



# Measuring Preoperative Anxiety in Patients With Breast Cancer Using the Visual Analog Scale

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Preoperative anxiety is a prevalent concern with deleterious effects in patient recovery and is not routinely assessed in the preoperative screening process. When it is assessed, it may prompt an increase in the use of anesthetic agents, heightened postoperative pain, and prolonged hospitalization. Preoperative women with breast cancer face anxiety as it relates to anesthesia, surgery, and recovery. The preoperative anxiety visual analog scale may identify and quantify anxiety in this population, provide advocacy and support, and improve the preoperative screening process.

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Women with breast cancer are a population that may choose to have elective surgery, such as a mastectomy or lumpectomy. M.J. is a 53-year-old female diagnosed with left breast invasive ductal carcinoma. She has reported fatigue and insomnia since her diagnosis. She fears losing her breast and is apprehensive about postoperative pain and symptoms. She comes to preoperative testing for anesthesia evaluation and is scheduled for a left mastectomy within 30 days.

Same-day surgery and 23-hour stay surgery limit preoperative encounters with healthcare professionals. However, for longer surgical waits, the limited interaction with staff until the day of surgery creates a paucity of time to intervene for preoperative identification of anxiety in patients awaiting surgery (Bailey, 2010). In 2014, about 235,000 new cases of invasive breast carcinoma were diagnosed in women (American Cancer Society, 2014;

Surveillance Epidemiology and End Results, 2014). A breast cancer diagnosis is a stressor, which makes the preoperative encounters crucial in identifying, evaluating, and managing patients' anxieties. During a preoperative visit, patients face stressors such as waiting for the surgery, pathology results, and fear of disease recurrence accentuating stress and anxiety in the preoperative encounter (Drageset, Lindstrøm, Giske, & Underlid, 2011). Kindler, Harms, Amsler, Ihde-Scholl, and Scheidegger (2000) introduced a preoperative visual analog scale (VAS) that specifically measures anxiety before anesthesia and surgery (see Figure 1).

## Methods

This prospective pilot study used the preoperative VAS (Kindler et al., 2000) to quantify anxiety in women with breast cancer who were aged older than 18 years, as it related to anesthesia, surgery, and re-

covery. The tool has been compared to the State Trait Anxiety Inventory (STAI), with the VAS measuring fear of anesthesia correlating with the STAI ( $r = 0.55$ ,  $p < 0.01$ ) and the association of the VAS measuring fear of surgery and the STAI ( $r = 0.66$ ,  $p < 0.01$ ) (Kindler et al., 2000). The VAS has 10 questions and is based on a Likert-type scale ranging from 0 (indicating no preoperative anxiety) to 10 (indicating the highest level of preoperative anxiety). An average score of 4.5 or greater is significant for preoperative anxiety (Ebirim & Tobin, 2010).

Approval from Memorial Sloan Kettering Cancer Center and Monmouth University institutional review boards were obtained. The inclusion criteria were (a) women with breast cancer; (b) aged older than 18 years; (c) undergoing primary breast cancer surgery; (d) never diagnosed with anxiety or depression; (e) not taking prescribed anxiolytics or antidepressants; and (f) must be able to speak, read, and write English at the fifth-grade level.

One-hundred and fifty women undergoing breast cancer surgery were seen from February to March 2014 at the preoperative testing unit; 102 eligible women consented and completed the preoperative VAS tool. Data were analyzed using SPSS®, version 22. Descriptive statistics were used to analyze the distribution of scores according to ages. Sixty-two percent of women had invasive breast cancer ( $n = 63$ ), and 63% had breast-conserving surgery ( $n = 64$ ).

## Results

Of the 102 women who completed the preoperative VAS tool (0–10 scale), 75% scored greater than 4.5, which was significant for anxiety. The youngest age group