The Effect of White Noise Machines in Decreasing Hospital Noise: A Bedside Scientist Project

Question
In the adult in-patient population does the availability of white noise machines help reduce hospital noise and improve patient satisfaction compared to not having them available?

Lit Review
- Considerable research has found that hospital noise can cause a decreased rate of wound healing, an increased length of stay and increased stress levels in patients (Joseph & Ulrich Ph.D., 2007).
- Evidence based interventions that have been found to be effective in reducing hospital noise include ear plugs, staff education on hospital quietness, leaving electronic doors open on the unit, and using quiet hours (Connor & Ortiz, 2009).
- A clinical review in 2009 of sleep reduction strategies found that sound masking using white noise in a hospital setting is the most effective technique in improving sleep (Xie, Kang & Mills, 2009).
- St. Francis Hospital in Lakewood, Washington, found that after installing white noise machines in this telemetry unit the patient satisfaction results increased by 20%.

References

Conclusion
Data was collected and analyzed from January 2012 to March 2013 using the Healthstream quarterly patient satisfaction results pertaining to quietness on the unit at night. This data was analyzed pre and post implementation of the white noise machines. It must be noted that other noise reduction interventions were still in effect when this data was collected. These included the use of ear plugs, and quiet hours.

The data showed that there was an increase in patient satisfaction after the placement of a white noise machine in each patient room. The highest increase was from Jan-Mar 2013. In this quarter, there was a 68.2% response rate of the unit being quiet at night.

Implication of Practice
Increased hospital noise can impact a patient’s healing time and length of stay. It is important for hospital staff to implement interventions to reduce the overall noise on any hospital. This bedside scientist project showed that after the implementation of white noise machines there was an increase in the patient satisfaction scores pertaining to quietness on the unit. The unit will continue to monitor these results.

Summary
The Observation Unit at Anne Arundel Medical Center is a seventeen telemetry monitored bed unit. The unit design is similar to a horsehoe and each patient room has a glass door to help reduce noise.

In April 2011, the quality council for the unit identified through the patient satisfaction results that the quietness on the unit at night needed improvement. The results were from the Healthstream Insights Online quarterly survey. Using the “Voice of the Patient” comments, the disturbing noises were identified as staff voices and telemetry alarms.

An action plan was written and implemented using evidence based interventions to help reduce the noise. This included offering ear plugs for the patients, a mandatory staff in-service on reducing hospital noise, quiet hours and the electronic door to the unit was deactivated. The last intervention implemented in May 2012 was the purchase of two white noise machines. In July 2012, the unit was granted funding for the purchase of fifteen additional machines. These machines were placed in each room in August of 2012.

Names of Presenters
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