

Prevention and management of agitation in the neuroscience patient: Recommendations from Australasia

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Abstract

Background: Neuroscience patients can present with agitation due to a number of factors such as the presence of cerebral abnormalities, tumours, trauma, or medications. Agitation among neuroscience patients that escalates to violence and aggression appears to be increasing and highly challenging for neuroscience nursing practice across Australasia. Neuroscience wards or units endeavour to effectively manage patients who are affected by agitation and provide appropriate training for clinical and non-clinical staff. Following a workshop through Australasian Neuroscience Nurses' Association (ANNA), a group of neuroscience nurses, passionate about improving the care of neuroscience patients presenting with agitation and the safety of the staff; collaborated and researched the most effective prevention and management strategies that can be used to ensure that care delivery for these patients is therapeutic and effective.

Purpose: The purpose of this paper is to share recommendations that can guide the prevention and management of agitation among neuroscience patients from the perspective of neuroscience nurses in Australasia.

Discussion: These recommendations have been discussed from hospitals across Australasia including Perth, Brisbane, Sydney, Canberra, Melbourne, and Wellington in the hope that other cities can make changes in their own hospitals to inform neuroscience nurses and allied clinicians, improve guidelines and provide effective education for staff members that interact with neuroscience patients.

Key words

Prevention, management, agitation, neuroscience patients, recommendations, Australasia

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Background

Neuroscience nursing is a challenging clinical speciality that includes the management of agitation, violence and aggression routinely amongst patients with complex neurological conditions such as brain tumours, traumatic brain injuries, seizures, cerebral bleeds, aneurysms and movement disorders (Lau et al, 2017; Trahan & Bishop, 2016). Agitation is an acute behavioural syndrome that is characterised by a variety of behavioural disturbances such as inattention, disinhibition, emotional lability, restlessness, impulsivity and aggression (Mortimer & Berg, 2017; Richmond et al, 2012). Agitation leading to violence and aggression is a common occurrence among neuroscience patients with the cause being multifactorial and complex (Teece, Baker, & Smith, 2020).

Traumatic brain injury (TBI), which results from an impact to the brain due to an external force can lead to cognitive impairment, physical disability, as well as behavioural changes such as agitation, and impaired self-awareness (Kivunja, River, & Gullick, 2018; McGuire et al, 2014). The severity of the patient's TBI and the areas of the brain impacted can increase the risk for agitation. Recognising and responding early to the presence of agitation and potentially harmful behaviours among neuroscience patients can help guide early enactment of non-pharmacological and pharmacological interventions that can reduce the risk of harm for patients and others (Mortimer & Berg, 2017).

Methods

To guide this paper, a review of the literature focusing on agitation in neuroscience patients was undertaken by a group of nine neuroscience nurse clinicians practicing at multiple hospitals in Australia and New Zealand. The key themes that emerged included education, patient care, de-escalation and patient and staff safety measures. These were discussed at an Australasian workshop which was attended by neuroscience nurse clinicians from Sydney, Perth, Brisbane, Canberra, Melbourne, Adelaide, Christchurch, Waikato, and Wellington. Through collaboration via online workshops and discussions, neuroscience nurses from across these localities identified the issues of concern across Australasian neuroscience wards and determined areas for improvement so that recommendations could be made.

The recommendations relating to the prevention and management of agitation among

neuroscience patients are presented using four sections. These sections are explored in the proceeding discussion as; Section 1: Education; Section 2: Patient care; Section 3: De-escalation, restraint and medication; Section 4: Staff and patient safety measures

SECTION 1: Education

A study interviewed 692 nurses caring for neuroscience patients presenting with agitation over a year and the number one concern raised was the lack of education provided to nurses in caring for this cohort of vulnerable patients (Oyesanya et al, 2018). Caring for patients with these acute and chronic cognitive impairments, complicated by neurocognitive pathology was identified as being challenging and requiring extensive knowledge in the behaviours of which this cohort of patients exhibit. Education in recognising escalating behaviours, identifying dangerous situations and self-care are all areas of particular importance to ensure safety of staff when caring for patients who may present as easily agitated, sexually disinhibited, potentially violent and aggressive.

The workshop determined that education regarding agitation among neuroscience patients should be provided for all staff including receptionists, health care assistants (HCAs), nurses, medical officers/doctors, allied health, cleaners and administrative staff who support the work on the ward. This training could be provided together with all members of the multidisciplinary team so that they are able to work together to support each other. Specific separate training could also be provided for individual teams. A large proportion of neuroscience wards represented did not have training provided specific to neuroscience patients.

Recommendations

We recommend that neuroscience clinical settings should provide workplace violence prevention and safety education using an evidence-based curriculum every two years with regular updates yearly. Topics to include are: communication, behaviour and warning signs, stages of escalation and de-escalation, and ward culture, simulations and or situational case studies, restraint and legal requirements. These topics will be described in more detail below.

Communication

Communication is an interactive process where the nurse provides information and

expresses caring that is aimed at supporting and promoting positive outcomes for the patient and can be both verbal and non-verbal (Yagil & Dayan, 2020). Psychology professor Albert Mehrabian (1971), explains a concept about communication which is still used and relevant today. This is the concept that communication is made up of 7% verbal, 38% tone of voice and 55% body language and therefore a focus on body language and tone is fundamental. It is important to enable the patient to feel empowered and for the staff to show empathy, respect and build rapport.

There are three useful concepts that can be taught and applied when caring for a neuroscience patient who presents with agitation. These include active listening and to allow venting and negotiating. These concepts are explained below.

Active listening is a useful concept for communicating with the patient. This concept is where the healthcare professional listens to what the patient has to say, acknowledges their perspective, and repeats the information back summarising what they have said allowing the professional to see the information through the lens of the patient. This active listening is also shown through body language (Sharifi et al, 2020).

Allowing the patient to vent and voice their frustrations in a safe space gives them the opportunity to help calm themselves when they are feeling agitated as well as allowing the healthcare professional to understand their needs (Kim et al, 2020).

Negotiating is used when an individual's goals are different to what a healthcare professional thinks is best for them. Negotiating is successful when a solution that promotes the patients' health, safety and wellbeing has been established (Patrick, 2022).

Behaviour and warning signs

Nurses' confidence in dealing with agitation presenting as challenging behaviour has been shown to increase significantly when they have deeper understanding of the stages of challenging behaviour and warning signs (de la Fuente et al., 2019; Tölli, 2018). With both theoretical and practical understanding of these concepts, nurses can better manage challenging situations, thereby reducing the incidence of agitation with a greater awareness of prevention strategies. A study identified that adequate training for nurses in behaviour management can facilitate the enactment of effective strategies to achieve positive outcomes for patients experiencing episodes of agitation (Williams et al., 2016). The warning signs for agitation and related behaviours of concern are listed in table 1.

Stages of escalation and de-escalation

We recommend that nurses caring for neuroscience patients who present with agitation should apply the five stages of escalation and de-escalation as proposed by Kaplan and Wheeler (1983) which are as follows:

Phase 1 – Triggering event – Think about what is going on for the patient, do they have any unmet needs, has something or someone triggered them?

Table 1: Warning signs

Pacing	Flushed skin
Delusions	Problems focusing
Rubbing forehead	Red eyes
Mood changes	Confusion
Furrowing eyebrows	Flared nostrils
Scowling	Clenched fists
Deep breaths in or accelerating breathing	Cupping fist
Grinding teeth	Swearing
No eye contact	Sighing
Disorganized thinking	Sarcasm
Crying	Muttering
Shaking or trembling	Slurred speech
Criticizing	Talking louder
Demanding	Sweating
Hallucinating	Staring

Warning signs taken from a collection of resources: (Chapman et al., 2013; Jackson, Wilkes and Luck, 2014; De la Fuente et al., 2019).

Phase 2 – Escalation – This is the phase where the patient is ramping up from agitated to crisis phase so it is important to know the signs of agitation. Maintaining a safe distance of two arms lengths is fundamental to maintain personal safety.

Phase 3 – Crisis - Rational thought disappears and emotions take over. During this phase it is important to ensure patient and staff safety. Is it safe to be there? What can be done to reduce the people in the room? What is it I need them to do? Is someone at risk of immediate harm?

Phase 4 – Plateau or recovery – There is still potential for violence during this stage and calming down can take a while. It is important to give the patient time and space but de-escalation can occur quickly in this phase.

Phase 5 – Post-crisis depression – The patient might have feelings of guilt or shame. It is important to debrief the patient during this phase.

Culture of the ward

The culture of the clinical setting should be supportive towards managing patients presenting with agitation using strategies that are ethical. Education regarding the culture of the ward is fundamental as being proactive in preventing escalation of agitation is beneficial not only to the patient but also prevents harm to other patients and staff (Kynoch, Wu, & Chang, 2011). Assessing and addressing patients' needs early and regularly may avoid a crisis situation. By involving other members of the multi-disciplinary team early and working together with a team focus, they may be able to put plans in place to prevent escalation of the situation. Assessing the suitability of the patient's location is important; do they need to be moved to a quieter area, an area of higher visibility or moved away from the patients they are with? It is also important to act on information that is heard if the information is concerning and this information should be given to security and discussed with the ward manager or nurse in charge. The teaching of the culture of the patient is also fundamental and may be specific to each hospital or ward but ideas include taking time to get to know the patient, appropriate communication and family support and ensuring consistency in care. See section 2 for more information.

Simulation and case scenarios

Simulation has been used to educate neuroscience nurses on situations of violence and aggression and has been shown to not only reduce incidences of violence but the prevention of these situations occurring in the first place (Bordignon & Monteiro, 2019; Adams et al, 2017) identified that education should be provided in a clinical context specifically organised for specialist areas rather than a generic course, including feedback from real incidents. Working through a simulated example using role play can allow staff to work together as a team, put tools they have learnt into practice and gain confidence in dealing with events quickly and effectively. This also allows for reflection and debriefing of the situation.

Case scenarios are another tool that can develop nurses' effectiveness when caring for patients presenting with agitation. Discussing case scenarios allows staff to think through responses as a team to a hypothetical situation that may occur and could be discussed in a brief in-service. By working through pertinent scenarios, the team are able to develop and put a plan in place for such situations.. Some examples of case scenarios that can be practiced include: a patient has a weapon; a patient is agitated and moving around the ward; a patient is absconding, and a patient in an escalating agitated state.

For example, if a patient is moving around the ward in an agitated state and the nurse is with the patient but unable to communicate much to their colleagues, they could use a simple code word such as 'banana' or something easy that works for the ward. When their colleague hears this word, they respond by repeating the word banana back and initiating a process which could include the following:

The person who has heard the code word 'banana' does the following:

- Ask another colleague to support the nurse with the patient
- Call security for urgent support
- Inform co-ordinator of ward to lock down area – they activate lockdown and follow up with patient and nurse
- Informs doctor to assess the patient
- One person to close all doors to patient area
- Once the situation is managed, the co-ordinator or manager debriefs with the nurse and patient to see how this can be avoided in future.

In these given situations, the nurse, medical officer/doctor, security team and psychiatry team must know their role and what to do when or who to contact in each situation and ensure a team approach to the management of the patient.

Breakaway techniques may be useful so that nurses are able to safely free themselves from a patient who may be trying to hold them up (Harwood, 2017).

Legal requirements

Legal requirements vary across countries, states and hospitals and therefore recommendations must be guided by local policy and legislation. However, some discussion points would be: what is the local policy for when a patient leaves the hospital or is threatening to leave? What should you do if you overhear information that is concerning? What should you do if you suspect a weapon?

SECTION 2 - Patient care Patient relationship

When researching recommendations for the management of neuroscience patients presenting with agitation the most commonly suggested approaches are pharmacological. Williams et al. (2016) raises the issue of decreased patient engagement associated with chemical and physical restraints. Non-pharmacological interventions have been proven to be effective in the management of agitation (Williams et al, 2016) As there is limited evidence surrounding the non-pharmacological management of agitation this paper proposes the following recommendations to facilitate therapeutic relationships and reduce the likelihood of agitation secondary to unmet needs.

Recommendations

These recommendations are largely based on providing person-centred care. Involving the patient and family members in the decision-making process when planning care and respecting the individuals' choices further enhances the therapeutic relationship between the caregiver and the patient and could promote positive patient responses. Nurses should take time to establish positive meaningful, empathetic patient- nurse relationships to enable the delivery of person-centred care that is congruent with cultural preferences, likes, dislikes and general personal care needs (Harwood, 2017). We recommend getting to know the patient as this

helps to build rapport with both patients and family members and consistency in care regarding staff involved, information given to patient and staff and the environment the patient is in (Carrier et al, 2021).

Considering the varieties of multicultural societies available in New Zealand and Australia, it is imperative for health professionals to develop cultural competence or an awareness of their patient's cultural values and beliefs in order to provide effective care (Walker, Schults & Sonn, 2014 & Durie, 2001). In addition to this, there must be a fundamental shift in the concept of health that incorporates the cultures and worldviews of our diverse communities to improve health outcomes.

Culture is not a set of traits or characteristics shared by people from the same geographic or ethnic background but of a wider domain of evolving identities, knowledge and practices (Choudhury & Kirmayer, 2009). Culture is also a totality of socially transmitted behaviour patterns, arts, beliefs, and all other products of human work and thoughts that are considered as the expression of a particular community, group or population (Durie, 2001). There are many cultures to be aware of and not necessarily based on nationality, race or ethnicity or religion but that of many groups such as the teenagers/elderly, the poor, gay/homosexual and transgender, professional groups, army and gangs (Durie, 2001). It is also important to take into consideration that patients can belong to multiple cultures concurrently. It is essential to have an understanding of who the patient is culturally and communicating that understanding between the nurse and the patient during confrontational times which can generate a sense of trust (Choudury & Kirmayer, 2009; Lakhani, Townsend & Bishara, 2017).

The key is to build rapport by introducing oneself and discovering those cultural affiliations by regularly asking about a patient's ethnicity, hobbies, profession, religion and other aspects of their life through thorough social history assessment or just through clear communication with the patient and their families (Durie, 2001, & Lakhani, Townsend & Bishara, 2017). Identifying cultural aspects that may affect how their care is delivered and communication preferences is fundamental. Involving the patient in their care can support the attainment of positive care outcomes (Freeman, Yorke, & Dark, 2018).

Nurses should build trusting relationships, use non-confrontational, simple language, remain calm and aim to understand why the patient is exhibiting emotional or psychological distress (Eweida et al., 2022; Harwood, 2017). Communication is key to any therapeutic relationship and the ability to interact with your patient from a background different to yours should be in a respectful and effective way. Identifying and implementing tools to break down barriers towards a successful relationship and being aware of patient needs is vital. Barriers include, language barriers, cultural and social norms, gender preferences, kinship network, family dynamics, barriers to care, health literacy (Durie, 2001 & Lakhani et al, 2017). Having an awareness of such concept about your patient will facilitate the most acceptable treatment plan for everyone involved for example, language barriers can be broken down by using interpreters, family members and communication boards to communicate. Utilising support networks and services within health care services is fundamental to treatment plan. In addition, support from family members to assist with behaviour management is also important.

Consistency is also key to ensuring the patient remains familiar with their environment and care. This includes consistency with staff caring for the patient, consistency in the environment so they are not moved all around the ward when bed moves need to take place and if security are involved, they are also consistent with their approach. The information given to the patient and family must also be consistent, such as number of visitors allowed or times for visiting as this can cause unnecessary tension (Carrier et al, 2021).

According to Maslow's hierarchy of needs, basic psychological needs include a sense of connection, respect and recognition (Maslow, 1987). Getting to know the patient's likes and dislikes is an easy way to connect with a patient and provide them with recognition and is fundamental when providing 1-1 support.

Some ideas for implementing this include a patient information board with things like preferred name as well as correct pronunciation, family names and pets' names, hobbies, favourite music and TV shows, favourite foods, and dislikes. When displayed at the patient's bedside, this board has proven to be particularly helpful in allowing staff to connect with patients, especially when the patient has an altered level of consciousness or brain function (Hosseini, Valizad-hasanloei, & Feizi, 2018). Communication boards have also

been an effective tool to communicate needs for patients with speech difficulties as many patients with dysphasia are unable to communicate pain, toileting or hunger. A board with visual and written cues can be helpful in these circumstances and may reduce agitation resulting from any anxiety or inability to communicate (Hosseini et al., 2018).

The difference in location of treatment can also impact the wellbeing of the patient consequently impacting the implementation of the treatment plan (Lakhani et al, 2017). In this case, having a familiar face from family members or a close friend can assist with reorientation and redirection during agitation management. Hospital neuroscience wards should encourage family members to visit patients more frequently as regular interactions can assist with managing agitated behaviour; they may be a valuable source of information and can provide support and a more familiar environment to the patient (Freeman et al, 2018). O'Shannessy et al. (2022) suggest that the inclusion of family members into care planning can assist in developing rapport and reducing the risk of agitation escalation. Furthermore, delivery of care should not be the same for every patient, and treatment plans should cater to the individual in a holistic approach taking into consideration their own shared values and belief systems. Patients may also benefit from chaplains or cultural support workers to provide emotional and social support.

For example, for patients from ethnic backgrounds such as the Maori and Pacific Island communities, it is common for patients to rely on their family for support, while some, prefer to keep their conditions private (Durie, 2001). Identifying the appropriate person to care for the patient, educating family members and including them in the treatment plan is very important, and switching staff may need to be considered, for example changing from male to female staff. If a member of staff does not feel safe or the patient appears to be more agitated with their care, swapping staff or attending to care with another colleague should be considered. Equally, if a health care assistant has been asked to look after the patient presenting with agitation 1-1, safety should be paramount and regular rounding should be performed to ensure their safety. It may be necessary to escalate the 1-1 care to a registered nurse or security officer.

The use of therapy animals can reduce stress and improve mood for neuroscience patients with reduced consciousness

(Hediger et al., 2019). Some healthcare providers may even allow pets to visit provided they meet a certain criterion. This can greatly improve the mood of a patient who has been in hospital for an extended period as well as ease anxieties regarding their pet's wellbeing. Another great resource that may be available to healthcare providers is music therapy which promotes mindfulness, meditation and relaxation. Music therapy can also decrease anxiety, pain, and depression and improve quality of life for patients who experience emotional distress such as that expressed during episodes of agitation (Li et al., 2020).

It is important to document successful de-escalation strategies as well as triggers to identify what works for the individual. This information can then be handed over each shift to ensure all staff members are familiar with the management plan and avoid triggers.

Patient background

Information regarding the patients' background is important to consider. This includes the personality of the individual pre-injury, history of drug or substance abuse, smoking or vaping, a history of domestic abuse either as a victim or the perpetrator as well as any alerts on their file of violence on previous hospital visits (Luauté et al., 2016; Adams et al., 2017).

Assessment

Nurses should assess patients for the risk of agitation using validated tools. One such tool, is the Agitated Behaviour Scale (ABS) which is widely used to evaluate agitation in patients following traumatic brain injury (TBI), identifying concerning behaviour and ensur-

ing effective management (Hellweg & Schuster-Amft, 2016; Mortimer & Berg, 2017). The Confusion Assessment in the Intensive Care Unit (CAM-ICU) tool is used to screen patients for delirium, where chemical or physical restraint use was attributed to a positive score (Teece et al., 2019). The Behavioural Activity Rating Scale (BARS) can also be used to guide early evaluation of agitation and enactment of proactive interventions (Richmond et al., 2012).

Harwood (2017) suggests that agitation may be the patient's way of communicating unmet needs or distress. Therefore, nurses need to conduct thorough assessments to establish reasons for agitation which are often unmet needs so that they can address these to try and mitigate agitation. Examples of common unmet needs for neuroscience patients are summarised in table 2.

Sleep deprivation is common in patients with traumatic brain injuries (Draganich et al., 2019). The hospital environment is noisy and patients are frequently woken for neurological observations but there needs to be a balance between ensuring patient safety and promoting a restful recovery. Patients with TBI and other neurological conditions may have problems with their sleep-wake pattern which may contribute to agitation and violence at night time when fewer staff are available (Luauté et al., 2016). Poulsen et al. (2021) suggest that improved sleep will have a positive effect on post-traumatic amnesia, agitation and cognition. There appears to be a definite correlation between sleep and agitation.

Handover

Nursing staff should be aware of patient triggers so that they are able to respond effectively when patients' exhibit challenging be-

Table 2: Examples of unmet needs

Sleep deprivation – not being addressed	Inadequate nutrition or fluids
Pain that is uncontrolled	Side effects of medications
Nausea and vomiting -uncontrolled	Noisy environment
Constipation that is unmanaged	Wants to smoke or vape
Urinary retention or urgency	Wants a single room vs a shared room
An infection that is not healing	Wants light on /off
Electrolyte imbalances	Wants to get up and walk by self
Metabolic abnormalities	Wounds that are sore or require dressing

haviour (Locke, Bromley, & Federspiel, 2018). Nurses should share any information that can be used to de-escalate aggressive behaviour with colleagues and members of the multidisciplinary team, particularly during handover or clinical huddles. Information such as if the patient is considered to be at risk for aggression should be communicated at clinical handover.

Environment

A tidy, comforting, and safe environment and a patient-centred approach has value for managing violence and aggression (Freeman et al., 2018; Heckemann et al., 2019; Mortimer & Berg, 2017). People experiencing ill-health may exhibit emotions such as anxiety, fear, frustration and anger and these feelings may culminate into aggressive behaviour. On the other hand, hospital environments may also exacerbate these negative feelings due to being overcrowded, noisy, busy, unfamiliar, and overwhelming (Harwood, 2017).

An acute healthcare setting may exacerbate agitation in patients, due to disrupted sleep, unfamiliar environments and shared patient rooms (Harwood, 2017). Healthcare professionals can minimise signs of agitation, stress and frustration in patients by reducing stimulation and promoting rest and adequate sleep (Colley et al., 2018).

It is paramount to ensure that the environment or patient's room is free of objects that the patient may use as weapons to harm themselves or others (Locke et al., 2018). Reducing clutter in a patient shared area is crucial to promote a culture of safety for staff and the patient (Behe et al., 2019). Items such as intravenous pumps, observation machines, stools, chairs, metal cutlery, tooth-brushes and screws may be used as a weapon or for self-harm. It is recommended to utilise plastic or wooden cutlery where the risk of aggression is high. When approaching a patient presenting with agitation, staff should be mindful of their safety and ensure that their escape route is clear in case they need to remove themselves from a potentially difficult situation (Richmond et al., 2012). Further recommendations for clinicians to assist in providing a safe environment for patients and staff can be found in Table 3.

Documentation of any violent incidents should be undertaken, and incident reports should be logged (Locke et al., 2018). This includes verbal, physical or sexual abuse, as well as bullying or threats. This ensures factual documentation of the situation which can be referred back to in the future if needed. All the information required to assess for patients is summarised in checklist 1 (next page).

Table 3: Recommendations for a safe, patient centred, environment (In acute/sub-acute areas)

Provide natural light and access to views of nature	Provide comfortable seats for patients
Provide low stimulus environment	Provide interesting visual and sensory stimuli
Provide open areas for patients to ambulate freely and for family to visit	Allow access to privacy- single room with access to a bathroom
Provide consistent and well-trained staff	Ensure there is adjustable temperature and lighting
Minimise movement in and out of the patient's room at night	Provide adequate signage for bathrooms, open shared areas, etc
Reduce objects in the room that could cause harm to the patient or others	Provide open outdoor area for recreational activities
Implement falls risk strategies (bed to the lowest level, consider removal of medical devices if appropriate, video monitoring)	Reduce stimulation overnight where clinically appropriate, including nursing assessment, medication administration, ambient hallway noise and removal of waste. Cluster activities during day time hours where appropriate
Provide orientation board that includes name, place, time	Promote environmental stimuli such as family pictures or personal possessions
Provide access to a clock to support orientation	Ensure music therapy is adjusted to the patient's preference

Checklist 1 : To be completed to ensure all key aspects of care are included:

Background check:

Does the patient have a history of:
Domestic abuse
Substance or drug abuse
Previous alerts on file regarding agitation

Culture and preferences:

Does the patient have any cultural needs?
Does the patient have any religious needs?
What does the patient like?
What does the patient dislike?
What information is good to know about the patient? (Pets, family, sleeping preferences, previous negative hospital experiences)

Assessment

What unmet needs does the patient have?
Sleep deprivation
Pain
Constipation
Urinary retention or urgency
Nausea or vomiting
Need for Smoking or vaping
Infection
Electrolyte imbalance
Unable to eat or drink or requires different food to that provided
Possible side effects from medications

What environmental considerations should be taken

Is the environment noisy and not therapeutic?
Does the patient need a single or shared room?
Do the lights need to be on or off?
Does the patient show signs of wanting to leave?
Can objects be removed from the room?
Does the cutlery need to be changed from metal to plastic?
Is the person supporting the patient therapeutic?
Is the patient better with a female or male nurse?

Table 4: Some helpful de-escalation phrases are below:

I can't imagine what you are going through, but I would like to understand a little more about it, can you help me to understand?

I can see you have some pain, can I get you something to help?

I can see you are upset, I am here to help, what can I do for you?

I am (name) and I am (role) and I am here to help you

I can understand your frustration and it is a difficult environment for you, let me understand how I can help you.

I am sorry I understand you are upset but when you speak to me like that I feel scared (boundaries). Can you take a seat in your chair or on your bed (options) and then we can talk about how I can help (identifying unmet need and showing empathy).

SECTION 3 - De-escalation, restraint and medication

Recommendations include a multi-disciplinary approach that includes medical officers, nurses, psychiatric team, security staff and members of allied health should be applied in regard to de-escalation, restraint and medication. By fostering a team approach, early collaboration and intervention by the multi-disciplinary team may prevent the agitation from becoming unmanageable. The goal of any intervention within this domain should be aimed at bringing the patient to a less distressed state (Harwood, 2017). Practical strategies that nurses can use include leaving the patient alone for a while (giving them some physical and emotional space), staying calm, re-orientation of the patient to the place and time, introducing themselves, asking what the patient needs, attending to immediate patient needs such as pain relief or removing equipment that is not needed.

Nurses should apply emotional and behavioural self-regulation by responding to challenging behaviour in a calm and considerate way or switching staff to see if this helps. For example, by trying to avoid further confrontation and promoting collaboration (Harwood, 2017). If the situation escalates to a crisis point, security may be required or even the police if a crime has been committed (Haywood, 2017). Nursing staff can use disarming statements to de-escalate as in table 4 (above).

Prevention of agitation and verbal de-escalation tips

Preventative strategies are important to understand and utilise rather than waiting to react to an escalated 'crisis' situation (Chang et al., 2019; de la Fuente, Schoenfish and Wadsworth et al., 2019; Tölli, 2018). This highlights the importance of education and working as a team. If preventative strategies are utilised early and effectively, the need for physical or chemical restraint is greatly reduced allowing the patient to engage in their care. If the patient has already become overly agitated it is important for one member of the team to meet the security staff to brief them on the situation before they enter the room so they know what to do. Verbal de-escalation is a fundamental skill that may prevent the escalation to crisis phase. Table 5 (next page) includes some tips on how to use verbal de-escalation successfully.

Restraint

Most hospitals and health care providers aim to provide a restraint-free service, although when required they aim to prevent adverse events by equipping staff with the training required (Tölli et al., 2017). Restraint has been reported to prolong recovery with the risk of physical or psychological injury to the patient (Department of Health, 2014). Physical restraints should only be used by staff who have received appropriate training and should be as minimal as possible (Harwood, 2017). Refer to local policy.

The use of restraints among hospitalised patients be it pharmacological or physical remains a contentious subject worldwide as these interventions may result in negative

Table 5: Useful tips for verbal de-escalation as developed from Richmond's (2012) ten domains of de-escalation:

Communication	One person should be the main communicator with the patient to build rapport (as much as possible). Verbal communication Introduce self Use calm voice Build rapport quickly Re-orientate if helpful Speak slowly Keep information simple Repeat information if needed Give the patient options – e.g. Would you like to sit in the chair or the bed Non – verbal communication Keeps hands visible Avoid arm folding, arms behind the back or in pockets Stand at an angle to patient so as not to appear confrontational Keep at a distance of 2 arm's length Body language must support verbal communication Raised hands is the international stop sign and can indicate to the patient to stop.
Listen to the patient	Establish what they need or want How do they feel Allow them to vent Use active listening Negotiate
Set boundaries	Explain what is acceptable behaviour Tell the patient how they make you feel when they behave this way.
Introduce others in the room	Identify who needs to be in the room, can some people leave? Explain why the people are in the room and what they are there to do.
Reduce stimulation	Remove objects from room that are not needed Remove people in the room that are not needed Change lighting

psychological effects and physically deleterious healthcare outcomes for patients including nerve damage, cardiac arrest, asphyxiation and ischemic injury (Bachmann, Vatne, & Mundal, 2022; Enns et al., 2014; Hammervold, Norvoll, & Sagvaag, 2021). Nurses should evaluate the need for restraint use, with the benefits and disadvantages and find more ethical strategies of patient care to manage the existing challenging behaviour where possible (Bachmann et al., 2022).

The use of restraints may diminish personhood for patients and has also been associated with causing physiological changes such as increased heart rate, blood pressure, impaired level of consciousness, and distress as well as reducing personal autonomy and impacting one's comfort or freedom (Bachmann

et al., 2021; Kivunja et al., 2018; Salehi et al., 2020).

The five forms of restrictive practices are: chemical restraint, mechanical restraint, environmental restraint, seclusion and physical restraint (Department of Health, 2021). A restraint is any sort of equipment used to prevent and reduce a person's freedom and movement of limbs such as the trunk, feet and arms (Salehi et al., 2020). There are varied forms of restraint, and the least restrictive restraint should be used. Studies have shown that physical restraints such as bed rails in the upright position are most often used, followed by electronic devices such as sensor mats for beds and chairs and then restraints such as wrist and ankle restraints or jackets (Thomann et al., 2020).

Other ways of restraining a patient presenting with agitation are the use of chair trays or the use of tilted chairs to prevent patients from rising out of them, restrictive clothing, splints and gloves (Department of Health, 2021). A pharmacological restraint is where medication is used to manage a person presenting with challenging behaviour. Commonly used medications include antipsychotics, antidepressants, and benzodiazepines. These medications are used to manage anxiety and sleeplessness which will be discussed later (Department of Health, 2021).

Environmental restraint is where a person has restricted access to their environment. For example, being unable to access cutlery, glasses or entertainment and aims to prevent and minimise destructive behaviour (Department of Health, 2021). Restraints should be used as a last resort and only after other forms of de-escalation have been used including direct supervision from nursing staff, carers and family members (Sir Charles Gardiner Osborne Park Health Group (SCGOPHG), 2022). Restraints need to be authorised by a medical practitioner or person in charge of the ward (SCGOPHCG, 2019). The need for restraints may be authorised for a number of reasons, including an agitated patient presenting with confusion and attempting to pull out medical devices such as a nasogastric tube or external ventricular drain, or those at risk of falls or absconding (Enns et al., 2014). Because of their condition, the patient may throw things, intentionally or unintentionally hurt themselves or others. Restraints are put in place to maintain the safety of the patient and others (Salehi et al., 2020).

Hammervold et al. (2021) recommend the implementation of seclusion and restraint reduction programmes where patients and care providers engage in post-incident reviews (PIRs). The PIRs explore events relating to a scenario of restraint use, acknowledge patients' vulnerability, provide advocacy for patients, reduce power imbalance and contribute information that can lead to a reduction in restraint use while supporting efforts that are aimed at providing quality patient care. A cautious approach to restraint use is advised.

Restraints were used minimally in most of the areas represented at the workshop. The restraint most frequently used by all hospitals was the wrist restraints. Regular monitoring of these restraint devices by nursing staff is vital to prevent injury to the patient. Discussion with the next of kin prior to the com-

mencement of restraint use, as well as careful documentation is fundamental. The frequency of observation of these restraints ranged from 30 minutes to 8 hours in the workshop.

Once restraint use is approved, regular monitoring and documenting should be completed using hospital surveillance and assessment tools (Burke, 2022). The restraints must be applied by someone trained in its use and according to the manufacturer's directions although this seemed to vary amongst the group (SCGOPHG, 2019).

Recommendations

Recommendations from the group included the removal of restraints at least two hourly and performing pressure area care and active and passive range of movement. Regular rounding of the patient is fundamental and should occur at least every 30 minutes if 1-1 support is not available. The patient needs to be assessed for pain, toileting comfort, their emotional state, vital signs and nutritional and psychological needs as well as neurovascular observations of colour, warmth, sensation and movement when limb restraints are in use which should be monitored at least 2 hourly (Burke, 2022; SCGOPHG, 2019). The restraint should be removed and checked for pressure damage at this point too and positioning altered to avoid damage.

Restraint use should be ceased as soon as possible. If the restraint is used for invasive lines or attachments such as a cannula, feeding tube, catheter or a surgical drain; the medical team are required to assess the need for continuous treatment so that the restraints can be removed as soon as possible, this includes ongoing daily assessments of the patient's condition (Enns et al., 2014; SCGOPHG, 2019). Removal should also occur when the threat to harm self or others has passed, behaviour has improved and other strategies may be implemented such as direct supervision or diversional activities (SCGOPHG, 2019).

Medication for agitation

Medication can help during de-escalation particularly if the patient is in pain from withdrawing from drugs and alcohol. Harwood (2017) advised that antipsychotics are preferred for cases involving psychosis, mania and delirium; while benzodiazepines are indicated where alcohol withdrawal, dementia and Parkinson's disease are involved. In the workshop, it was discussed that medication is

usually used in a crisis situation and therefore the patient is more likely to become over-sedated, delaying their rehabilitation and recovery. However, some areas found that low-dose atypical antipsychotics when utilised early appear beneficial and the patient was still able to engage in their rehabilitation or daily activities. It is important to note all medications can have side effects. Low-dose atypical antipsychotics may prevent the escalation to crisis point and enable the patient to continue to participate in their recovery whilst reducing the risk of oversedation.

Recommendations

Recommendations of specific medications are beyond the scope of the article but is often determined by the clinician for the individual patient as a number of factors must be taken into consideration. These factors include: the type of injury, age, co-morbidities and the presence of addiction. The balance needs to be made to avoid over or under-sedation and preventing escalation to crisis point of violence and aggression. Table 6 (next page) includes medications used to support mood stabilisation or the management of a crisis situation should the patient escalate.

SECTION 4 - Staff and patient safety measures

The safety of staff and patients when caring for patients presenting with agitation in the neuroscience clinical specialty is paramount. Cognitive impairments caused by a change in intracranial pathology make it difficult for patients to communicate effectively, retain information, assess and mitigate risk and comprehend tasks. In turn, it is imperative that healthcare professionals from the multi-disciplinary team, especially nurses, are knowledgeable regarding modifying care to reduce the risk of further injury and adverse event for this cohort of patients (Oyesanya et al, 2018).

Staff Safety

The longer-term impact of patient agitation, violence and aggression on staff include low morale, absenteeism, reduced productivity and recruitment and retention issues (Richardson et al., 2022). Knowledge, skills and confidence in dealing with agitation develop over time, if there are problems with staff retention, this eventuates in a junior team having to care for these patients with limited knowledge and support.

From a psychological aspect, strategies should be adopted to support the nursing team through mindfulness and managerial support. Debriefing for the nursing staff is important and the most effective method suitable for staff must be determined by their manager. Nurse managers should be conscious of the accumulative impact that reoccurring occupational violence has on staff including the increased risk of burnout, vicarious trauma, carer fatigue and psychological stress (Rees, Wirihana, Eley, Ossieran-Moisson, & Hegney, 2018). Effort should be made to assist staff in reducing these impacts through wellbeing activities which are staff focussed such as mindfulness, pet therapy, re allocation and social events. Although staff mention that their colleagues are more supportive with their debriefing, it is also important after an episode of workplace violence that nurses involved have a discussion with a manager to identify triggers, dynamics and root causes to be prepared for future episodes (Locke, Bromley and Federspiel, 2019). A formal staff debriefing should be held which can take time to organise to ensure the right people are in the room (Harwood, 2017).

Recommendations for hospitals as healthcare organisations have included a violence steering committee, rapid response networks including emergency duress alarms or bells, links to security; as well as clear guidelines around responsibilities for employers and employees regarding agitation (Heckemann et al., 2019; Morphet et al., 2018; Locke, Bromley and Federspiel, 2018). The workshop identified that most hospitals had an emergency number or code system to call for immediate support from security but only one hospital had personal alarms for their staff. This was thought to be because of the expenses associated with installing and maintaining these systems. Some had duress systems in place with an emergency button going straight to security, however these buttons were not always in a convenient position and although security were alerted, they were not aware of the situation that they were entering.

Patient safety

Some patients who present with agitation are placed in a single room to reduce environmental stimulation however this also puts them at a higher risk of falls and isolation. Prevention of falls is one of the biggest factors in ensuring patient safety for a patient presenting with agitation. It relies on a comprehensive multifactorial approach from the

Table 6: Medications used for mood stabilisation or to prevent agitation.

Type of medication	Medications	Comments/ Evidence
Atypical Anti-psychotics	Quetiapine Olanzapine Risperidone	Impact neurotransmitters such as dopamine, serotonin and noradrenaline.
Typical antipsychotics	Haloperidol Chlorpromazine	Two studies identified that haloperidol was not effective in behaviour management post-traumatic brain injury but increased duration of post-traumatic amnesia and length of stay (Rao et al., 1985; Anderson et al., 2016). Should be avoided in the older population due to side effects of dyskinesia.
Benzodiazepines	Lorazepam Diazepam	Benzodiazepines work by enhancing the action of gamma-aminobutyric acid (GABA) which has an inhibiting effect on the central nervous system. These medications can help abort seizures. They are quick to work but can cause over-sedation and respiratory compromise. Chronic use can cause dependence, (Zareifopoulos & Panayiotakopoulos; 2019)
Beta-blockers	Propranolol	Caution with bradycardia and hypotension with higher dosages (Rahmani et al., 2021).
Antiepileptics	Valproic acid, Sodium Valproate and Carbamazepine	For mood stabilisation.
Antidepressants	Sertraline Amitriptyline	For improved mood or cognition or treatment of depression but no studies demonstrated significant reduction in agitation (Rahmani et al., 2021).
Hormone	Melatonin	Regulates the sleep-wake cycle.
Dopamine agonist	Amantadine	A prescription of Amantadine 100 milligrams twice daily has been reported to be effective and safe for use in patients displaying irritability or aggression after a traumatic brain injury in the chronic phase as long as creatinine clearance has been established (Ter Mors, Backx, Spauwen et al., 2019; Neumann et al., 2017). Amantadine may increase the risk of agitation in the critically ill (Williamson et al., 2019).

multidisciplinary team, patient and patient's family. Ensuring comprehensive evidence-based falls risk assessment is attended and preventative strategies relevant to individual health organisations implemented such as; signs, staff and patient/carer education, call bells close to the patient, bed rail assessment, falls rooms, patients placed close to the nurses' station and increased supervision.

Adequate nutrition and hydration can be hindered by agitation as impulsive behaviour limits safe oral intake and can increase the episodes of enteral feeding tubes dislodgement. Adequate intake of calories, protein and fluids/electrolytes is vital to brain recovery post-trauma (Cook, Peppard, & Magnuson, 2008). As patients with an injury to the brain are usually in a hypermetabolic state, any compromised nutritional state can result in malnutrition, immunosuppression, delayed wound healing and organ failure (Hickey & Strayer, 2020). Strategies such as supervision/assistance during mealtimes, providing meals that are culturally appropriate, sitting out of bed for meals, maintaining good sleep/wake cycles and early dietician referrals are crucial. The use of physical restraints could be appropriate on an individual basis to reduce the incidences of enteral feeding tube dislodgement.

Overview of Recommendations for neuroscience nursing clinical practice

Education should be provided for all members of the multi-disciplinary team covering the areas of communication, recognising the signs of agitation, personal safety and understanding the stages of escalation and de-escalation. Education is enhanced by the use of simulation and discussion of case studies to identify strategies to de-escalate difficult situations with a team approach. Legal requirements should be discussed according to hospital policy.

Regarding patient care, building a positive patient-nurse relationship is fundamental, taking time to get to know the patient and their needs including the cultural aspects of care is important. Identifying the appropriate person to care for the patient and switching staff to suit patient needs or culture may need to be considered. The support and involvement of the patients' family members is fundamental to prevent agitation and identifying a key communicator within the family is important. Although existing assessment tools may be useful, it is important to assess and meet the patient's unmet needs and promote a safe, calming environment. One of the key factors is the consideration of quality sleep. It is also important to assess the pa-

tients' background to screen for risk factors for agitation.

Prevention of agitation is fundamental, with the use of effective de-escalation skills to reduce the need for physical or pharmacological restraint. It is important to aim for a restraint free service. However, the use of restraint still has its place to promote patient and staff safety which can be through the use of physical restraints, one-to-one observation or medication use in a crisis situation.

When using a restraint such as a wrist restraint, the patient and family should be informed about the rationale for the use of restraint. The patient should be observed every thirty minutes for any signs of pressure injury and the device should be removed every two hours to monitor for pressure injuries and these cares documented appropriately. Pharmacological restraint should be used in line with evidence-based recommendations and based on individual patient assessment with effort made to prevent drowsiness as this impacts the patient's recovery and may mask acute neurological deterioration. However, the use of a low-dose anti-psychotic agents routinely has been shown to assist in balancing fluctuations in extreme behaviours.

Nursing staff safety is paramount and goes hand in hand with staff retention. The organisation must care for staff by providing robust systems to raise the alarm quickly when staff are in danger. This includes having personal alarms and effective policies to guide staff in how to care for the patient with agitation, as well as having debriefing, mindfulness and staff wellness strongly imbedded in the workplace culture. Patient safety must always be considered as the risk of falls, isolation and malnutrition are more prevalent in the agitated patient. This should be considered when planning individual patient care and implementing risk mitigation strategies.

Conclusion

This paper has identified key areas to focus on in the care of neuroscience patients presenting with agitation. These recommendations will inform and guide neuroscience nursing practice within Australasia and support the standardisation of clinical excellence for patient care. Neuroscience areas should consider the standardisation of educational programs, care plans, systems and guidelines for neuroscience patients presenting with agitation so as to ensure that nurses and clinical allied health staff are supported and guided. By raising awareness and enhancing patient care, the risk of harm for patients and staff as well as averting the escalation from agitation to violence may be reduced.

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