

State Trait Operation Anxiety Inventory

Preoperative [anxiety](#) is frequent in neurosurgical [patients](#) and of high clinical relevance (e. g., associated with anesthesiological requirements and surgery outcome). Little however is known about the quality of instruments for assessment of preoperative anxiety in this specific patient group and setting. The paper focused on the psychometric properties of widely used questionnaires. Aim of this study was thus to enable both the clinician and the researcher to select appropriate instruments for assessment of surgery-related anxiety.

The following instruments for assessment of preoperative anxiety were administered in a pseudo-randomized order one day prior to surgery in sample of 158 neurosurgical patients: The [State Trait Operation Anxiety Inventory](#) (STOA) - state scale, the Amsterdam Preoperative Anxiety and Information Scale (APAIS), and the one-item visual analogue scale (VAS). The questionnaires were psychometrically tested according to classical test theory (validity, reliability, diagnostic accuracy).

Construct validity was supported in all applied measures (convergent and divergent validity, known-group comparisons). For the STOA state, we found a one factor scale structure and thus no support for the proposed subscales covering cognitive and affective anxiety. The proposed scale structure of the APAIS, measuring anxiety and information requirement, was replicated. Internal consistency as indicator for reliability of the STOA and the APAIS was excellent (Cronbach's alpha = 0.937/0.868). All instruments showed adequate diagnostic accuracy with the most favourable results of the STOA.

All instruments included in this study can be recommended for assessment of surgery-related anxiety in neurosurgical patients with regard to their psychometric properties. Each instrument offers distinct advantages. Thus, clinicians and researchers can base their individual choice on specific aims and available resources ¹⁾.

Neurosurgical brain tumor removal poses a unique threat for patients while also minimizing instrumental control. Thus, psychological processes used by patients to cope with surgery-related anxiety are of utmost importance. This is the first study to assess both nature and effectiveness of surgery-related coping efforts in neuro-oncological patients.

METHODS: We included 70 inpatients with an intracranial tumor before neurosurgical treatment. For assessment of patients' coping efforts, we used the Coping with Surgical Stress Scale, which includes the 5 subscales: Rumination, Optimism and Trust, Turning to Social and Religious Resources, Threat Avoidance, and Information Seeking. The extent of operation-specific anxiety was assessed via the State-Trait-Operational-Anxiety Inventory. Effectiveness of coping efforts was assessed via relations to other areas of psychosocial well-being (e.g., depression or health-related quality of life).

RESULTS: All patients reported using a variety of coping strategies, most frequently from the area of Optimism and Trust, which was associated with less surgery-related anxiety and better emotional well-being. By contrast, Rumination was positively correlated with surgery-related anxiety and psychiatric morbidity. Mediator analyses supported a model in which surgery-related anxiety initiates coping efforts, which then distinctively mediates the influence of patients' anxiety on psychosocial well-being.

CONCLUSIONS: Neuro-oncologic patients undertake considerable psychological effort to cope with surgery-related anxiety. The majority of patients use coping strategies facilitating emotional

adjustment. A minority of patients, however, report extensive rumination, which negatively influences psychosocial well-being. Our results stress the importance of the doctor-patient relationship and offer implications for targeted interventions ²⁾.

An experimental design with randomization was applied in this study. Participants in experimental group (19 patients) selected and listened music at their preferences in the waiting room and throughout the entire surgical procedure in addition to usual care while control group (19 patients) only gave usual care. State-Trait Anxiety Inventory (STAI), heartbeat, breathing, and blood pressure were collected for analysis.

The results of this study showed that after music listening, there was significant decrease in the level of anxiety ($p < .001$). The findings also showed that the music intervention significantly reduced heartbeat rate 84.5 ($p < .004$), systolic pressure 42 ($p < .001$), and diastolic pressure 38 ($p < .001$) over time. We concluded that music listening is associated with a decreased level of anxiety and distress after awake craniotomy patients.

The results of this study can provide perioperative nursing care in providing music listening when patients were in the waiting room and during surgery to reduce the anxiety so as to reach the goal of human care and improve perioperative nursing care ³⁾.

1)

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