Near-Hanging and its Management in the Acute Inpatient Mental Health Setting

Luke Molloy, RPN, MN(Hons); Marie Brady, RPN, AdvDip(MHN); Paul Beckett, RMN, MN; and Joy Pertile, RN, MN

ABSTRACT

Being admitted to an inpatient mental health unit does not necessarily protect a patient against suicidal behavior. Given their purpose and design, these clinical areas can provide a safe environment for reducing hanging deaths. Strategies for reducing suicide by hanging in acute inpatient units should include ongoing review of the safety of the environment and the emergency management of near-hanging. After receiving a request from inpatient nursing staff to develop an education program focused on the emergency management of near-hanging, the authors undertook a review of the literature to (a) identify the evidence base within this area and (b) establish an effective means to promote safe practice with the staff. This article provides a synthesis of the literature review and its implications for nursing practice. [Journal of Psychosocial Nursing and Mental Health Services, 52(5), 41-45.]
Following requests from nursing staff for education focused on practice related to the management of patients following a near-hanging, the authors undertook a literature review and developed a program of education on this area. Some of the authors had experience of near-hangings in clinical practice and achieving positive outcomes in responding to these sentinel events. This experience led the authors to believe highlighting safe practice to nursing staff could positively affect safety in the inpatient setting. This article represents a synthesis of the literature review undertaken in developing the program and discusses implications for nursing practice.

METHOD
To identify and evaluate published studies relating to near-hanging, a review of the peer-reviewed literature was initially undertaken. The major nursing, medical, and psychological databases were searched, including CINAHL, MEDLINE, PsycINFO, EMBase, the Joanna Briggs Institute, and the Cochrane Library. Keywords included hanging, near-hanging, hanging attempt*, incomplete hanging, and suicide attempt*. Government and non-government organizations’ literature on the topic was also examined, as it related to the topic through Internet searches. The key findings from the literature search were identified and an analysis is provided on their relevance to nursing practice.

RESULTS
The search retrieved a total of 2,388 articles. Due to incongruence with the search focus, 2,336 articles were excluded by abstract. The authors reviewed the full texts of 52 articles. Six articles were found to have relevance to the chosen population and clinical site. The evidence base on near-hanging and its management is limited and consists of observational studies, case reports, and topic reviews.

DISCUSSION
Hanging occurs when a ligature is applied to the neck of a suspended person, causing external pressure leading to death. It can be a result of a suicidal act; however, it can also be a result of capital punishment, through misadventure or homicide. Hanging can be described as a complete hanging when the body is fully suspended by the ligature or an incomplete hanging when part of the body continues to touch the ground. Near-hanging is the term used to describe the unsuccessful suicide attempt. It can cause arterial and venous obstruction, resulting in decreased cerebral perfusion and hypoxia. Vagal stimulation from the ligature on the carotid sinuses and increased parasympathetic tone may also result in hypotension and bradycardia.

Hanging is one of the most common methods for suicide worldwide, and rates of hanging have increased in recorded fatal suicides over the past 2 decades (Large & Nielsen, 2010). It has a high lethality, with an estimated fatality rate of more than 70% (Gunnell, Bennewith, Hawton, Simkin, & Kapur, 2005). Death generally occurs as a result of asphyxial cerebral injury (Karanth & Nayyar, 2005). Research highlights that in cases of near-hanging where individuals receive emergency care and treatment, the survival rates can be high. Davidson (2003) identified that 94% of a total 72 near-hanging presentations survived following admission to an emergency department. However, Salim et al. (2006) noted that 3.5% of those discharged following hospital admission for near-hanging suffered severe or permanent disability.

The majority of near-hanging patients arrive unconscious (Martin, Weng, Demetriades, & Salim, 2005). There is no specific treatment for an unconscious near-hanging patient, beyond general supportive therapy in the intensive care unit (Borgquist & Friberg, 2009). Specific injuries resulting from near-hanging include cerebral anoxia, laryngeal fracture, cervical spine fracture, tracheal fracture, pharyngeal laceration, and carotid artery injury (Salim et al., 2006). In some cases, injuries may be limited to abrasions and contusions.

Suicidal Behavior in the Inpatient Mental Health Setting
Being admitted to an inpatient mental health unit does not necessar-
ily protect a patient against suicidal behavior. Inpatient suicide rates in the United States, China, New Zealand, Australia, Austria, and the United Kingdom have been found to range from 100 to 400 per 100,000 patients admitted (Combs & Romm, 2007). Baxter and Appleby (1999) identified psychiatric inpatients as being 10 times more likely to commit suicide than the general population.

Predictors of a suicide attempt during inpatient admission are suicide attempt as the reason for admission, suicidal ideation on admission, and diagnosis of schizophrenia, personality disorder, and affective disorder (Spiesl, Hübner-Liebermann, & Cording, 2002). Meehan et al. (2006) reviewed inpatient suicides in the United Kingdom between 1996 and 2000 and found 73% were by hanging, with the most commonly reported ligature being belts and the most commonly reported ligature point being hooks or handles.

**Strategies to Reduce Suicide by Hanging in the Inpatient Setting**

Beyond the ongoing therapeutic interventions in acute inpatient settings, nurses undertake various activities that focus on ensuring the safety of the clinical environment. Many nurses will undertake regular or continuous observation of “at-risk” patients. Nurses will assess patients’ level of risk for suicide and provide flexible approaches for suicide prevention that are cognizant of the patients’ interests and safety during their admission (Cheng, Hu, & Tseng, 2009).

Given their purpose and design, acute mental health inpatient units can provide a safe environment for reducing hanging deaths. Gunnell et al. (2005) have identified that strategies for reducing hanging in acute inpatient units should include ongoing review of the safety of the environment, including access to potential ligature points and ligatures, and resuscitation and the emergency management of near-hangings (Table). High-risk patients may need to have their access to belts and shoelaces restricted in reflection of their current risk assessment (Appleby et al., 2001). Staff should also have access to a noose-cutting blade (e.g., ResQHook®) to deal with near-hangings.

**Education**

Given the focus of the review, identifying approaches to education for the management of near-hanging was paramount. In reviewing the sources available, the authors could not find any educational approaches used specifically within this area. One possibility that our team believed could be used was high-fidelity clinical simulation. High-fidelity clinical simulation involves the use of an environment that mirrors the clinical setting and an interactive mannequin that can respond verbally and physiologically to many nursing interven-

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<th><strong>TABLE</strong></th>
<th>MANAGING A NEAR-HANGING IN AN INPATIENT MENTAL HEALTH UNIT</th>
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<tbody>
<tr>
<td>• Alert other staff.</td>
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<td>• Stabilize the neck, cut off the ligature.</td>
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<tr>
<td>• Call emergency responders.</td>
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<tr>
<td>• Do not leave the person until emergency responders arrive.</td>
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**Airway Breathing Circulation**

Throughout treatment, ensure cervical spine (C-spine) immobilization. This can be done manually or with a C-spine immobilization device.

- If the patient is spontaneously breathing, administer high-flow oxygen.
- Position the patient who is spontaneously breathing to minimize the risk of aspiration. Ensure neck stabilization when positioning the patient.
- If the patient is inadequately ventilating, use a facemask (preferably non-rebreather mask) or a bag valve mask (BVM) device to ventilate the patient. If the patient is not breathing spontaneously, use a BVM to ventilate the patient.
- If the BVM is inadequate for ventilating the patient, insert a laryngeal mask airway or endotracheal tube to ventilate the patient. Ensure the C-spine is stabilized when ventilating.
- If the patient is unresponsive, commence chest compressions at a rate of 100 compressions per minute and a ratio of 30:2 (compressions to ventilation).

Obtain a history including the patient’s position, knot placement, type of ligature, ligature point, and the height of the drop.

Leave the scene intact for investigation.

Provide support to other people in the environment who may be distressed, including other patients, staff, or visitors.

Follow all local related policies and procedures in regard to incident reporting, management, and review.

**Note.** Adapted from Gunnell, Bennewith, Hawton, Simkin, & Kapur, 2005; World Health Organization, 2003.
Given their purpose and design, acute mental health inpatient units can provide a safe environment for reducing hanging deaths.

CONCLUSION AND CLINICAL IMPLICATIONS

Being admitted to an acute mental health inpatient environment does not necessarily prevent a person from committing suicide, but it does provide a safe environment in which risk assessment and risk management can take place. Although inpatient mental health units have environmental modifications to reduce risk, they cannot totally eradicate it. Therefore, it is important for mental health nurses to be able to respond effectively to near-hanging incidents.

From our experience, the emergency management of such incidents is one area that nurses want to receive ongoing clinical professional development education. Such education is one way of reducing suicide in the inpatient setting (Gunnell et al., 2005). The authors could identify no program of education in the area of managing near-hangings during their review, and there was limited nursing literature on the area in general. Given the risk of such critical incidents in the acute mental health inpatient setting, the limited evidence base supporting nursing practice in this area is concerning.

Following a review of the literature on near-hanging, our team identified clinical simulation as one means of supporting safe practice. This provides the possibility of undertaking emergency management of the near-hanging patient in a low-risk environment. High fidelity simulation offers nurses the chance of applying and developing their clinical skills in a realistic, yet safe, controlled learning environment. This can enable nurses to prepare for these rare crisis events.

REFERENCES


KEYPOINTS

1. Hanging is the most common means of attempting suicide in inpatient mental health units.

2. Strategies for reducing hanging in acute inpatient units should include ongoing review of the safety of the environment, resuscitation, and the emergency management of near-hanging.

3. Near-hanging is the term used to describe the unsuccessful suicide attempt using a ligature; in cases of near-hanging where people do receive emergency care and treatment, the survival rates can be high.

4. Clinical simulation can be used to provide experience of resuscitation and emergency management of a simulated near-hanging situation.

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