



ISSN: 0976-3031

Available Online at <http://www.recentscientific.com>

CODEN: IJRSFP (USA)

International Journal of Recent Scientific Research
Vol. 8, Issue, 10, pp. 21016-21019, October, 2017

**International Journal of
Recent Scientific
Research**

DOI: 10.24327/IJRSR

Research Article

SHHH... SILENT HOSPITAL HELPS HEALING!

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DOI: <http://dx.doi.org/10.24327/ijrsr.2017.0810.0999>

ARTICLE INFO

Article History:

Received 17th July, 2017
Received in revised form 12th
August, 2017
Accepted 04th September, 2017
Published online 28th October, 2017

Key Words:

Silent Hospital, Noise in Hospital,
Quiet Hospital

ABSTRACT

Noise is an emerging threat to patient safety and comfort. Hospitals are littered with QUIET PLEASE signs, yet the hospital "quiet zone" unfortunately has become an oxymoron. Quiet environment improves patient healing. When patients experience sleep disruption or do not rest, they experience an increase in heart rate and brain wave activity. In fact, patients respond to hospital noise in the same way they would respond to stress, and this impacts their healing¹. To curb Culture of Noise, "SHHHSilent Hospital Helps Healing" Campaign was launched. The campaign was led by the Department of Nursing and supported by all other departments.. The initial status was assessed and various activities to reduce the noise level were planned and implemented. Every department had taken the responsibilities for teaching their department's staff. Compliance check were done on daily basis to monitor and control the noise level. At the end of the camping the noise level has reduced from 80 dB to 40 dB around the hospital; measured by using noise control pro app.

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INTRODUCTION

"Unnecessary noise, then is the most cruel absence of care which can be inflicted either on sick or well"

Florence Nightingale 1859

Noise, defined as unwanted sounds, could affect people both psychologically and physiologically, with reported negative effects including cardiovascular stimulation, hearing loss, increased gastric secretion, pituitary and adrenal gland stimulation, suppression of the immune response to infection, as well as female reproduction and fertility. The auditory environment of the 21st century hospital is substantially louder, more complex and more difficult to control. The World Health Organization (WHO) guidelines for continuous background noise in hospital patient rooms are 35 dB during day and 30 dB at night, with nighttime peaks in wards not to exceed 40 dB².

A study revealed that not all hospital noises are created equal. Researchers looked at the brain wave and cardiac responses to isolated hospital sounds-an ice machine disgorging its cubes, a laundry cart rolling, an intravenous infusion pump beeping, people discussing "good" and "bad" patient outcomes-and then calculated just how disruptive those sounds were to patients who were asleep. The researchers found that while the

responses differed depending on stage of sleep, people were more consistently aroused by the electronic alarms from monitors and infusion devices and the ringing from telephones. Each time they woke, their heart rates jumped³.

Objectives: The campaign was initiated with the objectives of reduction in Noise levels by 25% and reduction in patient complaints related to noise by 50%.

Need of the Study/Project: Indraprastha Apollo Hospital is a quaternary care hospital with a complex set up covering various super specialties with 700 beds dealing with an increasing complex and acute problems coupled with multiple co-morbidities. Our hospital's last year average noise level fluctuated between 50dB to 80dB-nearly as loud as a chain saw and 42% of patients were dissatisfied with noise. Despite these findings and the hospital's attempts to correct the situation, noise levels have almost doubled over the last few years fueled by a cacophony of beeping patient monitoring alarms, gurneys and trolleys rolling through the hallways, televisions in patient rooms, telephones, visitors talking loudly on cell phones, and hallway chatter between staff etc. Hospital staff who work in a noisy environment day after day report more instances of job burnout, depression, irritability, and exhaustion-all factors leading to high staff turnover rates, low staff productivity and barriers to finding and retaining top-level clinical staff. Most

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serious, however, is the potential of making medical errors when trying to communicate and managing several patients at once in a distracting, noisy workplace. So a clinical campaign was initiated to curtail the hospital noise pollution and enhance healing for the patients.

MATERIALS AND METHODS

To reduce the noise level in the selected hospital “SHHH ...Silent Hospital Helps Healing” Campaign was launched in October 2015. The four week campaign was led by the Department of Nursing and supported by all other departments

like doctors, laboratory technicians, IT, HR, Finance, Quality, Security, CSSD, OT, Housekeeping, F&B etc. The initiatives taken are as follows:

- Gathering data on the current situation by objectively assessing the noise levels
- Identifying the reasons of increased noise levels
- Identification of relevant stakeholders and departments to address the challenges



FIGURE 1- MASCOT ON MOBILE ON SILENT MODE



FIGURE 2- COMPUTER SCREEN SAVER ON SILENT CAMPAIGN



FIGURE 3- TAG CARD ON MONITOR ON SILENT MODE



FIGURE 4- REWARD CEREMONY



FIGURE 5- TAG CARDS ON PHONES, TV & MONITORS

- An extensive campaign throughout the organization involving all relevant stakeholders and departments for addressing all problem areas
- Communication across all departments
- Staff centred activities:
 1. Awareness campaigns to impart knowledge regarding significance of silence in safe and effective patient care delivery
 2. Engagement activities to grab attention and build a positive outlook towards the endeavour
 3. Surveillance activities to monitor compliance rates and rectify problem areas
 4. Rewards and recognitions to reinforce positive behaviour and encourage good performers
- Comparison of pre and post intervention data to ascertain impact
- Sustainability plan to ensure continued compliance

- **Improved Patient Satisfaction:** Reducing noise and maintaining a quiet environment has improved patient care and ultimately patient satisfaction. The Voice of Customer climbed up to 100%. (Graph 2)
- **Increased Staff Satisfaction:** It has enhanced staff satisfaction. A quieter workplace also benefited staff, in that it's less distracting and tiring. Our VOE (Voice of Employee) rose up to 85%. (Graph 3)
- **Decreased Number of Clinical Errors:** Clear exchange of clinical information between employees lower the incidence of errors.
- **Less Patient Complaints related to Noise:** Patients experienced fewer complications and a better clinical outcome were observed. Patient complaints related to noise has reduced from 42% to 0. (Graph 4)
- **Improved Staff Retention Rate:** Nurses reported feeling less stressed and happy in calm environment. Staff retention enhanced up to 3 to 5 years. (Graph 5)

1st Week Activities

1. A voice for noise - Poster competition, announcement in centralized and shift briefing.
2. Respond @ 5- To promote response in 5 rings-display of tag cards on phones and call bell display board, audit calls to units. (Figure 3 & 5)
3. Call, don't shout- Speak softly to avoid loud noise- role play, session on service excellence.

2nd Week Activities

- SHHH, Silence = Healing (Our Patients Need Rest)- Awareness through mascots, mobile phone on silent mode, keeping low TV Volume, SMS alerts, announcements via public announcement system every hour. (Figure 1 & 2)
- Move on silent wheels (noisy wheels irritate) - Oiling of wheels- food trolley, medication trolley, ECG machine, dressing trolley, wheel chair, beds etc., session for housekeeping staff to reduce noise level while cleaning.
- Less visitors crowd, leads better silence served- Strict visitors policy, education attendants regarding importance of visitors policy, compliance check by Night Supervisor/ Night Manager on duty.

3rd Week Activities

- Alarm to alert-(Alarms-Adjust and Acknowledge)- Teaching on alarm adjustment, Poster display in each ICU/HDU.
- C&C (Check and Correct)- Random audit, noise check through app

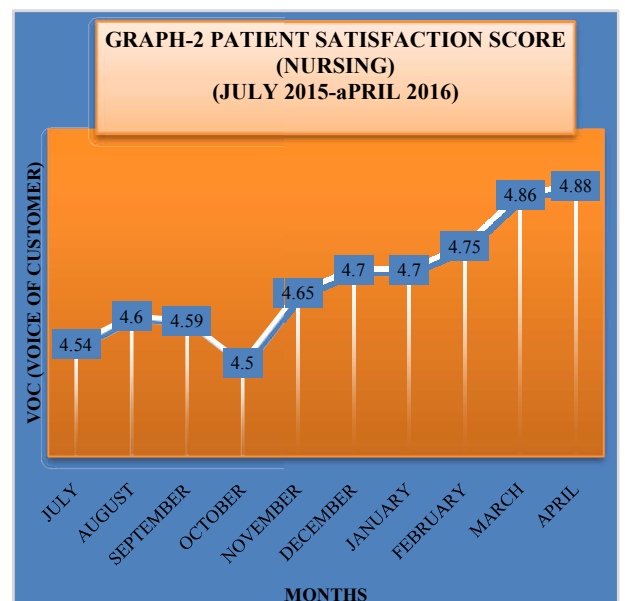
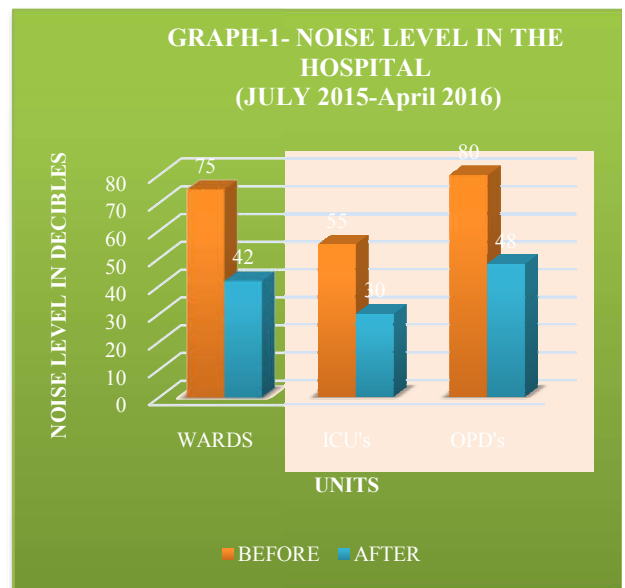
4th Week Activities

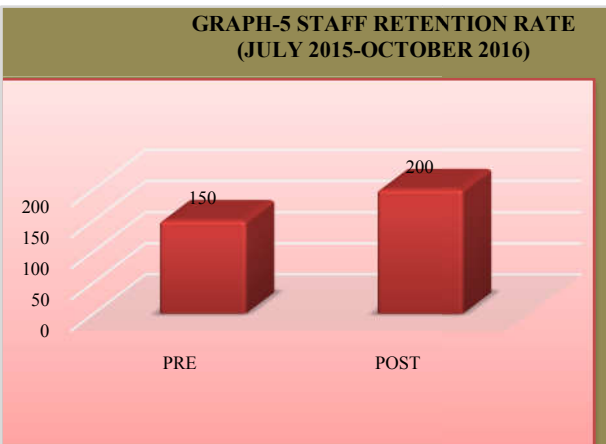
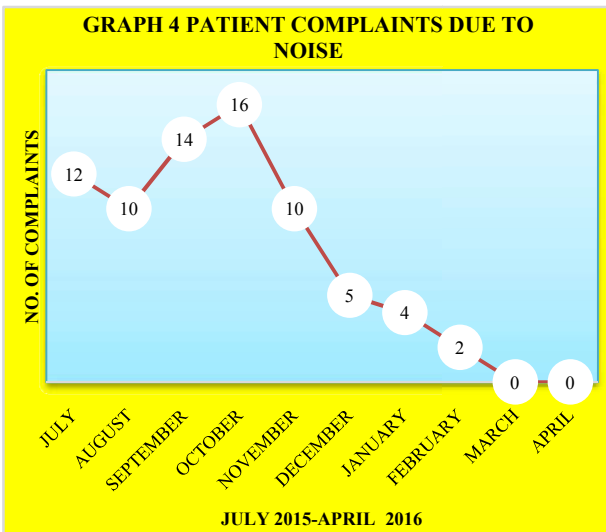
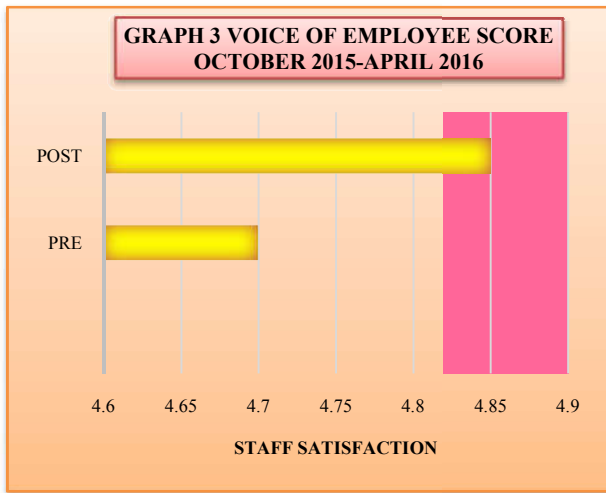
Closing and Reward Ceremony-Recognition given to Best department, unit, poster competition, Chief and star campaigners. (Figure 4)

RESULT

The campaign led to following outcomes:

- **Reduction in Noise Level:** Noise level had reduced from 80 dB to 40 dB around the hospital measured by using noise control pro app. (Graph 1)





DISCUSSION

Through this campaign, hospital was able to create a quiet and calm environment for patients by providing a physical setting conducive to recovery and an organizational culture that

supports patients and families through the stress imposed by illness, hospitalization, medical visits, healing and bereavement. Appreciation and accolades were received from patients, unit staffs and doctors. Results were long-lasting as it helped reduce the level of noise through comprehensive and long term monitoring and controlling solutions. For this project, no capital was utilized. The benefits to patients and hospital staff extend to the hospital organization as well through improved patient outcomes, higher patient satisfaction scores, shorter lengths of stay, lower re-admission rates, and improved staff retention rates. Results were long lasting as it has helped reduce the level of noise through comprehensive and long term monitoring and controlling solutions. Hagerman (2005) conducted a study on influence of ICU acoustics on quality of care & physiological state of patients on 94 patients found the similar result of lower re-hospitalization rate and better attitude of staff for the good acoustics⁴. A noisy environment during acute illness may have important detrimental physiological effects on rehabilitation. Hence implementing these strategies will go a long way to reducing hospital noise, thereby creating more comfortable places in which patients can recuperate.

Acknowledgement

The core team to drive the initiative comprised of the following members of Indraprastha Apollo Hospitals: Capt. Usha Banerjee (Group Director Nursing), Ms. Jiji Dias (Assistant Nursing Superintendent), Ms. Simi Rajan (Learning Officer) and representatives from Housekeeping / IT / HR / F & B / Materials / Lab / Pharmacy / Engineering / CSSD / OT / Quality / Biomedical / Security.

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How to cite this article:

Usha Banerjee et al. 2017, Shhh... Silent Hospital Helps Healing!. *Int J Recent Sci Res.* 8(10), pp. 21016-21019.
DOI: <http://dx.doi.org/10.24327/ijrsr.2017.0810.0999>
