TITLE: Early postoperative recovery outcome measurements after surgery: an evidence-based review

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INTRODUCTION: Postoperative recovery is a complex process related to various outcomes like physiological endpoints, adverse events, and psychological status (1). We aim to do a systematic review of the existing data related to recovery outcome measurement after ambulatory surgery.

METHODS: A search was performed combining the following terms: outpatient, post-operative period, ambulatory anesthesia, day surgery, surgical procedures, recovery of function, questionnaires, reliability and validity in Ovid MEDLINE®(from 1966 through November 2004), Ovid EMBASE®, CINAHL, HAPI, PsycINFO, Web of Science Search History, Biosys Previews Search, Ovid HealthStar® and ASSIA to identify and review studies related to early post-operative recovery outcome measurements within one week after ambulatory surgery. The analysis of the papers was based on the Guidelines for How to Use Articles About Health Related Quality of Life (2).

RESULTS: Only 6 out of 316 articles reviewed met the inclusion criteria. Three of the studies included only ambulatory patients and three included both ambulatory and inpatients (1)(3-8). Aspects of life important to patients were taken into consideration in the pre-test of the scale and description of the scale's developmental process (i.e. item generation) in four of the analyzed papers. The instruments identified in this review demonstrate variable validity, reliability and responsiveness. Two of the instruments used scales that were validated on non-surgical patients. The components of Health Related Quality of Life (HRQL) indicators were variable between the 6 identified instruments (Table). The interpretability of most instruments designed to assess early postoperative quality of recovery is not self-evident.

DISCUSSION: The analyzed instruments do not always provide clear indications of how to interpret changes in HRQL. The validity and reliability of the identified instruments were variable. New studies are needed based on applicability of immediate postoperative recovery outcome instruments to current clinical practice.

REFERENCES

1. Anesth Analg 88:83-90.
2. JAMA 277:1232-7.
3. Br J Anaesth 84:11-15.
4. Anesth Analg 91:97-106.
5. Anesth Analg 86:739-45.
6. Surg Endosc 18:596-600.
7. The Journal of Urology 169:2018-21.
8. Surg Endosc 17:143-52.

Table. Studies included in the analysis

Author	Study Population	Method of Surveillance	Time of Surveillance (days)	N	Outcome (s) Assessed	Instrument(s)
Talamini, 2004	Mixed Laparoscopy	Visit/mail	28	149	Overall pain, pain with common activities, resumption activities after operation	Surgical recovery index (SRI)
Pace, 2003	GU	Mail	365	71	PRS, Pain, ADL, HRQL	Post-operative Recovery Scale (PRS)
Hogue, 2000	Mixed Ambulatory	Visit/Phone	1	1334	Preoperative expectations, pain, vomiting, nausea, reduced alertness, patient satisfaction	24-Hour Functional Ability Questionnaire (24hFAQ)
Myles, 2000	Mixed	Visit	1	160	Emotional state, Physical comfort, Psychological support, Physical independence, Pain	40-item Quality of Recovery Score (QoR-40)
Myles, 1999	Mixed Ambulatory Inpatients	Visit/Phone	Cohort A DS: 3h Minor: 25h Major: 113h Cohort B 6w	451	Quality of recovery. 61 designed items	Quality of Recovery Score (QoR Score)
Swan, 1998	HRS Laparoscopy Ambulatory	Visit/Phone	7	100	General Symptom Distress, Functional status	General Symptom Distress Scale (GSDS) and Functional Status Questionnaire (FSQ)

GU= Urologic Surgery; Mixed= Multiples types of surgery, HRS= Hernia repair surgery, Mail= Mail-in questionnaire, Visit= interview or follow-up visit, Phone= telephone contact, PRS= Postoperative recovery, ADL= Activities of daily living, HRQL= Health related quality of life