

difficulties in completing tasks, and ability to accomplish things. In contrast, the physical function scale reflects questions on bending, walking, climbing, and lifting.

d. Chronic obstructive pulmonary disease

When the SF-36 form was used by subjects in a clinical trial on chronic obstructive pulmonary disease (COPD), Eaton et al. (10) found that administering oxygen gas resulted in an improvement in HRQoL, for example in reduction of anxiety. In this study, the experimental group received oxygen from a tank of compressed gas, while the placebo group received air from a tank of compressed gas. The authors were careful to point out that the requirement of both groups of subjects to carry a heavy tank of compressed gas might have reduced quality of life. The authors concluded that their study was one of the first to provide justification to the widespread belief that COPD patients can benefit from oxygen.

e. Multiple sclerosis

HRQoL questionnaires are used for clinical studies, as well as in ordinary medical practice, for patients diagnosed with multiple sclerosis. These questionnaires are used for a number of reasons. Multiple sclerosis produces a deterioration in HRQoL. Thus, use of the HRQoL instruments can be used to measure drug efficacy in clinical trials on multiple sclerosis (11). Additionally, some of the factors measured by HRQoL forms, such as fatigue, pain, bladder or bowel control, and physical functioning, cannot be readily measured by laboratory tests (12). Moreover, according to Mowry et al. (13) data from HRQoL questionnaires may be used as a surrogate for clinical outcomes.

III. HRQoL INSTRUMENTS SPECIFIC FOR MULTIPLE SCLEROSIS

The SF-36 form is a generic form, suitable for use with many disorders, including multiple sclerosis. Depending on needs and resources, an investigator may wish to use an HRQoL instrument that is specific for multiple sclerosis. These specific instruments include Multiple Sclerosis Quality of Life Inventory (MSQLI) and others. MSQLI includes the questions found on SF-36 plus additional questions. Other multiple sclerosis-specific questionnaires include MS Quality of Life-54 (QOL-54)

¹⁰ Eaton T, Garrett JE, Young P, et al. Ambulatory oxygen improves quality of life of COPD patients: a randomised controlled study. *Eur Respir J*. 2002;20:306–312.

¹¹ Rudick RA, Miller D, Hass S, et al. Health-related quality of life in multiple sclerosis: effects of natalizumab. *Ann Neurol*. 2007;62:335–346.

¹² Robinson D Jr, Zhao N, Gathany T, Kim LL, Cella D, Revicki D. Health perceptions and clinical characteristics of relapsing-remitting multiple sclerosis patients: baseline data from an international clinical trial. *Curr Med Res Opin*. 2009;25:1121–1130.

¹³ Mowry EM, Beheshtian A, Waubant E, et al. Quality of life in multiple sclerosis is associated with lesion burden and brain volume measures. *Neurology*. 2009;72:1760–1765.