In order for outcome measures to be used appropriately and effectively, it is important that they are easy to use in terms of administration and time; equally they should not cause pain or discomfort to the patient being assessed. A key feature of an outcome measure is that it should demonstrate both validity and reliability and be sensitive to the change(s) required to be measured as the change(s) occur(s) over time.

The **reliability** of an outcome measure is concerned with how effectively the assessment can be repeated when it is employed by different individuals and on different occasions.

The **validity** of an outcome measure is concerned with how well the measure assesses the feature(s) of patient care being measured e.g. mobility, satisfaction or pain.

The **sensitivity** of an outcome measure is its ability to detect subtle changes in a patient's progress when measured over a specific period of time.

### **Examples of Outcome Measures**

A series of paper-based questionnaire designs are available for use as outcome measures. These can measure clinical conditions e.g. osteoarthritis or pain or general states of well being. Computer based outcome measures are also available but sophisticated software systems are required to administer them and need significant financial input e.g. LIFEware. Examples of some frequently used outcome measures are given below. These outcome measures are frequently referred to in published research.

#### **Visual Analogue Scale (VAS)**

This is one of the most frequently used outcome measures. It attempts to measure a patient characteristic that occurs across a continuum e.g. pain and cannot be easily measured in a direct manner. It usually consists of a 100mm horizontal line and is accompanied by narrative descriptions at each end.

No Pain | \_\_\_\_\_ | Very Severe Pain

This is a highly subjective measure and is most useful when attempting to assess change in patients. Further information on the use of the visual analogue scale can be found in: Wewers ME and Lowe NK. A critical review of Visual Analogue Scales in the measurement of clinical phenomena. *Research in Nursing and Health*. 1990;13:227-236.

#### **Western Ontario and MacMaster Universities Osteoarthritis Index (WOMAC)**

This is a self-administered questionnaire designed to assess three dimensions of pain, disability and joint stiffness concerning osteoarthritic changes in the knee and hip using a selection of 24 questions. The latest version of this outcome measure, the WOMACTM 3-1, is available in an extensive variety of language forms. It is available in both 5-point Likert and 100mm Visual Analogue format in most languages.

#### **McGill Pain Questionnaire**

This is a patient-completed questionnaire to assess subjective pain experience using 3 word descriptors - sensory, affective and evaluative. Three measures can be derived from the assessment process:

- The pain rating index, PRI, which is based on numerical values assigned to each word descriptor.
- The present pain intensity, PPI, which is a 0-5 scale derived from the pain description section i.e. no pain, mild, discomforting, distressing, horrible or excruciating
- The number of words chosen, NWC.

Further information on this outcome measure can be found in the paper: The McGill Pain Questionnaire: major properties and scoring methods. Pain. 1975; 1: 277-299.

A website is also available that gives further information: [www.womac.org/womac/index.htm](http://www.womac.org/womac/index.htm).

### **Roland and Morris Disability Questionnaire**

This is a patient-completed questionnaire which consists of 24 statements from the Sickness Impact Profile and covers activities which include self-care, sleeping and mobility. The 24 items are scored from 0 or 1; a higher score represents a worse level of dysfunction. Further information concerning the development of the questionnaire can be found in the paper: Roland M, Morris R. A study of the natural history of back pain: Part 1: Development of a reliable and sensitive measure of disability in low back-pain. 1983; Spine 8(2): 141-144.

Instruction for use and the method for scoring can be found in the paper: Roland M, Fairbank J. The Roland-Morris Disability Questionnaire and the Oswestry Disability Questionnaire. Spine. 2000; 25(24):3115-24.

### **Oswestry Disability Questionnaire (ODI)**

This outcome measure uses a patient completed questionnaire which provides a subjective percentage score of level of function (disability) concerning some of the activities of daily living in patients undergoing rehabilitation from an episode of low back pain. It is currently only suitable English speaking individuals. The questionnaire examines perceived level of disability in 10 everyday activities of daily living. Further information can be found at: [www.orthosurg.org.uk/odi](http://www.orthosurg.org.uk/odi).

### **Short Form -36 (SF36)**

This is a general health status outcome measure that is completed by patients either on their own or with assistance. It considers eight aspects of health status: physical function, physical role, bodily pain, general health, vitality, social functioning, emotional role, mental health, and health transition. Analysis is carried out by coding scores, adding them and transforming them into a scale from 0 (worst possible health status) to

100 (best possible health status). It can be administered by post for extra convenience. Further information can be found at: [www.sf-36.com](http://www.sf-36.com).

### **MYMOP**

This is an outcome measure which is frequently used by complementary and alternative medicine practitioners. It is a patient generated or individualised questionnaire which is problem specific but includes wellbeing. Further details can be found at [www.hsrb.ac.uk/mymop](http://www.hsrb.ac.uk/mymop).

### **Making Sense of the Results**

The results obtained using an outcome measured require careful analysis; they can be analysed to assess if a change in health or performance status has occurred and whether this can be attributed to a particular intervention. They serve as an objective measure for an intervention.