

The impact of preoperative anxiety on patients undergoing brain surgery: a systematic review



V. Oteri¹, E. Crivellaro², F. Gigli², A. Martinelli³
¹University of Catania, Italy, ²University of Milano, Italy, ³University of Padova, Italy



Background

Preoperative anxiety is a common reaction exhibited by up to 80% of patients who are scheduled for surgical procedures and characterized by **psychological and physical changes** which may affect their perioperative period.

Our aim is to report the most up-to-date evidence on preoperative anxiety in brain surgery patients through a **systematic analysis** of the studies produced in the last decades.



Methods

We performed a **systematic review** of literature by searching PubMed, Embase, and Cochrane Library databases. Data were extracted using the PICO framework and critically analyzed.

PRISMA guidelines were applied, and the **risk of bias** of the included studies was assessed using the **RoB 2 and ROBINS** tools, as was the **methodological quality**, following **GRADE** criteria.



Results

We included 27 articles, accounting for **2558 patients** in twelve different countries. The **prevalence** of **clinically relevant** (mild or moderate at least) preoperative anxiety ranged from 17% **up to 89%**, with severe/high anxiety affecting up to 55% of patients; preoperative anxiety was **higher in women than men**, and it was mainly related to surgery outcome and anesthesia.

Preoperative anxiety could lead to a **lower health-related quality of life**, lower cognitive performance and self-perception of **worse memory and attention** during **preoperative period**, worsening the perception of patient's own capability and safety during surgery and anesthesia.

Preoperative anxiety could have implications on various aspects of **postoperative period** of brain tumor patients, such as **depressive symptoms**, decrease in quality of life, and **increase of physical disability**, although no correlation between preoperative anxiety and survival rate was found.

Seven Randomized Controlled Trials attested the **efficacy** of acupuncture, music therapy, virtual reality, and pharmacological support in **lowering anxiety levels**.



Discussion and conclusions

The **main limitation** of this review was due to **heterogeneity** in the included studies, not allowing us to perform a quantitative synthesis through meta-analysis. From the methodological side, the **strict adherence to PRISMA and Cochrane guidelines** and the **rigorous assessment of the quality and RoB** of the included studies through highly reliable tools can be considered a **strength of our work**.

Preoperative anxiety is a common phenomenon that could **negatively affect the perioperative period of brain surgery patients**: this is something that **should not be neglected** to achieve better care through **early prevention and optimal management** of neuropsychological and emotional concerns of the patients during their pathway of care; this needs to be achieved especially through the **inclusion of specialized mental health professionals** into the standard-of-care team.



References

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