Title: Impact of Environment on Patient Experience in Women Undergoing Mammography: Preliminary Results of a Patient Satisfaction Survey

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OBJECTIVES:
Evidence suggests that approximately 25% of women avoid mammography due to fear of pain and anxiety. Thus, we sought to investigate the effect of simultaneous multiple sensory stimuli on patient perception of pain and anxiety levels during mammography.

METHODS:
One hundred sixty seven patients (mean age 58 years) undergoing mammography were recruited, including 114 patients who were assessed in a standard room (SR) and 53 assessed in an upgraded sensory stimuli room (UR). Specifically, the UR facilitated simultaneous sensory stimulation by infusing the air with a light, calming fragrance, while wall monitors displayed soothing videos, and projected relaxing sounds of one of three selected ambiances. A first group of patients was surveyed before the upgrade in the SR, then the same questionnaire was administered to a second group of patients in the UR after the upgrade. Demographic data included age, examination type, and history of breast cancer. The level of expected discomfort and anxiety at baseline was compared to levels experienced during the examination on a numerical scale ranging from 0 (no discomfort/no anxiety) to 10 (worst pain/highest anxiety imaginable). The Mann-Whitney-U statistic was used to compare baseline and post-mammography ratings between groups with $\alpha=.05$.

RESULTS:
Sixteen percent of patients had a history of breast cancer in the SR vs. 21% in the UR group. The distribution of diagnostic vs. screening exams was 25%/75% in the SR, and 32%/69% in the UR group. Most patients had undergone mammography before (98% and 96% in SR and UR, respectively). No difference ($p \geq .81$) was present between groups in regards to baseline anxiety level or expected level of discomfort. Post-mammography discomfort ($p=.001$) and anxiety ($p=.03$) were significantly different when comparing groups, with the SR group reporting decreased discomfort and lower levels of anxiety. The percentage of patients reporting no discomfort at all was 16% in the SR compared to 32% in the UR group. Similar results were observed regarding patients’ anxiety level with 36% versus 51% of patients reporting no anxiety at all in SR and UR, respectively.

CONCLUSIONS:
In summary, the addition of simultaneous sensory stimulation as a targeted intervention has a positive effect on reducing the level of discomfort and anxiety experienced during mammography. Therefore, the deterrent affect for mammography screening may be reduced, and potentially increase compliance rates.