The Influence of Operative Interventions and External Environment on the Sleep of Geriatric Patients

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Abstract

Ensuring adequate sleep to geriatric patients after operative interventions is a day-to-day Activity by health specialists - a nurse or a doctor, working in surgery departments. Providing optimal conditions for sound sleep is a precondition for the patients’ speedy recovery. The most common factors which affect the sleep of the patients who have undergone operation are: pain, the need to be in a particular uncomfortable position in bed, probes or tubes fitted on, catheters, drainage, dressing, as well factors in the environment.

The aim of the study is to establish the degree of impact of the operative interventions and the environment on the patient’s sleep, as well as the adequate care taken by a team in the surgery department.

Materials and Techniques

A study of fifty patients aged over 65 year operated on was conducted for that purpose, as well as the opinion of twenty nurses working in the surgery departments in as the opinion of twenty nurses working in the surgery departments in Stefan Cherkezov Hospital in Veliko Turnovo

Results

The studies conducted suggest that the factors which mostly affect the sleep of the patients who have undergone surgery are: pain, the need to be in an uncomfortable position in bed as well factors in the environment, lack of sleep hygiene and depression too affects the sleep.

Conclusions

The pain, the room temperature, the patient’s anxiety have the most negative impact on the sleep. The ‘fight against pain’ is the most significant of all factors in nursing care.

Keywords

CNS (Central Nervous System); HADSC (Human Adipose-Derived Stromal Cell); MCAO (Middle Cerebral Artery Occlusion); Transplant; Treatment; Brain Injury

Introduction

Sleep is a complex process during which the body recovers and regenerates. It is not passive and does not ‘switch off’ the bodily functions. During sleep the brain processes all that has been experienced during the day and systematizes it. Sleep is influenced by circadian rhythms. These rhythms are controlled by brain neurons, which react to light, temperature and hormones, and which form humans’ ‘biological clock’.
Each organism regulates the sleeping and waking cycles, and it needs a certain time to re-adjust for about two or three days, especially if it has switched places. If we change time zones, our biological clock continues to work in accordance with the place where we have been.

Sleep goes through two main stages: rapid eye movement sleep, REM sleep; no rapid eye movement sleep, NREM sleep.

The third substage is deep sleep, and it is characterized by very slow delta waves, emitted by the brain.

People’s need for sleep varies. People who suffer from sleep disorders do not recover adequately, have emotional and physical issues, and low resistance levels.

Sleep is crucial to recovery and well being, and nurses are well-positioned to help their patients achieve and maintain good sleep. Sleep possesses a recovering function and is particularly important in keeping patients in good health. “Sleep deprivation is linked to obesity, type 2 diabetes, cardiovascular diseases and some types of cancer.” Sleep evaluation, sleep patterns and the factors of the environment allow nurses to identify what helps and what gets in the way of sleep, and act accordingly. According to a study conducted by Jess White on the 20-th of August, 2015, the key to improving patients’ sleep during hospitalization and the importance of a calm night for the diseased patients, cannot be emphasized enough. This is one of the vital factors affecting their recovery [1].

The aim of the present study is to establish the degree of impact of operative interventions and the environment on the geriatric patients’ sleep, as well as the adequate care taken by the teams at the Surgical departments. In connection with this, we have set ourselves the following tasks:

To investigate and compare the opinions of geriatric patients about sleeping after surgical interventions.

To analyse the day-to-day activities of nurses working in surgical departments.

Materials and Techniques

Twenty nurses working in the hospital’s surgical departments were inquired. The nurses’ qualification degree is as follows: Specialist – 11, Health care management Bachelor – 5 and Health care management Master – 4.

Their length of service based on specialty is as follows: eight nurses with a length of service up to fifteen years, six nurses with a length of service over sixteen years, and six nurses with a length of service over thirty years.

The patients inquired have undergone various operative interventions, with five-day hospitalization, twenty three of whom are men, and twenty seven are women. The average age of the inquired patients is 65 years.

The study was conducted between 1-st July, 2017 – 31-th July, 2017 at the surgical departments of the Multi-profile Hospital for Active Treatment. Mathematical and statistical processing of the results was carried out.

Method of study:

A sociological method – an anonymous inquiry with open and closed questions. The data were processed using Microsoft Excel.

Results and Discussion

Providing optimum conditions for a good night’s sleep is a precondition for elderly patients of speedy recovery.

Surgical interventions cause serious problems not just for patients, but also for team members – doctors, nurses. The patients feel anxious about surgical interventions, which affects their sleep [2].

Our study shows that 38% of the inquired patients did not have pre-hospitalisation sleep disorders, 34% had sleep disorders more than three times, and 28% had sleep disorders once.

After hospitalization, the sleep environment is changed. Sleep hygiene requires that the room should be suitable and quiet, and the bed should be comfortable. This is one of the common causes of sleep disorders and insomnia [3].
Many aspects of hospitalization may result in patients’ sleep disorders. Along with nightly rounds and checks on vital signs, sleep can be broken by noisy equipment in the hospital room, bright fluorescent lamps and others factors.

Not only that lack of sleep negatively affects recovery, but also a prerequisite for the emergence of delirium in elderly patients.

To ensure sleep hygiene, it is also necessary to ensure the treatment and protection regimen. This is a set of activities, relationships and care which provide a favourable environment for the patient, remove all kinds of harmful irritants, create a positive effect on the patient’s psyche, leading to joyful emotions, high spirits, optimism and faith in recovery. Providing a cozy environment for rest and good sleep is also a requirement [3]. Ten-to-eleven-hour sleep is needed (two hours during the day), sticking to the regimen, avoiding procedures during sleep time; sleeping drugs are administered half an hour before sleep, also, nightly lights and noise should be avoided [3].

According to a press release of John Hopkins Hospital, patients who do not get enough sleep during hospitalization are more susceptible to developing delirium.

In fact, doctor Dale Needham, professor at John Hopkins said that up to 80% of the patients might experience delirium at some point during hospitalization. Achieving adequate amount of sleep is almost as important for the patients’ treatment, as each medication and therapy regimen. [1].

Other diseases can also cause sleep disorders. For example, chronic pain syndromes. A lot of people suffer from headache due to these fits, or have a permanent headache which prevents them from sleeping.

Other diseases which impede sleep are herniated disks and slipped disks. Other diseases getting in the way of sleep are pulmonary conditions due to shortage of oxygen and cardiac diseases.

We should not overlook mental problems, such as depression, dementia, in this contingent of patients leading to insomnia.

Sleep deficiency is associated with the multiple pathology associated with adult patients. Sleep evaluation and sleep patterns, as well as taking into account the environment, allow nurses to identify what helps or hinders sleep and take appropriate actions [4].

Tracing the pain, managing the pain, avoiding injuries, getting over stress, fear, mental preparation, pain killers, appropriate position in bed, are all needed for the patients’ good sleep [3].

The pain syndrome after surgical intervention is one of the main causes of sleep disturbance in patients. According to Gilsenan, the patients who are in pain should ask the medical staff to relieve the pain [4].

When inquired about the most common causes of sleep disorders of patients who have undergone surgical intervention, the nurses answered as follows: pain as cause number one - 16 nurses; fear/stress- 12 nurses; probes, drainage tubes, catheters – followed by a dressing of the surgical wound - 9 nurses; anxiety - 7 nurses; uncomfortable bed – 5 nurses; noise - 4 nurses; heat/cold, the presence of other patients and people who accompany them in the room - 3 nurses; manipulations carried out at an inappropriate time - 2 answers.

In the current study of the intake of sleeping medication, 12 patients answered that they were regularly on sleeping medication, and 38 answered that they were not.
The nurses answer that during hospitalization, 30% of the patients were administered sleeping medication, 11% were administered medication rarely, 50% of the patients were not administered any medication. 9% of the inquired patients said they had sleeping pills of their own, which were prescribed to them before hospitalization.

According to data from some hospitals, including the hospital in Massachusetts, several different strategies have been introduced to ensure better sleep for the patients. Obligatory ‘quiet hours’ have been introduced, where noise and light levels during the night and in the early morning hours have been restricted, to ensure better rest for the patients.

The health care system in New Jersey has gone even further in applying the system. Along with the ‘quiet hours’, the equipment offers the patients relaxing sleeping means such as a cup of herbal tea or aromatherapy with lavender oil [5].

Our study showed what care nurses take in ensuring good sleep for the patients. Pain management of the patients operated on - 20 of the inquired nurses; anxiety relief - 15 nurses; talk with the patient - 10 nurses; keeping silence - 8 nurses, followed by 7 nurses who ensure a comfortable bed; appropriate temperature - 4 nurses, and routing of patients, applied by 2 nurses.

The word as a therapeutic factor, coming through good communication, empathy, attention, individual approach, informed consent; compassion; suggestion of a good outcome, are key to the good sleep of the patients. [3].

In fact, according to a study of the Journal of American Medical Association (JAMA), almost half of all patients who have been awakened for checks on the vital signs, should not have been. This means that hospitals should restrict these checks, and avoid multiple trips to cope with them.

Reduction of all unimportant activities during the night. The hospital with the Yale Medical School does a few things to limit the activity in and around the patients’ rooms during the night. The nurses are given a list of tasks to be carried out before 11 PM. Even the cleaning schedule is changed by changing the time when the staff cleans the floors, so the noise does not prevent the patients from sleeping.

Change of intervals for drug dosage. In the Mount Sinai Medical Centre, hospitals are rethinking the way drugs are administered to patients. In the past, the patients took drugs every four hours, which meant that they were awakened several times during the night. To tackle this, the hospital began administering antibiotics to the patients every six hours. Other drugs which the patients used to take once in six hours, were administered four times a day.
- mainly during the patients’ waking hours [6].

**Figure 7**: Comparative Analysis of the Nursing Care Taken in Sleep Preparation, according to Patients

<table>
<thead>
<tr>
<th>Control of medication intake</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>quiet and aired room</td>
<td>8</td>
</tr>
<tr>
<td>bringing linen in good and appropriate condition</td>
<td>9</td>
</tr>
<tr>
<td>imparting proper position in bed</td>
<td>16</td>
</tr>
<tr>
<td>toilet</td>
<td>12</td>
</tr>
<tr>
<td>ensuring light dinner</td>
<td>5</td>
</tr>
<tr>
<td>pain management</td>
<td>43</td>
</tr>
</tbody>
</table>

A team including Martin Zalsman - Ericson, PhD, Linda Lagerqvist RN, BSc, Sandra Pousette, RN, BSc, has arrived at the conclusion that patients placed in hospital environment suffer from sleep disorders, which has a negative effect on their recovery, health and well being. The aim of this study is to look into the experiences of the nurses and their strategies for encouraging geriatric patients’ sleep by inductive analysis of interpretations. The findings were presented in four categories: 1. Prevention and planning as a strategy for nursing care; 2. Adjustment of the environment as a strategy for nursing care; 3. Drug use as a strategy for sleep nursing care, and 4 – talk as a sleep encouragement nursing strategy is important, as it affects the patients’ recovery. We claim that the use of simple strategies for sensitivity reduction as efficient sleep encouraging measures, should, too, reduce the use of tranquilisers. In a study of Foundation Trust, Sheffield, England, some patients have difficulties resting and sleeping in hospital. Having other people around, noise from the patients or noise from the equipment in the department makes winding down difficult. Being in hospital can be highly discouraging, and you may have concerns about your care, treatment and other issues, which took place outside the hospital: related to your family, or your situation at home. The staff engaged in taking care of you, would like to know if you have concerns in order to help you out of them. You may need further information or confidence which will deal with your worries [7].

According to Gilsenan, relaxation is good for all, but if you need rest and sleep, or if you do sports, it can prove particularly beneficial. Doing some relaxation exercises before bed is a great way to stop worrying, calm down and prepare for sleep.

**Figure 8**: Comparative Analysis of the Factors of the Environment, affecting the Sleep in the Pre- and Post Operative Period

**Conclusions**

The data from our study show that sleep in operated geriatric patients is most adversely affected by: pain, room temperature and anxiety of the patient.

Pain management for each patient, incl. the geriatric ones is a result of complex factors, in which actively participate the physician and the nurse. Timely information from the nurse about the presence of pain, a proper assessment of its extent especially in the elderly, contribute to rapid mastery, and this is a prerequisite for improving the quality of life of geriatric patients.

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