

Reading as a Nursing Intervention for Agitation in Patients With Anoxic Brain Injury

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Abstract

Purpose: The purpose of this article is to describe and recommend reading as a nursing intervention for agitated patients with anoxic brain injury.

Design: The design of this study is a case report of the results from reading to an agitated patient with anoxic brain injury.

Methods: Observation of the effects of reading to an agitated patient.

Findings: Fifteen minutes of reading to an agitated patient during the evening hours had a calming effect.

Conclusions: Reading to agitated patients is an additional nursing intervention with little risk and represents efficient, patient-centered care.

Clinical Relevance: Reading is a successful nursing intervention that has a calming effect on agitated patients.

Keywords: Agitation; anoxic brain injury; patient-centered care.

Introduction

Caring for agitated patients is challenging for nursing staff. Although there are few recent reports of the prevalence or incidence of agitation in hospitalized patients, it has been reported that 15%–86% of hospitalized patients present with signs and symptoms of agitation (Bogner & Corrigan, 1995; Lombard & Zafonte, 2005; Nott et al., 2006). If patient agitation is not adequately managed, patients are at risk for injury from falls, use of restraints, and sedation (Gion & Leclaire-Thoma, 2014). Caring for agitated patients requires additional nursing time to assess and reassess status, to prevent the risk of falling, and to administer and manage restraints and sedating medications. In addition, literature reports assaults on hospital staff occur related to patients with agitation (Gion & Leclaire-Thoma, 2014). The purpose of this article is to describe

nursing interventions, especially reading, for agitated patients with anoxic brain injury.

Case Report

A 48-year-old divorced teacher was admitted to the hospital for gynecologic surgery. She had an unremarkable previous medical history. An anesthesia accident led to a cardiac arrest during surgery and resulted in an anoxic brain injury. By the third postoperative day, the patient was medically stable and admitted to a physical rehabilitation center for cognitive recovery. Due to the patient's impaired cognitive status and no available family, a thorough social history was unavailable. On admission, the patient demonstrated short-term memory loss, poor decision-making ability, and made verbal and physical sexual advances with male staff. During the day, she did not exhibit agitated behavior, but during the evenings and at night, she was agitated and constantly screamed for a nurse to be in the room with her. She feared molestation from intruders entering through her first-floor window. If no one arrived within seconds, she would attempt to climb over the side rails. Ativan, 1 mg daily, orally, as needed for agitation was ineffective. Within the first 3 weeks of her admission, she had three falls, none of which required treatment, although one fall included entanglement in the side rails of her bed.

Information about the patient's nighttime routine was unavailable. The nursing staff initially managed the patient's

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Accepted April 26, 2016.

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Cite this article as:

Schwark, J., & Fields, W. (2017). Reading as a nursing intervention for agitation in patients with anoxic brain injury. *Rehabilitation Nursing*, 42(6), 341–346. doi: 10.1002/rnj.289

evening agitation with television and conversation as a distractor, promises to “check-in” with her every 15 minutes, and assurances that security was protecting the campus against intruders. These interventions resulted in brief interludes of calmness. In an attempt to calm the patient for longer periods of time, a nurse decided to try reading her a book from the hospital library cart. Within 15 minutes, the patient fell asleep for the night. With the success of that first night, the nurse began to read every evening at 9:00 pm. The content of the reading did not seem to matter. What did matter to the patient was hearing a soothing voice for 15 minutes and having another person present in the room. This reading ritual continued throughout her hospitalization, and it ensured a quiet night for staff and patients.

Anoxic Brain Injury

Anoxic brain injury is a component of multiple diagnoses, but it is rarely identified in the list of comorbidities. The diagnoses of cardiac arrest, stroke, anesthesia accident, electrocution, prolonged seizure, asthma exacerbation, attempted suicide, carbon monoxide poisoning, near drowning, and massive hemorrhage are quite diverse. On the surface, these diagnoses appear to have little or nothing in common, but they share an important feature: anoxic injury to the brain (Fitzgerald et al., 2010).

Anoxic brain injury results when the supply of oxygen to the brain is interrupted or reduced. Brain tissue does not possess a muscle tissue’s ability to function anaerobically; the brain requires an uninterrupted supply of 15%–20% of the heart’s blood output. A lack of oxygen-rich blood flow to the brain for 3–5 minutes can cause neuron death and start the release of free radicals that damage the surrounding brain tissue (Garcia-Molina et al., 2006). Blood supply to the brain is interrupted when the heart stops pumping, for example, during cardiac arrest and electrocution, or during an ischemic stroke when blood flow is blocked. Blood supply to the brain is also interrupted when the blood is pumped out of the vasculature, for example, during hemorrhagic stroke and massive hemorrhage. The amount of oxygen in the circulating blood is diminished when oxygen is prevented from entering the lungs as occurs during an anesthesia accident, prolonged seizure, asthma exacerbation, and near drowning, or when the blood’s oxygen binding capacity is affected, as with carbon monoxide poisoning.

Although patients rarely have a primary diagnosis of anoxic brain injury, nurses need to be aware of the numerous diagnoses that are associated with anoxia to the brain, since these patients often demonstrate agitation for varying amounts of time, especially during the early stages of recovery (Levy et al., 2005).

Agitation

Agitation occurs across a variety of diagnoses when blood flow to the brain is interrupted or reduced. Agitation may appear immediately or a week or more following the change in brain blood flow. When agitation appears, it may last for hours to a week. Duration beyond 2 weeks is rare (Levy et al., 2005). When a patient is agitated, the agitated behaviors may be predictable or occur in varying intensity and times throughout the day or night.

On an ongoing basis, the brain perceives massive numbers of inputs, ranging from environmental temperature and lighting to conversation to the tactile feel of clothing. To prevent cognitive overload, the brain filters these inputs, assigning importance and deciding perceptions. Inputs the brain categorizes as unimportant or nonthreatening are ignored or forgotten. Inputs the brain categorizes as important receive immediate attention. When the brain identifies an input as potentially threatening, it evaluates the threat. The danger of driving in traffic, due to its familiarity, will likely be reinterpreted as nonthreatening. Threats that are confirmed as genuine receive maximal attention (Tremblay et al., 2015).

Following an anoxic injury to the brain, these filters are altered. The brain loses the ability to assign relative importance and relative threat levels to the sensory inputs. When all inputs are given the same level of importance or threat level, the brain attempts to attend to all simultaneously and is overwhelmed, triggering the fight-or-flight response (Keatley & Whittemore, 2009). An imbalance in excitatory neurochemicals in the brains of patients with anoxic brain injury is also believed to support the development of agitated behavior (Garcia-Molina et al., 2006). It is important for nurses to recognize agitation so appropriate interventions can be implemented. An agitated patient may present with any of the following: wandering about the room or nursing unit, difficulty focusing and staying still, increased volume and speed of speech, visual scanning of the room, threats of physical violence against staff, or gathering of belongings.

Agitated behaviors can be assessed with the Agitated Behavior Scale. The Agitated Behavior Scale (Corrigan, 1989) assesses 14 agitated behaviors including easy distractibility, impulsivity, physical and verbal aggression, wandering, psychomotor restlessness, verbal characteristics, and emotional lability. Behaviors are rated as absent (1) to present to an extreme degree (4). Scores range from 14 to 56. A score of 22 or greater is considered positive for agitation.

Nursing Interventions

Agitation forecasts itself with early signs and symptoms. Although a patient may not admit to being agitated and

indeed may not be aware of their agitation, the nurse can identify agitation in the patient by assessing for agitated behaviors.

Agitation affords a window of opportunity to intervene. Noticing the subtle signs of agitation, the nurse should try to determine the cause. Is the room temperature comfortable to the patient? Is the light in the patient's room subdued but not so dark that the patient cannot see clearly? Is there too much noise or too much silence? Is the movie on the patient's TV causing them to escalate? Does the patient need to be toileted? Are people the issue: too many, too few, or not the right ones present? Is the patient dealing with paranoia? If the nurse can identify the irritant and remove it from the patient's environment early enough, the patient's agitation may resolve and not escalate to assaultive behavior (Nordstrom & Allen, 2013).

The potential for harm to the patient, other patients, staff, and family members from an assault is probably the most dramatic risk associated with agitation, but there are others. Agitation increases the risk for a fall and patient

harm from the use of restraints. The patient may elope. Other patients may begin to escalate as may the patient's family. Staffing may be affected when workers call in sick to avoid caring for the "difficult" patient.

Nurses learn many ways to deal with agitation in patients. Table 1 compares and contrasts many of these interventions. A very common response is the use of anti-anxiety medications. These agents are usually easy to administer and considered effective. Ordered by the physician, nurses frequently consider them benign and appropriate. One difficulty in the physical rehabilitation arena arising from their use is the occurrence of lingering drowsiness, which impairs balance and cognition, and so impedes the patient's therapies (Remington et al., 2006). Another problem that rehabilitation nurses see with these drugs is a paradoxical reaction in which the medication causes the patient's agitation to escalate instead of resolve. Some have suggested one component of this paradoxical reaction is the alteration in neurochemistry following a brain injury. Paradoxical reactions are seen more frequently in

Table 1 Nursing interventions for agitation (Ackley & Ladwig, 2010)

| Interventions | Benefits to care | Burden of care |
|--|--|---|
| Anti-anxiety medications | • Easy to administer | • May leave the patient too groggy to participate in therapies • Potential for paradoxical effect |
| Restraints | • Easy to administer | • Increased risk of injury due to patient fighting the restraint and entanglement • Increased monitoring and documentation requirements |
| Patient attendant: hospital staff | • Reduces some of the burden on the nurse | • Loss of staff productivity • Need to be oriented to the unit and the patient's needs • May cause patient agitation |
| Patient attendant: family member | • Familiar face may have a calming effect • No loss of staff productivity | • Need to be oriented to the unit and the patient's needs |
| Distraction: TV | • Easy to implement • Little risk for injury or side effects | • Need to assess appropriateness of programming for patient |
| Distraction: music | • Easy to implement • Little risk for injury or side effects | • Need to assess appropriateness of genre for patient |
| Distraction: games | • Little risk for injury or side effects | • Time intensive • May increase agitation if the game is too complex or the patient is too competitive • May take more time than the nurse has available. |
| Distraction: conversation | • Easy to implement • Tool for gathering information that can be used to improve effectiveness of distractions and patient teaching • Little risk for injury or side effects | |
| Distraction: massage | • Little risk for injury or side effects | • Special training needed • Special equipment may be needed • Time intensive |
| Distraction: audio/video recording of family member(s) | • Easy to implement once available • Little risk for injury or side effects | • Time and equipment intensive on the part of staff and family to generate the recordings |
| Distraction: reading stories | • Easy to implement • May be implemented by multiple disciplines • Little risk for injury or side effects | • Time intensive although often less than is assumed |

the young and the elderly, who have less efficient drug metabolism and clearance mechanisms, which supports the interpretation that altered neurochemistry causes these reactions (Mancuso et al., 2004).

Another common intervention for agitation is the use of restraints. As with medications, restraints are usually fairly easy to implement, but they too come with drawbacks. It is often assumed that restraints keep patients safe; it is the formal policy of many hospitals that restraints may be used to keep patients from injuring themselves (Restraint & Seclusion Use). However, the research shows that patients placed in restraints actually have a higher injury rate than those who remain restraint-free (Mohr et al., 2003). The common explanation is that putting a patient in restraints causes their agitation to escalate as they fight the restraints and struggle to release themselves. Placing a patient in restraints also adds greatly to the burden of care on the nursing staff since staff are expected to monitor their restrained patients frequently to ensure the patient's welfare.

An alternative to restraints is the use of a patient attendant. Although less restrictive than restraints, patient attendants may still cause the patient to escalate (Waszynski et al., 2013). Significant drawbacks to their use include the cost to the hospital and the need to orient the attendant to their care responsibilities (Mcnett et al., 2012). At Sharp Grossmont Hospital, patient attendants float from one unit to another. Patient attendants therefore need to be sufficiently oriented not only to the unit but also, more specifically, to the individual patient's care. If not, they could inadvertently contribute to the patient's agitation by watching an inappropriate movie on the patient's television or engaging in another activity, which would be similarly irritating to the patient. If willing, a family member could also be invited to sit with the patient. This would alleviate the cost issue for the hospital, but the family member needs to be oriented to the unit and the patient's individual care needs just like the patient attendant and for the same reasons.

An accepted intervention for agitated behaviors is distraction (Ackley & Ladwig, 2010). Distraction can take many forms including television, music, games, conversation, massage, and reading. Distraction works by giving the patient a single input to focus on. In the current connected generation, many take pride in their ability to multitask, surfing online while at the same time holding a conversation with a coworker and text messaging a friend. Psychologists report that true multitasking, the ability to pay attention to two cognitively demanding tasks concurrently, is a myth (Hamilton, 2008). Those who seem adept at multitasking are merely adept at rapidly switching their attention from one task to the next, although all the tasks

inevitably suffer from a lack of focus. Distraction as an intervention for agitated behavior takes advantage of this inability to pay attention to two tasks at the same time by giving the patient some other input to focus on. When the patient does not attend to their noxious stimuli, their agitation does not escalate and instead resolves.

Although distraction is a recommended and effective intervention, it is not usually the first intervention staff attempt with agitated patients. Staff typically opt to use medication and restraints before attempting distraction (Mcnett et al., 2012), largely because distraction is perceived as being too time intensive. Attention is required to capture the signs of increasing agitation. Time is required to get to know the patient to help staff more accurately predict which distractions are likely to be successful. Time is required to implement the distraction. Time is required to assess the effectiveness of the distraction.

In the presented case report, the evening shift nurse attempted distraction with little initial success. Reorientation failed to quiet the patient's paranoia. Music and television similarly failed to quiet her agitation. Restraints only caused her to escalate as she attempted to escape to an environment she perceived as safe, one with people around her. Medications were ineffective. The hospital did not choose to assign a patient attendant because the patient was not agitated during daylight hours. No family or friends were available to assist in the patient's care. She understood that a recording of a person did not afford the same safety as having a person physically present. The nurse was expected to manage a full patient assignment and could not provide 1:1 care for this patient. All available time was spent in the patient's room finishing charting and engaging in conversation. Any conversation invariably ended up descending into the same loop of the patient's fear of intruders followed by assurances that security was always present to ensure her safety. Following all the usual inventions, the patient was handed off to the next shift still awake and agitated.

Two days after admission to rehab, having failed to manage the patient's agitation with the usual distractions, the nurse decided to read to the patient. Reading had not been tried before, and it would prevent the repeating loop of conversation seen in the previous shifts. The nurse read one short chapter from a book randomly selected from the library cart and looked up to find the patient sleeping quietly. Over 2 hours remained before shift change. The nurse had more than enough time to finish the few tasks that remained and was able to hand off the patient, still sleeping, to the next shift. The patient slept quietly throughout the night and every subsequent night in which this intervention was used.

Bedtime Stories

Why do stories work to quiet agitation? A parallel question worth exploring is why bedtime stories quiet children and allow them to fall asleep. The connection between these two groups is the cognitive similarity between children and many patients who have experienced a brain injury. Children do not have a library of life experience to refer to; likewise, many patients in the early phase of recovery from brain injury that does not allow them to form short-term memories also cannot refer to life experience.

Children acquire the concept of object permanence at approximately 6 months (Bertenthal et al., 2013), yet they do not learn the concept of the permanence of their social world at a similarly early age. The anxieties of childhood include fear of separation, fear of being left or abandoned, and fear of dying (not merely sleeping). Although they may not verbalize it, children wonder whether the world as they know it and need it to be will still be in place when they wake up. Their life experience is not deep enough to assure them that their world will still exist when they wake up. Patients with brain injury who have not yet recovered to the point of being able to remember where they are and who the people taking care of them are, in a very similar cognitive condition.

Albert and Jones (1977) examined the effectiveness of bedtime stories in great detail, discussing why they succeed in calming the anxieties of childhood. A story, they posit, can be considered a reward. Hearing a story read is a pleasurable experience. As the reader must expend time and effort to read, reading shows the hearer they are important, cherished, and valued. Feeling important, cherished, and valued is a soothing thought both for children and for patients in the hospital who feel ripped out of normalcy and into an environment where they have no control.

Stories also demand attention. This is true on a personal level; if the story is personally interesting and pleasurable, the desire is strong not to miss any of it. When attention is directed at one input, the other irritating inputs cannot be attended to and the child or patient is soothed. This is also true on a social level. When a story is being read, social rules demand that one's personal activities must be reduced. If they are not, the story may be suspended and the opportunity to hear other stories in the future may not come again. Parents teach their children this social rule when they read them stories. Without cognitively acknowledging it, patients with brain injury also tend to follow this social rule, and again, when their attention is focused on the one input of the story, the brain is not free to attend to other irritating stimuli.

Another way in which many children's stories tend to soothe the anxieties of childhood stems from the nature

of the book itself in which the story is contained. A story contained in a book has a recognized beginning and end. By the end, the author answers all the questions that the story raises so there is no incentive to wonder what happens next. The completeness of the story is symbolized by the blank pages in the book before the story begins and after the story ends. The story is fixed and will not change. It has permanence. It has stability. It will still be the same tomorrow. There is the sense that if anything is missed that part can be captured again at any time. Children are soothed by this stability. Patients with brain injury who see little stability in their lives because of their problems forming short-term memories find similar comfort in stories.

Recommendations for Future Research

Extensive literature searches failed to identify either any quantitative research on the use of reading as a tool for managing agitation in anoxic brain injury or investigation of the parallels between cognitive development in early childhood and cognitive function during recovery from anoxic brain injury. With its focus on one compelling case study, this article summarizes conclusions based on the clinical experience of one physical rehabilitation nurse. This article recommends reading as a viable addition to the distraction techniques that are already recognized as effective tools for the management of agitation. This recommendation would be strengthened considerably by quantitative research on the use of reading as a distractor. Research comparing and contrasting the cognitive qualities of young children with the cognitive functioning of patients recovering from anoxic brain injury would strengthen this recommendation further.

Conclusion

It is certainly true that nurses are busy with their care activities. It is also true that distraction takes time as does finding a distraction that will be successful. But it is equally true that managing agitation, restraints, and medications takes time too. Nurses are expected to be efficient managers of their time and to provide appropriate and compassionate care for their patients. Nurses are expected to put the welfare of the patient foremost among their priorities. Sometimes that means attempting the intervention first that may require more time and assessment up front but is no less effective and has less potential for harm. Nurses need to think ahead when planning their care and get away from focusing on tasks. When managing agitation, if the nurse does not keep the patient from escalating, the nurse will most assuredly spend more time later managing the escalation.

Key Practice Points

- Several diverse medical diagnoses share the aspect of anoxic brain injury, which can lead to agitation.
- Active assessment of patient behavior can help staff to recognize agitation early, when it is easier to treat.
- The interventions of medications and restraints are not without some risk.
- Reading as a form of distraction is an effective intervention for patients experiencing agitation as a result of anoxic brain injury.

Disclosure

The authors declare no conflicts of interest with respect to the authorship and/or publication of this article.

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