Reducing light and noise made a psychiatric ICU unit calmer and safer, study says

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Pax, a mood-modifying machine, is used in psychiatric units. Pax employs music, light, aromatherapy and other calming sensory elements to help reduce problem behavior. Credit: University of Alabama at Birmingham

Turning down the lights and reducing noise levels as part of a stimulation

reduction initiative can decrease assaults and the amount of time patients must spend in restraint at psychiatric intensive care units, according to new research from the University of Alabama at Birmingham. Findings published in the *Journal of the American Psychiatric Nurses Association* showed that simple techniques to reduce sensory overstimulation played a major role in creating a safer environment for both patients and staff.

"The time period roughly between 4-7 p.m. often sees an environment of commotion and disquietude on high acuity psychiatric units resulting in a higher incidence of assaults and/or need to place patients in restraints to control aggressive behavior" said Rachel E. Fargason, M.D., professor in the UAB Department of Psychiatry and senior author of the study. "On many psychiatric units, this three-hour period between the end of structured activities and the dinner meal is the most problematic of the day."

Fargason says the combination of bright lights, talkative staff, anxious evening visitors, clattering housekeeping carts and physician traffic can create a highly overstimulating environment.

"Sensory overstimulation is irritating to healthy individuals, but can be intolerable to individuals with neuro-psychiatric disorders," said Badari Birur, M.D., assistant professor of psychiatry at UAB and a study co-author. "Healthy individuals regularly engage in centering activities such as stroking their hair or tapping a foot. However, neuro-psychiatrically challenged individuals are often unable to self-identify their sensory needs or execute these adaptive behaviors."

Fargason and her team began a structured change in sensory stimulation on the 20-bed, locked psychiatric intensive care unit at UAB Hospital in October 2015 by dimming lights in the common spaces of the units at 4 p.m. This was followed by sound reduction and the introduction of music in November. Between December and February 2016, the team

added tactile and visual art activities, movement, stretching, and aromatherapy.

"Both assaults and use of restraints dropped dramatically as we implemented these sensory adaptations," Fargason said. "Rates for both fell to close to zero, well below industry benchmarks and regulatory requirements."

The need for restraints fell by 72 percent, to just over half of 1 percent of total patient hours requiring restraint usage. Assault rates fell 83 percent to a rate of 0.06 percent.

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Since the completion of the study, the psychiatric ICU has continued to utilize the stimulation reduction techniques and continues to see positive results on a regular basis.

"Once the project was fully implemented, the evident calming effects on the patients became reinforcing," Birur said. "Altering the sensory milieu on a busy psychiatry unit requires multidisciplinary efforts by leaders and frontline team champions to influence this kind of beneficial culture change."

The team, which included nurses, occupational and physical therapists, patient care technicians, and physicians, reports that the quieter auditory and low-light culture became the new normal on that unit.

"While initially implementing the process changes, assistant nurse manager Barbara Aguilar had to remind patients, visitors and even staff to leave overhead lights off and to speak in quiet voices," said Melissa Bearden, OT/L, occupational therapy manager for the Center for Psychiatric Medicine. "Eventually the culture shifted, and patients and staff now remind each other or self-correct."

Fargason says the findings could have impact on other hospital units, particularly where patients are behaviorally challenged due to dementia, delirium or medication.

"Our results might be repeatable on any intensive care unit or on geriatric units," she said. "And since we saw the most profound effects with the dimming of light and lowering of sound levels, such adaptations

might be applicable across the board to all hospital or health care settings."

The study did not determine which of the various sensory changes had the greatest impact on behavior modification, although they saw the biggest drops in assault and restraint use following the initial light and sound interventions. The interventions were introduced over a five-month period, and the beneficial effect extended throughout an 11-month observational period.

More information: Svetlana Yakov et al. Sensory Reduction on the General Milieu of a High-Acuity Inpatient Psychiatric Unit to Prevent Use of Physical Restraints: A Successful Open Quality Improvement Trial, *Journal of the American Psychiatric Nurses Association* (2017). DOI: 10.1177/1078390317736136

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