The Sh-h-h-h Project
Nonpharmacological Interventions

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Promoting rest and sleep is integral to the profession of nursing. The Sh-h-h-h Project, a nonpharmacological program designed to enhance rest and sleep, was implemented on a hospital medical unit. Nursing assistants provided patients with various modalities to improve sleep, including back rubs, warm drinks, blankets warmed in a blanket warmer, aromatherapy, relaxation music, and earplugs. Additional interventions were taken to reduce noise. The outcomes of the Sh-h-h-h Project are reported here, with patients indicating improved sleep quality and quantity. 

**KEY WORDS:** hospital, interventions, nonpharmacological, nursing assistants, sleep


_BENEFITS OF SLEEP_

Sleep creates a ripple effect on the body. Body tissue is continuously degraded and renewed. Wounds heal by cell division and protein synthesis, aided by the secretion of growth hormone. Deep sleep stimulates the release of growth hormone, with approximately 70% of daily secretion occurring during sleep. Growth hormone enhances bone synthesis and erythropoiesis formation for red blood cell formation. In animal studies, cell division and protein synthesis reach maximum values during the hours of sleep. The rate of healing of the damaged tissue is greatest during sleep.

In addition, rest and sleep are necessary for energy conservation and restoring the mind. Sleep provides the necessary energy for patients to participate in physical and occupational therapy. During sleep, the psyche relaxes and allows safe discharge of repressed material in the form of dreams. Sleep enhances daytime functioning and may be important to intact memory. Much of the agitation and confusion observed in acute care may be attributed to sleep deprivation.

Multihospital studies identify factors that interfere with sleep, including noise, treatments, pain, unshaded lights, discomfort related to room temperature, early morning wake, and worry. Unfortunately, sedatives are often the only intervention used for sleep in the hospital, with approximately 60% of patients in acute care requesting and receiving sedatives to help them get the rest they need. However, sedatives have particularly adverse effects on older adults, including...
delirium, daytime drowsiness, fatigue, respiratory depression, slowed reaction time, and impaired memory and information processing.

THE SH-H-H-H PROJECT

The Sh-h-h-h Project, a nonpharmacological program designed to enhance rest and sleep on a hospital medical unit, was guided by a conceptual model developed by Dreher.11 Dreher recommends that interventions be used to target 3 phases of sleep:

- **Retiring phase**: beginning with declining arousal and preparation for sleep and continuing until sleep onset.
- **Resting phase**: beginning with sleep onset and continuing until the onset of awakening.
- **Rising phase**: beginning with onset of awakening and continuing until complete arousal. Using Dreher’s model, an educational and interventional program was developed. The problems and interventions of each phase were explored.

Retiring phase

Many factors create sleep problems in the retiring phase, including variability in each person’s sleep routine, strange noises, dimmed lights, discomfort (e.g., pain, room temperature, mattress comfort), and unfamiliar surroundings. However, nonpharmacological modalities that help patients relax during this phase are available: (1) relaxation techniques, in which a person is encouraged to avoid focusing on worrisome thoughts; (2) muscle relaxation techniques; (3) music (classical and nature sounds); and (4) prayer.12 Promoting warmth (e.g., warm blankets and drinks such as herbal tea or milk) may promote sleep, especially for the elders who often experience coolness in the hospital environment.13 Back rubs are another helpful intervention: a 3-minute back rub using effleurage and petrissage decreases blood pressure, heart rate, and respiratory rate.14

One study of 111 persons older than 70 years implemented a combined approach, using back rubs, warm drinks, and relaxation music. Not only did participants sleep better as more interventions were used, but sedative use also dropped from 45% to 31%. Moreover, sleep quality was rated better in participants receiving the sleep protocol than in those receiving a sedative.8

Another study compared behavioral therapies with pharmacological therapies in 78 adults (mean age, 65 years). The participants were divided into 3 groups: (1) cognitive-behavioral therapy group, including stimulus control and sleep hygiene; (2) pharmacotherapy group (temazepam); and (3) cognitive-behavioral therapy plus pharmacotherapy group. Groups 1 and 3 achieved the best results, indicating the value of the nonpharmacological interventions.15

Aromatherapy using lavender has also been shown to be helpful. Small studies completed in nursing homes with older adults indicated improved sleep in some elders.16

Resting phase

Noise is the major disturbance in the hospital setting during the resting phase. Noise measurements reach 70 dB, which is almost equivalent to the noise level of a vacuum cleaner.17 In one study, 55 episodes reached 74 dB between 10 PM and 6 AM.18 Scalis19 found that the noise generated by staff during shift changes measured 113 dB—as loud as that of a jackhammer.

Another factor creating difficulty sleeping occurs as patients are awakened for care (e.g., assessments, medications, and various treatments). One critical care study noted that the longest period without sleep interruption was 50 minutes.18 Nursing staff should be certain that the benefit of a procedure outweighs those of undisturbed sleep. Suggested interventions for the resting phase include

- closing doors to patients’ rooms;
- placing phones on lower volumes;
- speaking in lower tones;
- using heavy drapes and window blinds;
- lowering the sound of alarms, if possible; and
- avoiding waking patients

Rising phase

Many time-honored routines (e.g., obtaining daily laboratory specimens and weights) require awakening patients early in the morning. However, these routines do not consider a patient’s need for sleep—hospital workers are primarily concerned with getting the job done. Laboratory and weight results may be requested by physicians making early rounds. Nevertheless, it is important for all hospital staff to reevaluate what is necessary in the rising phase. To avoid early awakening of patients and to change routines that have existed for years, hospital staff require approval from the hospital administration.14
SH-H-H-H: IMPLEMENTATION

The SH-H-H-H educational program was developed from literature review, which provided evidence for selected interventions. Guided by a nurse manager, clinical nurse IV, and gerontological clinical nurse specialist, CNAs completing the educational program implemented nonpharmacological interventions to promote sleep on the 36-bed medical unit.

Sleep baskets

"Sleep baskets" hold the materials necessary for each intervention. Each midsize wicker basket includes a list of possible interventions: back rub, warm drink, aromatherapy, a blanket warmed in a blanket warmer, relaxation music, earplugs, and closed doors. The list serves as a reminder for the CNA and also helps the patients select sleep interventions.

Back rubs

During the educational program, CNAs review hospital-approved procedures for providing back rubs and practice giving back rubs to each other. The back rub procedures and containers of moisturizing lotion are also included in the sleep baskets. Lotions from the patient's home may also be used for back rubs.

Warm drinks

Warm drink offerings include warmed milk or decaffeinated tea. Patients are encouraged to avoid caffeine prior to retiring.

Aromatherapy

Lavender aromatherapy is also available for all patients. Certified nursing assistants place a small amount of lavender scent on a tissue, which is then placed near the patient’s pillow.

Warm blankets

Warm blankets are readily available from a blanket warmer located on the nursing unit. Blankets are then placed next to the patient, with regular bed linens on top. Many patients express an immediate sense of comfort and begin to relax.

Relaxation music

Relaxation music is available on each patient's TV via the hospital education programming channel. The relaxation program offers 10 music and nature sound selections. Each selection repeats automatically until the TV is turned off. Patients can easily make their choices by dialing a phone number displayed in each patient room. Once contacted, the caller receives step-by-step selection instructions. This process can be completed by the CNA, patient, or family members.

Noise reduction

Several noise reduction strategies were implemented to reduce nighttime noise levels. Staff were reminded to use "quiet voices" after 10 PM and encouraged to avoid hallway conversations on the 11-7 shift. Patients were offered earplugs if noise levels impeded sleeping. When possible, doors to patient rooms were closed when bedtime routines were completed. When patients required close monitoring, the doors were partially closed.

CNAs have now completed the SH-H-H-H education program throughout the hospital, with sleep baskets being used on 4 units. During the resting phase, greater emphasis is placed on noise reduction. The intercom system is no longer used at night. In addition, CNAs are now attuned to patients who have had an exhausting day and attempt to ensure these patients take a 45-minute afternoon nap. To aid in this effort, signs stating, "Please do not disturb. Patient napping between the hours of ______ and ______" are posted on patients' doors.

SH-H-H-H: EVALUATION

To evaluate the effectiveness of the SH-H-H-H Project, CNAs recorded the interventions used and later interviewed patients regarding their perception of the intervention's effectiveness. When a sleep basket was used on the evening shift, the CNA completed a short form indicating which interventions were used. The next morning, the day shift CNA asked the patient to rate the quality and quantity of sleep and to identify which interventions were the most helpful. During the evaluation period, 40 patients were evaluated (mean age, 75 years). Not surprisingly, the warmed blanket was the most popular intervention for older patients (Table 1). Because aging results in less effective central thermoregulatory controls and peripheral circulation and decreases in subcutaneous tissue, older adults are less able to conserve heat and often complain of the cool environment.
TABLE 1. Sh-h-h-h Project interventions

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Frequency requested/provided</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back rub</td>
<td>10</td>
</tr>
<tr>
<td>Warm drink</td>
<td>5</td>
</tr>
<tr>
<td>Warmed blanket</td>
<td>38</td>
</tr>
<tr>
<td>Music</td>
<td>1</td>
</tr>
<tr>
<td>Relaxation tape</td>
<td>2</td>
</tr>
<tr>
<td>Earplugs</td>
<td>0</td>
</tr>
<tr>
<td>Aromatherapy</td>
<td>1</td>
</tr>
<tr>
<td>Casing doors</td>
<td>4</td>
</tr>
</tbody>
</table>

Day shift CNAs also asked the patients whether the nonpharmacological interventions helped them sleep. Thirty patients (75%) responded, “yes.” In addition, 60% rated their sleep quality as good. In response to how much they slept, 37.5% (15) stated, “a lot”; 35% (14) stated, “a fair amount”; and 27.5% (11) stated, “a little.” When asked to identify things that disturbed their sleep, 15 elders, as it was expected, identified noise as the disturbing factor. Other complaints were pain, need to void, diarrhea, breathing problems, and dreams. When patients were finally asked whether they felt rested on awakening, 80% (32) responded, “yes.”

CONCLUSION

As previously noted, sleep is important for many body processes, including the release of growth hormone. Although the importance of sleep for wellness is critical, it appears that sleep has been undervalued by nursing practice. The early founders of nursing were, perhaps, ahead of their time when emphasizing the value of sleep for restoring body and mind.

Sh-h-h-h Project interventions appear helpful for sleep improvement, especially during the retiring phase of sleep. Focus should be given to less interruption of sleep and reduction of early morning awakenings. Research is needed to demonstrate that longer, uninterrupted sleep periods have beneficial effects on patient outcomes. In summary, it is important that the nursing profession again revisit the early wisdom and holistic approach of Florence Nightingale.

REFERENCES