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### Measuring Patient Satisfaction

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Outcomes as an indicator of quality of care have become increasingly important in the past decade. Assessment of patient satisfaction reflects care from the patient's viewpoint. The development of valid and reliable instruments to measure patient satisfaction is the first step in continuously improving patient care.

Satisfaction is a part of outcome quality, in addition to clinically orientated 'traditional' outcomes (e.g. mortality), economic measurements (costs) and healthrelated quality of life, and has become an important endpoint in outcomes research (Cleary et al. 1988; Orkin 1999). The concept of satisfaction is complicated, and influenced by cultural, socio-demographic, cognitive and affective components (Aharony et al. 1993). Many theories include patients' expectations as the basic concept of satisfaction (Calman 1988; Thompson et al. 1995; Wu et al. 2001). A traditional definition of satisfaction is therefore the degree of congruence between expectation and accomplishment (Pascoe 1983). Consequently, the involvement of patients in the development of an instrument to measure satisfaction is very important and must be an integral part of development. Unfortunately, most instruments have not considered this aspect and are therefore of questionable value (Le May et al. 2001). This has contributed to the poor reputation of patient satisfaction as an indicator of the quality of healthcare services (Westbrook 1993).

From surveys of the US and Europe that consciously adopted the patient's perspective, we know that patient satisfaction is primarily determined by aspects such as 'respect for patients' values', 'information', 'coordination and continuity of care', 'physical comfort', 'emotional support', and 'involvement of family' (Allshouse 1993; Delbanco 1992). This has also been shown when measuring patient satisfaction with anaesthesia care in European countries (Auquier et al. 2005; Heidegger et al. 2002).

Measuring patient satisfaction requires the application of a valid and reliable method of measurement. Only a high quality psychometric instrument will be able to generate high quality data (Avis 1997; Roberts et al. 1987). Most instruments used are questionnaires that are completed by the patients themselves. This technique allows surveys with (relatively) higher numbers and a lower budget than face-to-face or other personal interview methods. For this quantitative research, usually highly standardised instruments are applied. Qualitative interviews are of great importance in the phase of generating instruments in order to evaluate all relevant aspects. This approach is, however, (usually) too expensive for broad-based data collection.

The most important points during the construction of questionnaires are content validity, criterion validity, construct validity, reliability, and practicability (DeVellis 1991; Hall et al. 1988; Streiner et al. 1998).

**Content validity:** All relevant aspects of satisfaction need to be included in the questionnaire, integrating patient and expert views, and evaluation of the state of the art for similar constructs. Focus groups with patients who have already gained experience with healthcare, help to collect items, assure content validity and avoid relevant parts of patient perception of care from being omitted. An evaluation of the 'state of the art' considers and incorporates aspects from other studies measuring similar constructs, if appropriate.

**Criterion-related validity:** Aspects, which are related statistically to central outcome parameters such as overall satisfaction show criterion-related validity - in a causal interpretation also called predictive validity. Thus, items and scales believed to assess an important aspect of patient satisfaction must demonstrate such a relationship in terms of a correlation to a central outcome parameter.

**Construct validity:** Construct validity is the extent to which a measure 'behaves' in the same way as the construct it represents (DeVellis 1991). An important point is whether the relevant aspects are translated in a comprehensive way into questions which truly measure them. Questions simply relating to overall satisfaction are inadequate; patient satisfaction should be measured multi dimensionally using a multi-item technique for each aspect.

**Reliability:** Besides test-retest reliability, scale reliability (internal consistency) is of great importance. This is based on correlation and determines to what extent the incorporated items (or questions) are measuring the same underlying construct (latent variable), for example "information".

**Practicability:** The instrument should be as economical as possible, and include everything that is necessary for the measurement of patient satisfaction (content validity), but no more. To achieve high response rates (> 60%), questionnaires should be concise and sent within five weeks after discharge (Saal et al. 2005), with one reminder, if possible.

Patient satisfaction as part of outcome quality has gained great importance in the past decade. The development of highly standardised, valid and reliable instruments is a prerequisite to gain plausible data. The patient's involvement should be an integral part of this process. Results of single item ratings of overall satisfaction are over-optimistic and do not represent the true indication of care. Conclusions should only be drawn from results of well-designed, psychometrically developed instruments.

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