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A Sensory-Based Toolkit For Health Management Of Patients With Aggressive Behaviors In Acute Care

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A SENSORY-BASED TOOLKIT FOR HEALTH MANAGEMENT OF PATIENTS WITH
AGGRESSIVE BEHAVIORS IN ACUTE CARE

by

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APPROVAL PAGE

This scholarly project, submitted by Meghan Janssen in partial fulfillment of the requirements for the Degree of Occupational Therapy Doctorate from the University of North Dakota, has been read by the Faculty Advisory under whom the work has been done and is hereby approved.

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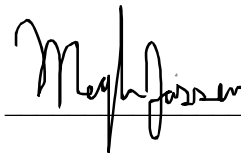Faculty Advisor

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ABSTRACT

Title: A Sensory-Based Toolkit for Health Management of Patients with Aggressive Behaviors in Acute Care

Introduction: Patients who have aggressive behaviors in acute care have limited engagement in health management and social participation (Beattie, Griffiths, Innes, & Morphet, 2018; Harwood, 2017). There is current evidence stating aggression and difficult behaviors can be caused by a dysregulated sensory system, a specific condition or an internal/external stressor (Bowman & Jones, 2016; Harwood, 2017; Scheydt et al., 2017). The purpose of this scholarly project is to promote patient engagement in health management and social participation through the implementation of a sensory-based toolkit that has resources for an assessment and therapeutic interventions to decrease aggressive behaviors.

Methodology: A literature review was conducted through databases CINHAL, Pubmed, and Clinical Key. Search terms related to aggression, patients with aggression, aggression in the hospital, sensory-processing, and sensory-based interventions were used to gather scholarly research. The Ecology of Human Performance (EHP) was used in the development of this scholarly project because of its key characteristics: *person, task, context*; usability across many professions; and its focus on sensory processing and sensorimotor skills (Dunn, 2017). The andragogy learning theory was also utilized in the development of the in-service presentation by utilizing principles of andragogy such as *need to know, experience, and readiness* (El-Amin, 2020). Utilizing these models enhanced the scholarly level and usability of this scholarly project.

Results: A sensory-based toolkit was designed to assist occupational therapy (OT) practitioners

and healthcare providers with an evaluation tool and therapeutic interventions when working with patients who have aggressive behaviors. The toolkit consists of three sections. The first section includes a non-standardized evaluation tool called *Health Management Patient Assessment* which is used to gain more knowledge on the *person*, their *tasks* and *contexts* (Dunn, 2017). The second section provides therapeutic sensory-based interventions that an OT or health care provider can utilize with their patient. The third section includes an in-service presentation that can be used to educate interprofessional teams on the importance of the sensory-based toolkit and how to implement sections one and two.

Conclusion: It is anticipated the sensory-based toolkit will assist OT practitioners and healthcare providers when working with patients who display aggressive behaviors. It is also anticipated after implementation of the sensory-based toolkit, a patient's health management and social participation will increase due to their decreased aggressive behaviors.

Significance: The sensory-based toolkit will increase health management and social participation for patients with aggressive behaviors, thus increasing safety and wellbeing for the patients and healthcare staff.

Chapter I

Introduction

Patient health management and social participation are essential occupations for patients in acute hospital settings; however, these occupations are impaired when patients display aggressive behaviors caused by a variety of reasons (Beattie, Griffiths, Innes, & Morphet, 2018; Harwood, 2017). In the hospital setting, there is a significant concern for the safety of the patient, healthcare providers, and other patients when aggressive behaviors are displayed (Richardson, Grainger, Ardagh, & Morrison, 2018). Patients with aggressive behaviors are often difficult cases for healthcare providers to treat (Muir-Cochrane & Duxbury, 2017). A search of literature revealed a need for decreasing patient aggression in the acute care setting in order to increase patients' health management and social participation (Beattie et al., 2018; Harwood, 2017). Sensory-based interventions were highlighted in the search process as interventions that help a patient regulate their sensory system, therefore helping decrease difficult behaviors (Bowman & Jones, 2016; West, Melvin, McNamara, & Gordon, 2017). The role of occupational therapy (OT) and other health professions can have an impact on the implementation of sensory-based interventions in the acute care setting (Cahill, & Pagano, 2015).

Proposed Product

Although there is evidence in the literature stating sensory-based interventions can be used to decrease difficult behaviors, there is limited research regarding the use of sensory-based interventions in acute care. The purpose of this scholarly project is to increase patients' health management and social participation by decreasing their aggressive behaviors through the use of sensory-based interventions. To accomplish this, a product titled *A Sensory-Based Toolkit for*

Health Management of Patients with Aggressive Behaviors in Acute Care was developed. This product can be found in Appendix A.

One objective of this product was to create a toolkit that includes an assessment and therapeutic sensory-based interventions for healthcare providers to utilize in the hospital with patients. It was also designed for occupational therapy (OT) practitioners or other healthcare providers to implement sensory-based interventions in order to prevent and de-escalate aggression through therapeutic use of tasks and communication. The last objective of the product was to provide an in-service presentation to educate healthcare providers on the toolkit and how to implement it.

Product Development

A review of the current literature was conducted to understand more about patients with aggression, what conditions are associated with aggressive behaviors, why aggressive behaviors may be occurring, how the sensory processing system impacts difficult behaviors, and what is stated in the literature as beneficial sensory interventions. This information was then integrated into the toolkit design.

Dunn's (2017) Ecology of Human Performance (EHP) model was utilized in the development of this scholarly project. This model assisted and guided the organization and various aspects of this product by the use of *person*, *task*, and *context* (Dunn, 2017). The andragogy learning theory was also utilized in the development of this scholarly project as it drove the organization of the in-service presentation component, focusing on a learner-centered approach (McCauley, Hammer, & Hinojosa, 2017).

The first section of *A Sensory-Based Toolkit for Health Management of Patients with Aggressive Behaviors in Acute Care* includes an evaluation tool. The evaluation tool was

designed to gain more knowledge about the patient, triggers they may have, aspects of the hospital that make them feel uncomfortable, and activities they enjoy taking part in. The evaluation tool also helps the OT practitioner or healthcare provider gain insight into what interventions could be helpful to use with the patient.

The second section includes calming sensory-based interventions that were organized by the intervention approaches *prevent, establish/restore*, and *adapt/modify* (Dunn, 2017). The interventions are used to give OT practitioners or healthcare providers ideas of tasks they can do with their patients to de-escalate behaviors or prevent aggressive behaviors from occurring.

The third section includes an in-service presentation that was designed to educate OT practitioners and healthcare providers on the toolkit. The presentation informs the learner about the purpose of the sensory-based toolkit and how to implement it. Furthermore, the presentation was designed to give the learners time to discuss their experiences and try implementing the evaluation tool and interventions with partners.

Chapter Overview

The product titled *A Sensory-Based Toolkit for Health Management of Patients with Aggressive Behaviors in Acute Care* will be a significant contribution to the area of acute care. It will increase a patient's engagement in health management and social participation by decreasing their aggressive behaviors. Therefore, the satisfaction, safety and well-being of the patient and healthcare provider with increase. The following chapters include a literature review in chapter II. Methodology utilized in the development of the scholarly project is described in chapter III. A product description is included in chapter IV. Lastly, a summary that includes limitations and recommendations is in chapter V of this scholarly project.

Chapter II

Literature Review

In the hospital setting, aggression is a common, recurrent behavior that interrupts essential health management strategies for patients and healthcare providers. Because of high rates of hospital violence from patients who become aggressive, Somani, Muntaner, Hillan, Velonis, and Smith (2021) asserted there is a need to implement prevention and de-escalation strategies with patients (Somani et al., 2021). Occupational therapy (OT) has a role in decreasing aggression in hospital settings because of implications on occupational performance associated with health management and social participation. This literature review explores the issue of aggressive behavior, best practice for assessment and intervention, and the role of occupational therapy in supporting health management among acute hospital populations who can become aggressive.

Background

Harwood (2017) explained patients with various diagnoses can display aggressive behaviors due to many reasons. They stated that several common conditions include psychosis, cognitive, neurological, drug, and alcohol disorders. Other reasons can include frustration, anxiety, underlying aggression, and grief. They also stated that it is common for medical staff to not always know the exact reason aggressive behaviors are occurring. It is crucial for medical staff to act quickly to aggressive behaviors as they commonly occur against medical staff and other patients. Patients who exhibit aggressive behaviors compromise their health management due to decreased communication of health needs and aggressive behaviors affecting treatment (Harwood, 2017). Aggressive behaviors also impact social participation and social interactions between health care workers, family and friends (Beattie, Griffiths, Innes, & Morphet, 2018).

Kerr, Oram, Tinson, and Shum, (2017) described aggression as a variety of behaviors that result in harm to people or property. There are two main types of aggression that are seen in the hospital. They include physical aggression and verbal aggression. Physical aggression includes physical threats or assaults such as, physical attacks, pushing, shoving, hitting, kicking, or biting. Verbal aggression includes verbal threats or assaults such as, yelling, screaming, or biting. Aggression is a major concern for hospitals worldwide (Kerr et al., 2017).

Aggression in the Hospital Setting

Prevalence of Aggression

Richardson, Grainger, Ardagh, and Morrison, (2018) described aggression in hospital settings. They stated that aggressive behaviors are commonly towards healthcare staff and other patients in the hospital. Although other patients can be affected by aggressive behaviors, healthcare providers are the most frequently impacted. They expressed verbal abuse and threat along with physical assault and threat are the most common forms of aggression seen in the emergency department. Finally, they stated aggressive behaviors generally are due to underlying cognitive impairments or intoxication coinciding with their acute illness or their disease (Richardson et al., 2018).

Muir-Cochrane and Duxbury (2017) stated aggression as being one of the most difficult behaviors to eliminate in the hospital setting because once it has occurred, it can be difficult to de-escalate. They explained on mental health floors, when de-escalation does not work with a patient who is having aggressive behaviors, restraints are put on the patient or they are secluded. Finally, they stated that restraints can cause more harm to a patients' wellbeing and are not in line with trauma-informed care or recovery-based care (Muir-Cochrane & Duxbury, 2017).

Harwood (2017) described aggression as being a common occurrence in acute care. They also stated that it is important for healthcare staff to understand that there is an underlying cause to a patient's aggressive behavior. Aggressive behavior can be the patient's attempt to communicate something they need but are unable to cope in an appropriate way (Harwood, 2017).

Effects on Occupation

According to *The Occupational Therapy Practice Framework* [OTPF] (AOTA, 2020), health management is an occupation that consists of activities that are related to the wellness of a person and the maintenance of health in order to perform other occupations. They also describe social participation as an occupation that consists of activities related to interacting and engaging with peers, family, friends and members in the community (AOTA, 2020).

When a patient displays aggressive behaviors, it is difficult for them to engage in proper health management because aggression can negatively impact health care for the patient (Harwood, 2017). For example, a patient may have difficulty communicating their needs or health history when they are in an aggressive state, which can make it difficult for healthcare staff to administer proper care. Aggressive behaviors can also impact a person's social participation. When a patient is inflicting aggressive behaviors towards healthcare staff or family and friends when they visit, it can impact their relationships and how they socially engage with one another. Appropriate social participation is important for people in their everyday life. Family, friends, and healthcare workers feel unsafe and not engaged when working with people who are aggressive towards them (Beattie et al., 2018). Aggression is a major concern for the wellbeing of the patient and healthcare staff in hospitals. There are current interventions that healthcare staff utilize when working with patients who have aggressive behaviors in acute care.

Current Interventions

Harwood (2017) described current interventions that are used in acute hospital settings with aggressive behaviors. These interventions typically include giving the patient time and space so the patient can calm their emotional state. Medications are also utilized to help de-escalate a patient's emotions. Some hospitals have a psychiatric team that can help support in certain situations. Lastly, restraints and seclusion should be used as a last resort (Harwood, 2017). Although these interventions have been shown to decrease aggression, they are not necessarily the only interventions that can help. There are certain diagnoses that are seen with aggressive symptoms and behaviors more so than other diagnoses.

<div align="center">

Diagnoses Associated with Aggression

</div>

Traumatic Brain Injury

A traumatic brain injury (TBI) is an injury that affects how the brain functions. This can be caused by collision, jolt, or a puncture to the head (Galgano et al., 2017). TBIs can occur from car accidents, falls, gunshot wounds, domestic violence, and recreational activities (Galgano et al., 2017). About 1.5 million people in America sustain a traumatic brain injury each year (Thurman et al., 2016). Of the 1.5 million people, about 230,000 of those people who sustained a TBI are then treated in the hospital and live (Thurman et al., 2016). Currently, 5.3 million people in the United states are living with a disability due to sustaining a traumatic brain injury (Thurman et al., 2016). Once a person sustains a TBI, changes in energy and chemicals levels in the brain occur in order to compensate for the injury (Galgano et al., 2017). Long term effects can persist after sustaining a TBI. These can include sensorimotor deficits, cognitive impairments, aggression and anxiety (Johnstone et al., 2015). TBIs can cause changes in

emotions and mood as well as behavioral changes such as difficulty controlling behaviors, impulsivity, personality, and aggression. (Abdelmalik, Draghic, & Ling, 2019).

Neurological Disorders

Strokes and brain tumors are two neurological disorders that have been shown to cause aggressive behaviors. Pappadis et al. (2019) stated people who have a stroke may experience behavior changes because of the mood dysregulation caused by brain damage. Aggression is included as one of the moods can occur for some people after a stroke (Pappadis et al., 2019).

Lupton, Abu-Suwa, and Golden (2020) described brain tumors as the product of abnormal cells growing in the brain. There are many different types of brain tumors. It has been shown that brain tumors can cause personality changes. One personality change that is commonly seen in people who have brain tumors is aggression. Some treatments for brain tumors can in fact cause aggression to become worse (Lupton et al., 2020).

Chronic Pain

Margari et al. (2014) stated chronic pain is when pain lasts longer than the usual recovery period. Aggression is commonly seen with chronic pain clients because there is a reaction to having muscle reactivity in the area where there is pain, increase in tissue, and changes in the endogenous opioid system. It has been shown that aggressive symptoms with chronic pain can increase the chance of suicide, which is a serious concern (Margari et al., 2014).

Cognitive Impairment

Wolf, Goldberg, and Feedman (2018) stated that people with dementia can display aggressive behaviors, especially when the occupational demands associated with the hospital setting are too difficult for the patient to comprehend. Inability for the healthcare workers to manage the aggression can compromise the quality of care a patient with dementia is able to

receive because the healthcare worker is spending more time managing the aggression rather than giving proper care, which can also cause the disease to progress quicker (Wolf et al., 2018).

According to Dening and Aldridge (2021), delirium is when a person experiences a sudden decrease in mental functioning due to an acute injury or illness. Delirium can also occur after drug intoxication. A person with delirium can show symptoms of decreased attention, change in memory, and decreased orientation. They can also show signs of hallucinations (Dening & Aldridge, 2021). Patients with delirium are 11 times more likely to be aggressive than other clients in the hospital (Williamson et al., 2014).

Withdrawal/Mental Health

Overdosing on a drug can cause a person to have aggressive behaviors (Pol, Carter, & Bouchoucha, 2019). Many codes called in hospitals are due to aggression or violent behavior displayed by patients with drug overdoses (Pol et al., 2019). Mental health conditions are commonly seen with aggression as a behavioral symptom (Muir-Cochrane & Duxbury, 2017). Aggression is a major concern in mental health care settings, due to the prevalence of it (Muir-Cochrane & Duxbury, 2017).

<center>**Evaluations for Aggression**</center>

In order to have a better understanding if patients will have aggressive behaviors during their stay at the hospital, there are various assessments that can help in guiding healthcare providers to prepare for it.

The Modified Overt Aggression Scale

According to Coccaro (2020), the Modified Overt Aggression Scale (OAS-M) is used to assess a person's aggression and how frequent it happens along with how severe the aggression is. The assessment is made up of four categories which include verbal aggression, aggression

against objects, and aggression against others and self. It is conducted through an interview. This assessment was shown to have inter-rater reliability, internal constancy, and validity (Coccaro, 2020).

Staring, Tone and Volume of Voice, Anxiety, Mumbling, and Pacing (STAMP)

Calow, Lewis, Showen, and Hall (2016) described the Staring, Tone and Volume of Voice, Anxiety, Mumbling, and Pacing (STAMP) as a screening tool used to anticipate if a patient will become violent. They stated the purpose of the screening tool is to ultimately protect staff working with the patient, the patient and other patients who are in the hospital as well. The STAMP assessment can be effective in identifying if a patient will be aggressive early on. The STAMP asks questions regarding if the person is staring, what their tone of voice is, are they anxious, mumbling or pacing when entering the emergency room. More research needs to be done for validity and reliability of this assessment (Calow et al., 2016).

Broset Violence Checklist

The Broset Violence Checklist (BVC) is a risk assessment tool used to predict if a patient could display violent behavior within a 24-hour period (Sarver, Radziewicz, Coyne, Colon, & Mantz, 2019). The assessment has six items to check off including confusion, irritability, boisterousness, verbal threats, physical threats, and attacks (Sarver et al., 2019). If the healthcare provider checks off two or more of these items, then the patient may exhibit aggressive behaviors (Sarver et al., 2019). The BVC has not been researched to know the validity and reliability of the assessment (Calow et al., 2016).

Brief Rating of Aggression by Children and Adolescents (BRACHA)

According to Barzman, Mossman, Sonnier, and Sorter (2012), the Brief Rating of Aggression by Children and Adolescents (BRACHA) is an assessment tool with 14 items that are

scored by emergency room staff members. It is used to determine if children or adolescents coming into the emergency room are at a low or high risk for aggression. The 14 items ask a variety of questions. This assessment has been shown to have high reliability and helps prepare healthcare works for patients who may have aggressive behaviors (Barzman et al., 2012).

These evaluations help in preventing and providing healthcare workers the tools needed to help de-escalate or reduce aggressive behaviors (Calow et al., 2016).

Interventions for Aggression

There are specific interventions that have been shown to help prevent and manage aggressive behaviors. There are two common themed interventions, these include sensory-based interventions and cognitive behavioral therapy interventions.

Sensory-Based Interventions

Many aggressive behaviors associated with the some of the conditions already described, emerge because of sensory processing challenges associated with brain and chemistry anomalies (Yunus et al., 2015). Sensory dysregulation can also occur due to the various stressors that occur in the hospital (Bowman & Jones, 2016). There are sensory-based interventions that can help manage behaviors such as aggression, such as sensorimotor activities, sensory modalities, sensory diets and environmental modifications (Bowman & Jones, 2016; Yunus et al., 2015).

West, Melvin, McNamara, and Gordon (2017) shared sensorimotor activities and sensory modalities that have been shown to decrease difficult behaviors include yoga, physical exercise, taking a hot shower, art, crafts, mindfulness activities, journaling, weighted blanket or vest, listening to music or relaxing sounds, brushing, aromatherapy, and tactile activities. Their study conducted with 112 clients displayed that there was a reduction in distress and aggression after use of sensory tools such as the ones just mentioned (West et al., 2017).

Bowman and Jones (2016) also found that sensory modalities such as music, bubbles, weighted blanket, stress balls, soft toys, bean bags, and aromatic oils were able to calm patients who were in a distressed state. They also found that environmental changes such as lighting can help calm patients who are aggressive or agitated. These tools can be beneficial for people who are stressed, overwhelmed or in an aggressive state (Bowman & Jones, 2016).

According to Mori, Champagne, and May-Benson (2017), the use of a sensory diet can also be beneficial in reducing difficult behaviors. A sensory diet is a routine that is specifically made for a client that includes various sensory strategies and different objects such as weighted blankets or vests, aromatherapy, sensory kits that can have music, and fidgets (Mori et al., 2017).

Rosenthal et al. (2021) stated that environmental modifications also reduce difficult behaviors by modifying the space the person is in such as changing the lighting, noise, and the position furniture is in. Modifying the environment by eliminating certain environmental stimulants to fit the needs of the patient can help reduce their aggression. These various sensory-based interventions can be used alone or together to help decrease difficult behaviors and help the patient improve their functioning in health management, social participation and daily activities (Rosenthal et al., 2021).

Sensory-based interventions can be an impactful strategy in preventing or managing aggressive behaviors. When aggression can be managed with sensory-based interventions, the patient is able to participate in their health management by enabling healthcare providers to help with necessary medical care. The patient also increases their social participation by being able to converse in conversations and act in ways that people will want to interact with them.

Cognitive Behavioral Therapy

Iruthayarajah et al. (2018) described cognitive behavioral therapy (CBT) as a type of psychotherapy that helps people recognize their negative thoughts through gaining self-awareness. When dealing with aggression, CBT can be used to help people manage their anger by coming up with other positive substitutions for the aggressive behavior. CBT techniques that can be utilized when working with aggressive behaviors include self-imagery, thinking of things that make a person happy, and breathing techniques. CBT techniques used to prevent aggression include relaxation techniques such as relaxed breathing, cognitive restructuring activities, alternative ways of thinking and conflict resolution. CBT programs are used to help people identify their self-awareness and identify and manage aggressive behaviors. This intervention has been useful in helping reduce aggression in people who have sustained a TBI (Iruthayarajah et al., 2018).

Interventions such as sensory integration, environmental modifications, and cognitive behavior therapy can be used with clients to reduce aggressive behaviors in various diagnoses. Occupational therapists can help play a role in evaluating and providing these interventions to patients who display aggressive behaviors (Cahill & Pagano, 2015).

Role of Occupational Therapy

People who are admitted to the hospital for a health reason may also be experiencing negative behaviors such as aggression, which interrupts their ability to engage in essential health management strategies. Because of the inherent connection to the occupation of health management and social participation, occupational therapists (OT) can offer a unique role when working with difficult behaviors such as aggression (Cahill & Pagano, 2015). An OT can contribute through evaluation and intervention planning that can address difficult behaviors and

increase well-being through increasing engagement in meaningful occupations, especially health management (Cahill & Pagano, 2015). OTs can also work interprofessional to create a client-centered intervention that could include establishing habits and routines, using tools for self-regulation and relaxation, and developing coping strategies to help decrease aggressive behaviors (Cahill, & Pagano, 2015). Finally, OT practitioners have specific skill sets related to sensory modulation that can prevent or de-escalate aggressive behaviors in the acute hospital setting.

Model

Ecology of Human Performance

Dunn's (2017) Ecology of Human Performance model (EHP) is an ideal framework to guide this scholarly project because it includes interprofessional terminology and has an emphasis on sensorimotor factors. EHP focuses on the *person*, *context*, and *task* and how they relate to one another. This model defines function by the performance range of a person. The bigger the performance range is for a person, the more tasks they can do, the smaller the performance range, the less tasks they can do. The more limited a person is in their abilities, the less tasks they may be able to do. EHP also has evaluation components which includes five different intervention approaches. They include *establish/restore*, *alter*, *adapt/modify*, *prevent*, and *create*. The intervention is typically done in a collaborative way with the patient, family, and therapist (Dunn, 2017).

Person

According to Dunn (2017), a person in the EHP model is unique and has unique experiences. The person also has their own interests and values based on their own life. They also carry their own cognitive, psychosocial and sensorimotor skills (Dunn, 2017). Healthcare

providers all have their unique past and current experiences when working with patients and patients with aggressive behaviors.

Task

Based on Dunn's (2017) EHP model, tasks are behaviors that can be observed and help a person do what they need to do. Tasks include anything that is important for the person to do for their health and well-being (Dunn, 2017). Healthcare providers want their patients to successfully complete their everyday tasks to become more independent. When a patient is aggressive, it can impact their tasks such as health management and social participation (Beattie et al., 2018; Harwood, 2017)

Context

According to Dunn (2017), context can be whatever is surrounding the person. There are different types of contexts, these include the temporal, physical, social, and cultural (Dunn, 2017). Some examples of context in the hospital include the hospital room, hallways, medical equipment and ages of the people working there. In the acute hospital setting, the context is busy with many people and a lot of equipment and other healthcare materials.

Summary

Patients who have aggressive behaviors in hospital settings can harm themselves, healthcare workers, and others (Richardson et al., 2018). There are various diagnoses and conditions that display aggressive behaviors (Harwood, 2017). It is important to evaluate patients who could potentially display aggressive behaviors to help prevent aggression or help prepare healthcare staff (Calow et al., 2016). Interventions such as sensory-based activities, environmental modifications and cognitive behavioral therapy have been shown to help reduce aggressive behaviors (Bowman & Jones, 2016; Iruthayarajah et al., 2018; Rosenthal et al., 2021).

Occupational therapists can play a role in evaluating and using interventions to help patients reduce their aggressive behaviors in the hospital setting in order to help patients maintain their health management and social participation (Cahill & Pagano, 2015). The following chapter describes the process used in the development of the literature review and product.

Chapter III

Methodology

Occupational therapists work with patients in the acute care setting, some of which have decreased engagement in health management and social participation due to increased aggressive behaviors (Beattie, Griffiths, Innes, & Morphet, 2018; Harwood, 2017). Patients with aggressive behaviors can be difficult to care for in the hospital (Muir-Cochrane & Duxbury, 2017). There is current research regarding the use of sensory-based interventions in decreasing difficult behaviors such as aggression (Bowman & Jones, 2016; Yunus, Liu, Bissett, & Penkala, 2015). Although the research states this, there is limited research on sensory-based interventions being implemented with patients who have aggressive behaviors in acute care.

The purpose of this scholarly project is to promote patient engagement in health management and social participation for those with aggressive behaviors. To accomplish this, the author of this scholarly project developed a sensory-based toolkit that includes a behavioral assessment, sensory-based therapeutic activities as interventions, and an in-service presentation for healthcare providers. The purpose of this chapter is to describe the methods used for the development of the literature review and the product: *A Sensory-Based Toolkit for Health Management of Patients with Aggressive Behaviors in Acute Care.*

Timeline

This scholarly project began with fabricating an idea in semester five of the occupational therapy doctoral program. Then a literature review was conducted in the beginning of semester eight. Following the literature review, the theoretical framework was chosen to guide the development of the scholarly project. Finally, the product was developed throughout semester eight.

Procedures

A literature review was conducted to obtain information relevant to this topic. The databases CINAHL, PubMed, and Clinical Key were used to find scholarly research. Search terms that were used when browsing the databases included "patients and aggression", "aggression", "hospital", "sensory-based intervention", "sensory-based interventions and aggression", "hospital and aggression". There were a variety of scholarly articles that were used in the literature review including *The American Journal of Occupational Therapy*, *Journal of American Psychiatric Nurses Association*, *International Journal of Mental Health Nursing*, *Australian Occupational Therapy Journal*, and others.

The inclusion criteria included journal articles from 2015 to present due to the important, relevant, and current information included in the articles. Articles that were included but were published earlier than 2015, were included due to their importance in the field or topic. Exclusion criteria included articles that were not in English and articles that were about non-relevant topics to this project such as sensory interventions for children with sensory needs.

The authors of the literature expressed the prevalence of patients with aggressive behaviors causes concern for decreased health management and social participation (Beattie et al., 2018; Harwood, 2017). Authors of the literature also highlighted that aggressive behaviors in the hospital can be the result of a certain condition, internal or external factors, or sensory dysregulation (Bowman & Jones, 2016; Harwood, 2017). Although this is the case, sensory-based interventions can have a positive impact on patients with aggressive behaviors (Bowman & Jones, 2017; West, Melvin, McNamara, & Gordon, 2017). However, there is limited evidence supporting the implementation of sensory-based interventions in acute hospitals with patients who exhibit aggressive behaviors. Through the literature review it was also discovered that

occupational therapists (OT) have a role in hospitals to effectively evaluate and develop

evidence-based interventions to address patients with aggressive behaviors who are impacting

their health management and social participation (Cahill & Pagano, 2015).

The author of this scholarly project used the information gained from the literature to

develop the sensory-based toolkit, which is organized into three sections: the evaluation tool,

sensory interventions, and an in-service presentation.

The first section of the product includes a non-standardized evaluation tool titled *Health*

Management Patient Assessment, which consists of questions developed from the literature on

aggression and what aggressive behaviors look like. For example, Table 1 displays how evidence

from the literature review was used in the development of questions in the assessment.

Table 1 *Example*

Key Evidence	How it was Applied to Assessment
"Agitation and aggression can be impacted both positively and negatively by environmental issues. These include the amount of stimulation, light and noise levels, space and privacy issues, and interventions with staff members, other patients, and family/friends (Rosenthal, Mortimer, & Woods, 2021)."	Do any of these contexts make you feel uncomfortable?
"Bowman and Jones (2016) found that sensory modalities such as music, bubbles, weighted blanket, stress balls, soft toys, bean bags, and aromatic oils were able to calm patients who were in a distressed state (Bowman & Jones, 2016)."	What things help you feel better/more relaxed? For example, sensory ball, playing with putty/playdoh, coloring, etc.

Note. The above table displays how evidence was incorporated in the development of questions on the assessment.

The second section of the product was created with evidence-based sensory interventions

found in the literature to help decrease difficult behaviors. For example, Table 2 displays how

evidence from the literature drove the ideas for interventions.

Table 2 *Example*

Key Evidence	How it was Applied to Interventions
"West, Melvin, McNamara, and Gordon (2017) shared sensorimotor activities and sensory modalities that have been shown to decrease difficult behaviors include yoga, physical exercise, taking a hot shower, art, crafts, mindfulness activities, journaling, weighted blanket or vest, listening to music or relaxing sounds, brushing, aromatherapy, and tactile activities (West, Melvin, McNamara, and Gordon, 2017)."	Physical exercise, coloring, music, relaxing sounds, tactile texture play, aromatherapy
"When there is a therapeutic relationship with therapeutic communication, the patient will most likely engage in the interventions with success. There are various techniques to take when using therapeutic communication such as non-verbal therapeutic communication and verbal therapeutic communication (Zivanovic & Ciric, 2017)."	Therapeutic communication

Note. The above table displays how evidence was incorporated into the development of interventions.

The third and final section includes an in-service presentation that was developed to share research and literature with other OT practitioners and health care providers to enhance their knowledge of aggression. It is also used to educate interprofessional staff on the sensory-based toolkit and how to implement it with patients who have aggressive behaviors.

Theoretical Framework

Dunn's (2017) Ecology of Human Performance (EHP) model and Andragogy Learning Theory

Dunn's (2017) Ecology of Human Performance (EHP) model was used as a theoretical guide in the development of this product. The EHP model was used because it focuses on the *person*, *task* and *context.* It also focuses on sensory processing and sensorimotor skills. EHP

supports interprofessional collaboration by using terms that any other professional can understand (Dunn, 2017).

Dunn's (2017) EHP model was integrated into the first section of the toolkit which includes the evaluation tool title Health *Management Patient Assessment*. This assessment was developed with EHP in mind as it helps the OT practitioner or healthcare provider have a greater understanding of the patient's background (*person*), activities they find meaningful (*tasks*), and the surroundings that impact them (*context*). The second section of the product also addresses EHP as it focuses on three different intervention approaches including *prevent, establish/restore*, and *adapt/modify*. Section two also breaks down the *adapt/modify* interventions into *person, task*, and *context*; therefore, being more client-centered (Dunn, 2017).

Andragogy

The andragogy learning theory was also a guide in developing the product. McCauley, Hammer, and Hinojosa, (2017) stated, adults, learn best when taught through a learner-centered approach as compared to a teacher-centered approach. The andragogy learning theory guides learners to use past experiences to enhance the current learning experience and increase connections from the content to the work environment (McCauley et al., 2017). Andragogy also targets problems associated with adult roles. In this case, aggression that interferes with occupational performance is the problem that occupational therapy practitioners seek to resolve. Andragogy was displayed through the principles of *need to know, experience*, and *readiness* (El-Amin, 2020).

The third section highlights the use of andragogy learning theory as it consists of an in-service presentation for OT practitioners or other healthcare staff. When developing the in-service, time for discussion was intentionally built-in so the learners could express their

experiences and share their stories. There is also time to practice interventions on partners to engage the learner in the experience. The use of both conceptual frameworks assured that this toolkit was an evidence-based, model-driven product.

Ethical Considerations

In the development of this scholarly project, there were ethical considerations taken. Literature and other resources were used following formatting and guidelines for ethical work. Written permission was given for names and items used in the product which are located in Appendix C and Appendix D.

Summary

Based on the information gained from the literature and the guidance of EHP and andragogy learning theory, the sensory-based toolkit was developed. The following chapter gives an overview and description of the product.

Chapter IV

Product

Problem/Need

Aggression in acute care is a concern for healthcare providers (Harwood, 2017). Patients with aggressive behaviors in acute hospital settings have impaired engagement in health management as well as limited social participation (Beattie, Griffiths, Innes, & Morphet, 2019; Harwood, 2017). There is a lack of knowledge and use of non-pharmacological interventions by healthcare providers to reduce these aggressive behaviors (Bruijn, 2020; Muir-Cochrane & Duxbury, 2017). Many aggressive behaviors are caused from a condition, internal or external stressor, or sensory dysregulation (Bowman & Jones, 2017; Harwood, 2017; Scheydt et al., 2017). There is current research regarding the benefits of sensory-based interventions for patients with aggressive behaviors, but there is limited research on the use of sensory-based interventions in the acute hospital setting. Thus, there is a need for a sensory-based toolkit for hospital providers to enhance health management of patients.

Purpose/Objectives

The purpose of *A Sensory-Based Toolkit for Health Management of Patients with Aggressive Behaviors in Acute Care* for this scholarly project is to promote patient engagement in health management and social participation through the implementation of a sensory-based toolkit. The objective of this product was to create a sensory-based toolkit that includes sensory-based therapeutic activities as interventions to decrease aggressive behaviors. The sensory-based toolkit was also developed to be implemented with patients to prevent and de-escalate aggression through therapeutic interventions and communication.

Theoretical Framework

The theory utilized to guide the development of this product was Dunn's (2017) Ecology of Human Performance (EHP). Dunn's (2017) EHP model focuses on the function of the *person* through their *performance range* and the relationship between the *person, context* and *task*. EHP guides the therapist through evaluation and intervention planning. EHP also supports interprofessional collaboration due to the fact that the terms used in the EHP model are interprofessional and can be understood by any healthcare provider. This is important due to there being many healthcare providers working with one client in the inpatient setting. EHP also focuses on the person and their sensorimotor skills, which supports the development of a sensory-based kit (Dunn, 2017).

Andragogy learning theory was also utilized in the development of this product for its learner-centered approach. The learner centered approach helps adults engage and relate to what is being presented, making it an impactful experience (McCauley, Hammer, & Hinojosa, 2017). Andragogy was also utilized for three of its six principles which include *experience*, *need to know*, and *readiness* (El-Amin, 2020).

Development of Sensory Toolkit

The sensory-based toolkit consists of three sections, the assessment, the sensory-based interventions, and the in-service presentation. The assessment was created to gain a better understanding of the patient (*person*), identify triggers of aggression (*context*), reveal meaningful activities (*task*), all of which effect engagement in health management and social participation while in the hospital (Dunn, 2017). The intervention portion was designed to offer sensory-based and therapeutic communication interventions (*tasks*) and contextual modifications that align with the patient (*person*) factors. The sensory-based interventions were organized by the EHP

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intervention approaches of *establish/restore, adapt/modify, and prevent* (Dunn, 2017). Lastly, the in-service presentation was designed to educate other healthcare providers on the purpose of the sensory-based toolkit and how to implement it. The presentation was designed to pull from the learner's experiences, share why the toolkit is necessary, and give time to practice the sections of the toolkit (El-Amin, 2020).

How the Product Should be Used

This product is intended for acute care occupational therapists or other healthcare providers to use with patients who are experiencing aggressive behaviors towards self, others, or towards the healthcare provider. The healthcare provider utilizing this toolkit will be able to distinguish the use of EHP to guide this product. The assessment should be used first with subsequent development of goals for health management and social participation while in the hospital, followed by short term goals for prevention of triggers, establishment of calming environments, and demonstration of calming skills by the patient or providers as indicated.

After the assessment is performed and the healthcare provider should select sensory-based interventions to implement with the patient based on the results gathered from the assessment. The interventions should be implemented with the patient the day of the assessment or at follow-up sessions. The interprofessional team should be aware of the interventions that are being implemented with the patient in order to keep the team informed and also for the team to continue to educate the patient on the importance of engaging in the sensory-based interventions. With implementation of the sensory-based toolkit, there should be a decrease in the patient's aggressive behaviors. If there is a decrease in aggressive behaviors, interventions should continue to be implemented. If there is not a decrease in aggressive behaviors, appropriate changes should be made. It is the author's hope that through the implementation of sensory-

based interventions, the patient will experience decreased aggressive behaviors and increased engagement in their health management and social participation.

Summary

A Sensory-Based Toolkit for Health Management for Patients in Acute Care was created due to decreased engagement in health management and social participation for patients with aggressive behaviors. Sensory-based interventions are an effective way to decrease aggressive behaviors, so the sensory-based toolkit was developed to include a variety of sensory-based interventions for OTs and healthcare workers to use with patients. The following chapter gives a summary of this scholarly project and the limitations and recommendations moving forward.

Chapter V

Summary

Patients who display aggressive behaviors in acute care unfortunately have difficulty engaging in their health management and social participation (Beattie, Griffiths, Innes, & Morphet, 2018; Harwood, 2017). Patients with aggressive behaviors impact not only themselves but the healthcare professionals working with others (Richardson et al., 2018). Frequently, patients who exhibit aggressive behaviors have an underlying condition, various stressors or a dysregulated sensory (Bowman & Jones, 2016; Harwood, 2017). Aggression can be a difficult behavior for healthcare provides to treat, but there's evidence that sensory-based interventions can help with regulating difficult behaviors (Bowman & Jones, 2016; West, Melvin, McNamara, & Gordon, 2017). Although there is evidence on this topic, there is limited research and evidence on implementing sensory-based interventions in the acute care health system.

Discussion

The purpose of this scholarly project was to increase engagement in health management and social participation for patients with aggressive behaviors by decreasing their aggressive behaviors through the implementation of a sensory-based toolkit with resources for an assessment and therapeutic sensory-based interventions. The product, *A Sensory-Based Toolkit for Health Management of Patients with Aggressive Behaviors in Acute Care* is intended to be used with occupational therapy (OT) practitioners or other healthcare providers to use with patients who are presenting with aggressive behaviors. The first section of the product is the evaluation tool titled *Health Management Patient Assessment*. The assessment is a non-standardized assessment that gives the OT practitioner or healthcare provider a better understanding of the patient. The second section includes sensory-based interventions to use with

the patient. The interventions are intended to help calm or de-escalate the patient in a therapeutic way. The third section includes an in-service presentation that was designed to share information regarding aggression in acute care and how to implement the behavioral assessment and sensory-based interventions.

Models

Dunn's (2017) Ecology of Human Performance (EHP) was utilized in the development of the product. EHP focuses on the function of the *person* through their *performance range* and the relationship between the *person, context* and *task*. EHP guides the therapist through evaluation and intervention planning. EHP also supports interprofessional collaboration by utilizing terms that an interprofessional team can understand. EHP also emphasizes sensorimotor skills which was important when developing a sensory-based kit (Dunn, 2017).

The Andragogy Learning theory was also used in the development of the product. McCauley, Hammer, and Hinojosa (2017) expressed in their article that the andragogy learning theory asserts that adults learn best when taught learner-centered as compared to teacher-centered. The andragogy learning theory focuses on pulling from the student's past experiences to enhance the learning experience and increase connections from the content to the work environment (El-Amin, 2020; McCauley, Hammer, & Hinojosa, 2017).

Limitations

There are limitations to *A Sensory-Based Toolkit for Health Management of Patients with Aggressive Behaviors in Acute Care.* The first limitation is that there is limited budget for purchasing supplies for activities in the acute care setting, however once the product is implemented, billing is possible depending on the facility because it is a skilled OT service. There is also limited reusability with supplies due to sanitary restrictions in hospitals. Lastly

there is limited evidence to support sensory-based interventions being implemented in acute care; therefore, more research should be done on this topic.

Future Recommendations

The author recommends that the sensory-based toolkit be implemented in acute care settings. It is also recommended that there is a pre and post-test given to patients before and after implementation of the sensory-based toolkit to measure the effects of the product. The implementation of a survey or interview to staff is also recommended to assess healthcare staff's perception of the sensory-based toolkit. Lastly, it is recommended that this product be presented to the national or state conference in order to share this information to a wider audience.

Implications

The author anticipates that this product will be used with OT practitioners and other healthcare providers in acute care. It is also anticipated that the product with assist in the evaluation and intervention components of treatment. Furthermore, it is anticipated that the patient's engagement in health management and social participation will increase after sensory-based interventions are implemented to decrease aggressive behaviors.

Conclusion

In conclusion, there is evidence stating that aggressive behaviors in the hospital have an impact of patient's health management and social participation (Beattie et al., 2018; Harwood, 2017). There is evidence to support sensory-based interventions having an impact on aggressive behaviors (Bowman & Jones, 2016). However, there is limited evidence of current implementation of sensory-based interventions in the acute care setting. Thus, a sensory-based toolkit was developed for acute care to be a resource for OTs and healthcare providers to use with patients who have aggressive behaviors. Overall, it is concluded that with the

implementation of sensory-based interventions with patients who have aggressive behaviors, engagement in health management and social participation will increase and aggressive behaviors will decrease.

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A Sensory-Based Toolkit for Health Management of Patients with Aggressive Behaviors in Acute Care

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Table of Contents

Introduction

Patients with aggressive behaviors in the acute hospital setting have impaired engagement in their health management and social participation (Beattie, Griffiths, Innes, & Morphet, 2018; Harwood, 2017). Treating patients with aggression in the acute setting can be difficult for healthcare providers (Muir-Cochrane & Duxbury, 2017). There is a lack of knowledge and use of non-pharmacological interventions by healthcare providers to reduce aggressive behaviors (Bruijn, 2020). Many aggressive behaviors are caused from sensory overload that patients experience from the stimulation of the hospital environment (Scheydt et al., 2017). Another reason aggressive behavior can occur is due to various conditions, stressors and frustrations that the patient may have (Harwood, 2017). There is current research regarding the benefits of sensory-based interventions for patients with aggressive behaviors, but there is limited research on the use of sensory-based interventions in the acute hospital setting. Thus, there is a need for a sensory-based toolkit for hospital providers to enhance health management of patients.

The purpose of the sensory-based toolkit is to increase patient engagement in health management and social participation by decreasing aggressive behaviors. The sensory-based toolkit includes an assessment, sensory-based therapeutic activities as interventions to decrease aggressive behaviors and an in-service presentation for healthcare providers to learn how to use the assessment, and how to implement the sensory-based therapeutic activities as interventions with their patients.

Aggression and Health Management

Kerr, Oram, Tinson, and Shum (2017) described aggression as a variety of behaviors that result in harm to people or property. There are two main types of aggression that are seen in the hospital. They include physical aggression and verbal aggression. Physical aggression can include physical threats or assault, physical attacks, pushing, shoving, hitting, kicking, or biting. Verbal aggression can include verbal threats or assaults, yelling, screaming, or biting. Aggression is a major concern for hospitals (Kerr et al., 2017).

Richardson, Grainger, Ardagh, and Morrison (2018) described aggression in hospital settings. They stated that people coming into the hospital with a physical injury or a worsening diagnosis can display aggression towards themselves or other medical staff (Richardson et al., 2018).

There are many causes of aggressive behaviors among hospital patients, most of which are related to medical conditions, stress, frustration or sensory dysregulation (Bowman & Jones, 2016; Harwood, 2017). Medical conditions such as traumatic brain injury (TBI), delirium, dementia, stroke, and psychological diagnoses are all medical conditions that have been associated with aggressive behaviors (Abdelmalik, Draghic, & Ling, 2019; Dening & Aldridge, 2021; Muir-Cochrane & Duxbury, 2017; Pappadis et al., 2019; Wolf, Goldberg, & Feedman, 2018).

Based on Dunn's Model of Sensory Processing, patients with a low neurological threshold require minimal stimulation for their neurons to fire and the patient to react (Brown, Tollefson, Dunn, Cromwell, & Filion, 2000). A patient with a high neurological threshold needs high stimulation as it takes them longer to react to stimuli (Brown et al., 2000). It has been shown that sensory processing difficulties are associated with difficult behaviors (Bowman & Jones, 2016; Boogert et al., 2021). This shows that sensory interventions can help in reducing patient's aggressive behaviors by increasing or decreasing their sensory stimuli.

In the hospital, patient's senses can be overwhelmed of underwhelmed based on their needs. The context in which they are in, can be filled with excessive loud noises, absence of noise, people coming in and out of the room, bright lights, and changes in temperature. The patient may experience occupational deprivation during a hospital stay due to limited engagement in meaningful activities (e.g. leisure), which contributes to an lack of sensory stimulation that can result in aggression. All these aspects can have an impact on a patient with aggressive behaviors. A patient with a low threshold to sensory stimuli, will want to avoid stimuli at all costs and a patient with high sensory stimuli might not even notice stimuli that is presented to them (Brown et al., 2000).

The following pages of the sensory-based toolkit will give the occupational therapy (OT) practitioner or other healthcare providers the tools needed to assess and implement sensory-based interventions with patients who have aggressive behaviors.

Precautions

When working with clients who have aggression, there are precautions that are important to take. Taylor (2008) is credited with creation of the intentional relationship model. Within that model is an interpersonal reasoning process for managing inevitable interpersonal events, some of which include aggression or emotional situation. Below are precautions adapted from Taylor's 6 steps of clinical reasoning for managing interpersonal events, (2008).

Anticipate
- Be prepared for difficult behaviors that could occur in the encounter with the patient. This helps one respond in an understanding way.

Identify, Cope, and Strive for Understanding
- When a patient begins to have a difficult behavior, identify the behavior that is happening which helps one approach the behavior in a therapeutic way for the patient.
- Stay calm and check in with your own emotions. Understand the behavior is not happening because of you.
- Strive to understand the patient's behavior by understanding what the patient may be thinking or feeling before, during and after the behavior has occurred. Then reflect on what the patient may need
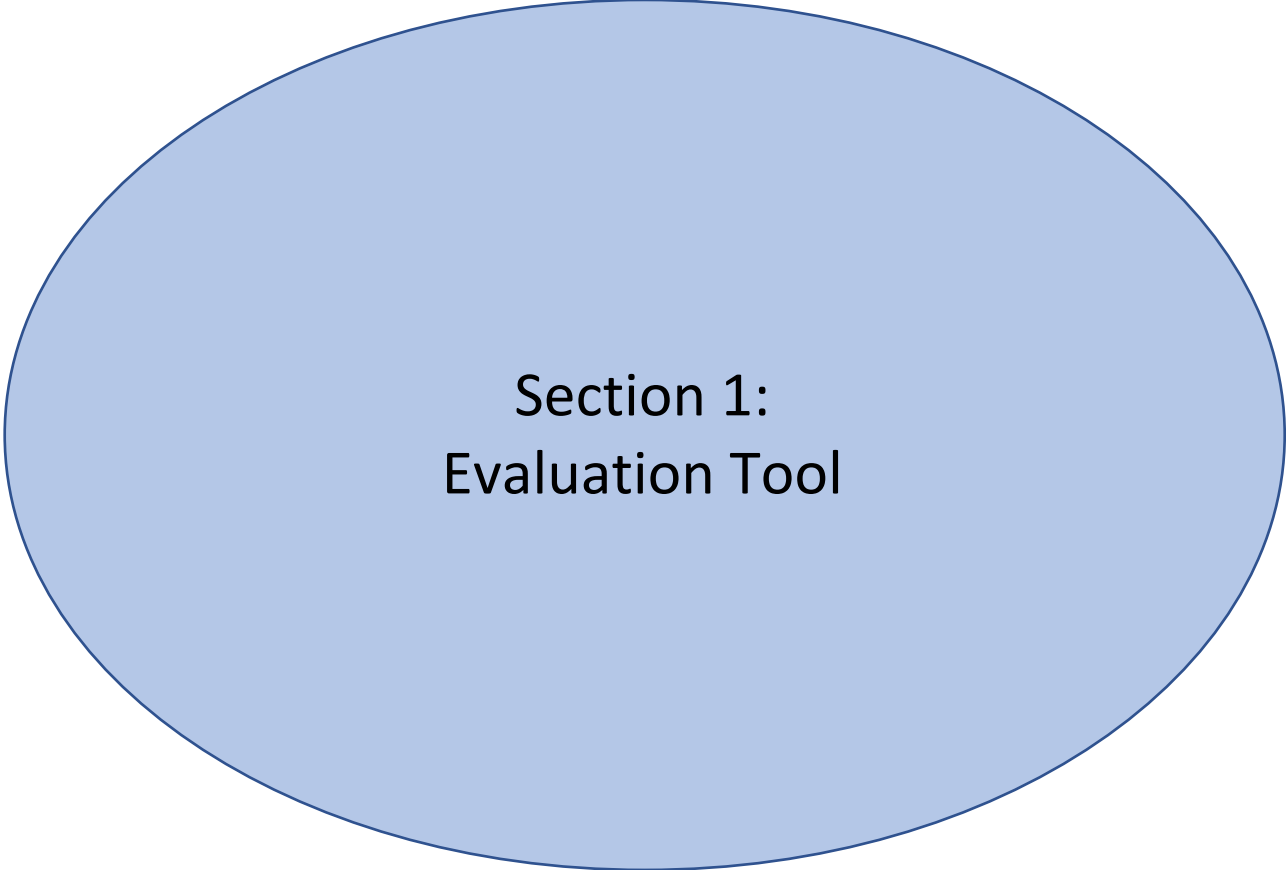
Body Position
- Maintain a neutral body position and posture. Sit or stand eye level to the patient.
- Match tone of voice or volume of voice to the patient.
- Be in a position near a door or exit.
- Make sure everyone in the room is out of the way of anything that could be potentially harmful.

Use Interpersonal Skills
- Acknowledge the patient's feelings throughout the session. Help them feel heard and understood.
- Maintain flexibility throughout the session, as expectations may change throughout.
- Collaborate with the patient so they feel a part of the process.
- Problem solve with the patient to understand their needs and how their needs can be met.

(Taylor, 2008)

Section 1:
Evaluation Tool

Introduction

This evaluation consists of a non-standardized assessment created by occupational therapy staff at Hennepin County Medical Center and was adapted by Meghan Janssen for this product with permission to use (see Appendix A) from Hennepin County Medical Center.

The purpose of the assessment is to gain an understanding of the patient's background and what may trigger their aggression or makes them feel uncomfortable in the hospital. It also helps the interprofessional team collaborate with the patient on various sensory-based interventions that can be given to the patient to decrease their aggressive behaviors. The assessment was created for occupational therapy practitioners or interprofessional staff working in the acute care setting to assess patients with aggressive behaviors.

The assessment was modified using Dunn's (2017) Ecology of Human Performance Theory (EHP) as it includes questions to gain knowledge on the *person, tasks,* and their *context* (Dunn, 2017).

How to Implement the Non-Standardized Assessment

- The assessment will take about 15-20 minutes.
- The patient can stop at any point, it is not a standardized assessment.
- Complete an introduction with the patient and explain what the purpose of the assessment is.
- Go through the assessment like an interview. Since the assessment is not standardized, it can be adapted to fit the patient and their circumstances.
- After the assessment is completed, share the information gathered from the assessment to the interprofessional team working with the patient.

<div align="center">

Health Management Patient Assessment

</div>

Person:
How would you rate your current level of comfort?
Calm/Relaxed (0) A little anxious (1) Anxious (2) Severe Stress (3) Limited self-control (4)

Is there one particular thing that has been a problem today?

Are you experiencing pain now (or have you recently)? ☐ Yes ☐ No If yes, pain rating =
____ / 10
Comments:
Are there things about being in the hospital that are hard for you? ☐ Yes ☐ No
If yes, please tell me more.

Context:
Do any of these contexts make you feel uncomfortable or upset? (Check all that pt reports
are triggers)

Physical Context		Being around others
	Room door open	Contact with specific person(s)
	Room door closed	Being isolated
	Bright lights	People in uniform
	Darkness/dim lights	Not having choices/input
	Loud noises	Being ignored/not listened to
	Silence	**Sensory Context**
	Particular time of day	Being touched
	Particular time of year	Being restrained
	Clutter	Feeling too hot
Social Context		Feeling too cold
	Being around men	Auditory/visual hallucinations
	Being around woman	Sudden movements

Other / Comments:

What are warning signs that you are getting or are upset/angry?

Emotional		Physical	
	Irritable		Sweating
	Crying		Staring
	Using a loud voice / Yelling		Wringing hands
	Swearing/ Rude comments		Clenching fists
	Mumbling		Clenching teeth
	Laughing loudly/Giddy		Pacing
	Singing inappropriately		Rocking
	Having bad thoughts		Can't sit still
	Confusion		Slamming doors/throwing things

Other / Comments:

Tasks:

What things help you feel better / more relaxed?

Things that help some people feel better	Reports helpful	Pt wants to try	OT facilitated	Recommendation to Nursing to facilitate
Sensory				
Stress ball				
Wrapping in warm blanket				
Holding a stuffed animal				
Playing with putty/playdoh				
Touching textures				
Aromatherapy				
Hot/cold shower				
Putting hands in water				
Cool cloth on face/neck				
Ice pack to cool down				
Physical / Mindfulness				
Exercise through walking				
Exercise through:_____				
Yoga/Meditation				
ThaChi				
Mindfulness exercises				
Deep breathing/relaxation exercises				
Activities				
Watching TV				
Reading				
Games – Sudoku				
Games – word finds				
Games - other				
Listening to music				
Listening to relaxing sounds (TV channel)				
Drawing/artwork				
Writing/journaling				
Control / Predictability				
Having a regular routine				
Having a list of what to expect				
Context				
Dark room/dim lights				
Earplugs to decrease sound				
Talking to others (staff/peers)				
Talking to chaplain				
Being left alone				
Sitting up				
Laying down				
Medication (mood)				

What do you like to do for fun/relaxation when not in the hospital?

What else should we know about you so we can help make you feel comfortable here?

Do you have a history of trauma? ☐ **Yes** ☐ **No If yes, is there anything you want us to know**
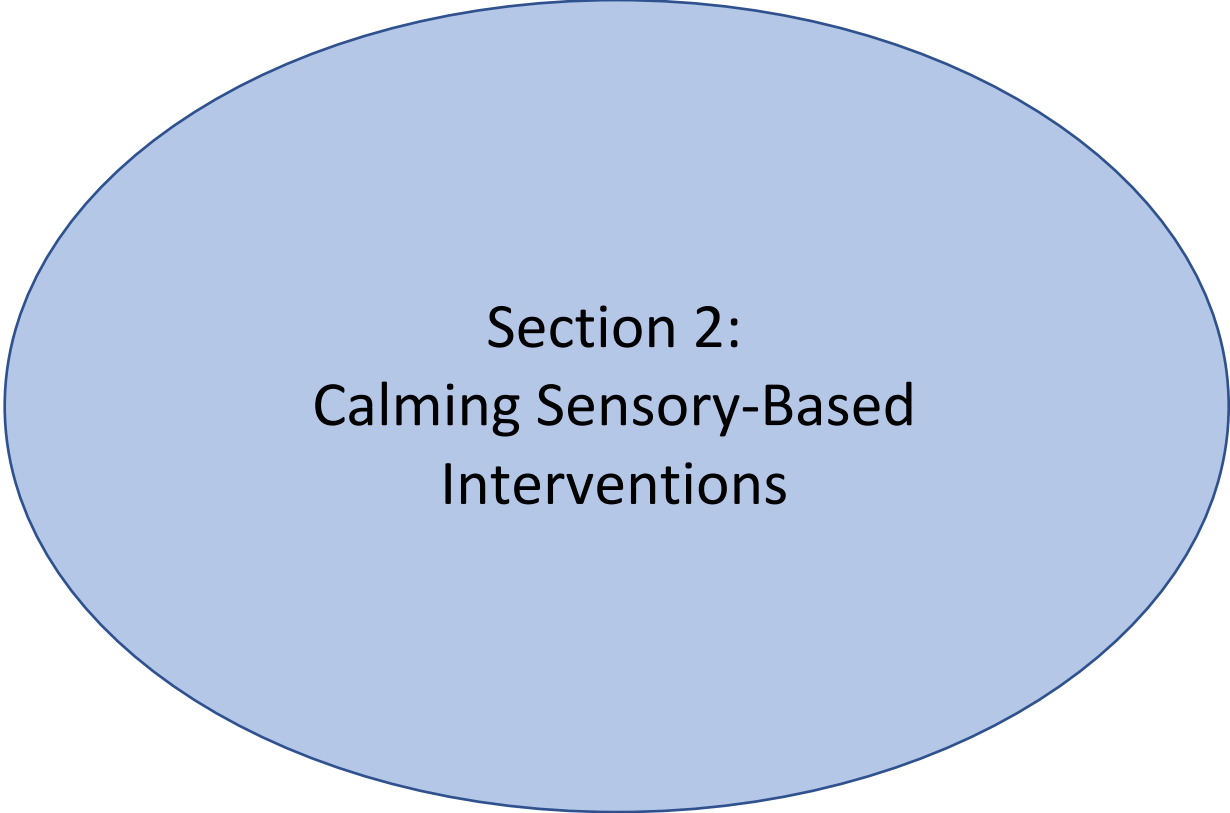
OBSERVATIONS:

Behaviors	
	Challenging/threatening
	Swearing
	Yelling/screaming
	Self-harm/harm to others
	Teary eyed/crying
	Mumbling
	Pacing
	Rocking
	Restless
	Fidgeting
	Glaring
	Staring
	Slamming doors/throwing objects

Emotional State	
	Irritable
	Withdrawn/sad
	Scared/paranoid
	Angry/hostile
	Anxious
	Confused
	Low frustration level
	Low tolerance for environmental stim.

Other / Comments:

HANDOFF TO Interprofessional Staff:
☐ Please see section above for recommended potentially calming interventions
☐ Patient is HOH; hears better out of his/her/their ☐ Right ☐ Left ear
☐ Patient requires glasses for ☐ reading only ☐ distance only ☐ near and far vision
☐ Patient is has/reports memory deficits
☐ Patient benefits from information that is written, reinforced
☐ Patient responds well to building trust/rapport
☐ Patient responds well to clear, concise directions
☐ Patient responds well to being given more space
☐ Patient responds well to limit setting
☐ Other:_____

Section 2:
Calming Sensory-Based
Interventions

Introduction

The purpose of the calming sensory-based interventions is to help the patient increase or decrease their sensory input in order to help regulate their aggressive behaviors; therefore, increasing their health management and social participation while increasing their well-being and safety.

Below are various sensory-based interventions which are designed to be implemented with patients who have aggressive behaviors. Dunn's (2017) Ecology of Human Performance (EHP) theory helped guide the development of the interventions to be client-centered. The interventions are broken up by interventions approaches that include *prevent, establish/restore, and modify/adapt* (Dunn, 2017).

- The *prevent* section includes strategies of using therapeutic communication with the patient.
- The *establish/restore* section contains sensory-based, self-calming strategies.
- The *adapt/modify* section includes evidence-based calming sensory activities that are described through *person, task*, and *context*.

These interventions are used to ***prevent*** aggressive behaviors from happening.

Therapeutic communication

One of the most important skills to have is the ability to build a therapeutic relationship with a patient. It is especially important to have this skill when working with patients who may have aggressive behaviors. When there is a therapeutic relationship with therapeutic communication, the patient will most likely engage in the interventions with success. There are various techniques to take when using therapeutic communication. Below focuses on non-verbal therapeutic communication and verbal therapeutic communication (Zivanovic & Ciric, 2017).

Non-Verbal
- Maintain a calm and relaxed posture.
- Position yourself so that your head is at the same level or below the patient's head, as it displays wiliness to communicate with the patient and is less threatening.
- Avoid placing your hands on your hips or your arms crossed, as it displays reluctance to help the patient. Instead, keep hands open and eyes at the same level as the patient
- Maintain 4 times the amount of personal space than a patient without aggressive behaviors.
- Position yourself at an angle from the patient as this will help remain personal space for the patient.

Verbal Techniques
- Maintain a calm and low voice as this will help the patient know there is not competition between you and them and it can help decrease impulsive behaviors from the patient.
- Speak clearly, slowly to your discretion and use simple and short sentences.
- It is important to validate and acknowledge the patient's feelings as they may not get this communication with anyone else.
- Reassure the patient that you are there to help them and that the staff and patient are a team working together to help them get better.
- Avoid interrupting the patient, as this helps the patient feel more comfortable to communicate their feelings and concerns without feeling unheard.
- Communicate with the patient in a way that assures them they have control over their aggressive behaviors.

Precaution: For those with low cognition, it is important to use short words, allow extended time for processing words, or couple with simple, slow demonstration. Use of words can be scary for those who cannot process words, which can trigger aggression

<div align="center">**Establish/Restore**</div>

These interventions focus on ***establishing*** new strategies or routines and ***restoring*** behaviors back to what they once were.

Self-calming strategies

One way to reduce aggressive behaviors is to establish self-calming strategies. This can be done by educating the patient on different strategies that they can use when they are starting to feel agitated. Below is a description of three main self-calming strategies.

Deep Breathing
- Deep breathing tells the body to calm down. The more that deep breathing is practiced the more the patient's body will know how to respond to it.
- Have the patient breathe in slowly and count to 4 seconds. Have the patient hold their breath for 4 seconds. Then have the patient breathe out for 4 seconds. Have the patient continue this process until they feel calm
- **Precaution:** Length of breath can be adjusted for the individual.

Imagery
- People have emotional reactions to thoughts in their brain. If a person can think about something they enjoy or a memory they enjoy, then there is a chance they will be able to calm them self-down.
- Make sure the patient is in a space that is pretty quiet and does not have many distractions. Have the patient think of a place that is calming for them, this could be the beach, mountains, being at home, spending time with friends etc. Have the patient paint a picture of that place in their mind. Then have the patient go through all the senses at that place, what do they see, what do they hear, what can they touch, what do they taste, and what can they smell.
- **Precaution:** Not to be used with people who are hallucinating or delusional.

Progressive muscle relaxation
- When agitation or frustration increase, the tension in the muscles of our body tense up. Progressive muscle relaxation helps a person become aware of the tension in their body and helps relax them.
- Make sure the patient is in a quiet space and have them lie down. The idea is that the patient will tense each muscle and then release the tension in the muscles. Have the patient start with their feet. Have the patient tense the muscles in their toes. They can do this by curling their toes into their foot, have them hold this for 5 seconds and then have them release the tension and relax. Then continue to the calf and so on.

Precaution: For those with low cognition, it is important to use short words, allow extended time for processing words, or couple with simple, slow demonstration. Use of words can be scary for those who cannot process words, which can trigger aggression

Adapt/Modify

These are meaningful and therapeutic activities that are meant to be used with the patient and can be *adapted* or *modified* to fit their needs or abilities.

Coloring

Task: Print off a coloring sheet from a free online source or use a coloring sheet from a coloring book, assuring that the demands of the image match the abilities of the patient. For calming effects, provide soft blues, grays, tans, and pinks. Avoid images that are excessively busy with too many small lines for a calming effect. This task allows for proprioceptive movement (Bowman & Jones, 2016; West, Melvin, McNamara, & Gordon, 2017).

Person: Offer choices of images and colors.
- Grading down: For those with lower cognitive ability, offer 2 choices. Select simple, familiar images.
- Grading up: For those who want a more challenging coloring page, select a more difficult image.

Context: The coloring sheet, colors, table, clipboard, bed, chair, hospital room.

Journaling

Task: Print off lined paper from a free online source or use lined paper from a notebook, assuring that the thickness of the lines and space between the lines match the abilities of the client. For a calming effect, provide lined paper with soft blues or grays (West et al., 2017).

Person: Offer choices of lined paper and a writing utensil.
- Grading down: For those with decreased vision, provide lined paper with bolded lines and greater space between the lines.
- Grading up: For those who want a challenge, provide college ruled line paper.

Context: Lined paper, writing utensil, table, clipboard, bed, chair, hospital room.

Exercise

Task: Go on a walk with the client in the hallway or engage in different exercises they are able to do in the room such as jumping jacks, lunges, squats, assuring that the exercise matches the patient's abilities. Explore what the patient finds meaningful to them (West et al., 2017).

Person: Offer choices of various exercises.

- Grading down: For those who have weight bearing precautions, other precautions or lines that restrict their mobility, give choses of exercises they are able to do in bed or in the chair.
- Grading up: For those who want an increased challenge, increase repetitions or sets of the activity.

Context: Bed, chair, walker, gait belt, bed, chair, hospital hallway, hospital room.

Music

Task: Play music for the patient on the TV, computer, or their cell phone in their room. There are links and apps in the resource section found below that can be used to play various genres of music. Ensuring that the demands of the app or link meets the abilities of the patient, if not, help them set up the app or link (Bowman & Jones, 2016; West et al., 2017).

Person: Offer choices of music genres.
- Grade down: For those with lower cognitive ability, set up the music for them on a computer or TV.
- Grade up: For those who have a cell phone, a music app can be set up on their phone and they can navigate their music choices through the app.

Context: Music link, volume of music, device the music is playing on, hospital room.

Relaxing Sounds

Task: Play relaxing sounds for the patient on the TV, computer, or their cell phone in their room. There are links and apps in the resource section below that can be used to play relaxing sounds. Ensuring that the demands of the app or link meets the abilities of the patient, if not, help them set up the app or link (Bowman & Jones; West et al., 2017).

Person: Offer choices of relaxing sound apps or web links.
- Grading down: For those with decreased cognition, set up the relaxing sounds on the computer or TV for the patient.
- Grading up: For those with increased cognition, give the patient a list of apps that they can set up on their smart device on their own.

Context: Web link, volume of music, device the relaxing sounds are playing on, hospital room.

Stress Ball

Task: Have the patient hold the stress ball in their hand and squeeze it as hard as they can for up to 5 sec and then have them release it. Have the patient do this as many times as they feel necessary. Another way they can use the stress ball, is have the patient place it on a surface and roll the ball by curling their fingers toward their palm. The last way they can use the ball is by

putting it between their hands and squeezing it between their hands (Bowman & Jones, 2016; West et al., 2017).

Person: Offer choices of ways to use the stress ball.
- Grading down: For those with decreased strength, use a less firm stress ball.
- Grading up: For those with increased strength, have them try the different techniques handling the stress ball.

Context: Stress ball, side table, bed, chair, hospital room.

Texture Play/Multisensory

Task: Provide the patient with some type of texture manipulative such as playdoh, sand foam, bean bag, etc., assuring the demands of the texture matches the patient's abilities. For calming affects have the patient play with the texture for at least 5 minutes (Bowman & Jones; West et al., 2017).

Person: Offer choices of the different textures to engage with.
- Grading down: Have the patient play with the texture on the table.
- Grading up: Have the patient rub the texture on their skin on their arm.

Context: Playdoh, sand foam, bean bag or other texture manipulative, side table, bed, chair, hospital room.

Stuffed Animal

Task: Introduce the stuffed animal to the patient. Have the patient hold and pet the stuffed animal. Let them spend time with it and engage with it how they want to (Bowman & Jones, 2016; West et al., 2017).

Person: Offer choices of the kind of stuffed animal and material.
- Grading down: A larger and softer stuffed animal may be beneficial for some.
- Grading up: A smaller and less soft animal may be beneficial for some.

Context: Stuffed animal, kind of stuffed animal, material of stuffed animal, placement of stuffed animal.

Weighted Blanket

Task: Cover the client with the weighted blanket or wrap them up in the blanket like a burrito. While the patient is in the blanket, listen to music or engage in another activity the patient may want to do (Bowman & Jones, 2016; West et al., 2017).

Person: Offer choices of weight if able.

- Grading down: For those who weigh less, a lighter weighted blanket should be used.
- Grading up: For those who weigh more, a heavier weighted blanket should be used.

Context: 12-20 lbs. weighted blanket, hospital bed or chair, hospital room.

Aromatherapy

Task: Use an aromatherapy patch and share with the patient that they can place the patch on their skin, gown or blanket (Bowman & Jones; West et al., 2017). While using the aromatherapy, listen to music or engage in another activity the patient may want to do.

Person: Offer choices for the different kinds of aromatherapy patches.
- Grading down: Place the aromatherapy patch further away from the patient, so it does not smell as potent.
- Grading up: Place the aromatherapy patch closer to their nose such as on their shirt or blanket so it smells more potent.

Precaution: It is important to watch how the patient reacts to the aromatherapy. Sometimes calming oils have the opposite effect on people. Such as lavender can be alerting for some people instead of calming. Although research is very limited, patients with any respiratory condition (including asthma) should be **monitored closely** if using aromatherapy.

Context: Aromatherapy patch, blanket, gown, bed, chair and hospital room.

Environmental Modifications

Task: Change the lighting of the room or temperature of the room depending on the patients needs. Remove access clutter in the room and keep the door shut for a quieter space (Rosenthal et al., 2021).

Person: Offer choices for the different kinds of modifications that can be done in the room.
- Grading down: For those who cannot handle a lot of stimulation, make as many modifications as possible to the room.
- Grading up: For those who can handle more stimulation, make only one or two modifications to the room.

Context: The hospital room and furniture.

Precaution: For those with low cognition, it is important to use short words, allow extended time for processing words, or couple with simple, slow demonstration. Use of words can be scary for those who cannot process words, which can trigger aggression

Additional Resources for Interventions

The following resources are free resources that can be provided and used with patients. The first section are web links that are used either for free print offs, videos or sources to play music. The second section are app resources that can be downloaded on the patient's smart device as long as there is permission from the patient to do so.

Web Links

Free Coloring Sheet
- http://www.supercoloring.com/
- https://printablefreecoloring.com/
- https://www.crayola.com/free-coloring-pages/adult-coloring-pages/
- https://coloringhome.com/adult-coloring-page

Free Lined Paper
- https://www.dadsworksheets.com/worksheets/handwriting-paper-printable-lined-paper.html

Music
- https://www.pandora.com/
- https://open.spotify.com/
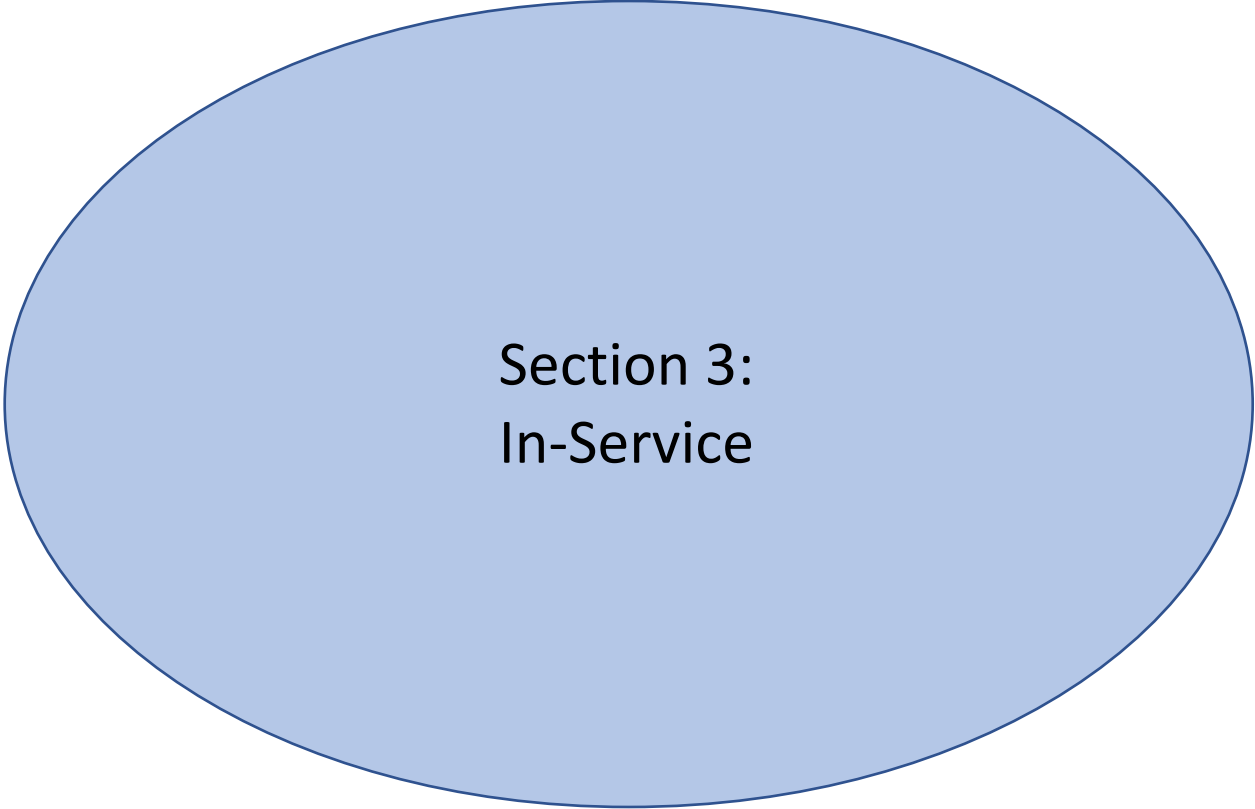- https://www.youtube.com/

Apps for Electronic Device

Music
- Pandora
- Spotify
- YouTube

Calming Sounds/Nature Sounds
- YouTube
- Atmosphere: Relaxing Sounds
- Animal Sounds
- Sleep Sounds
- Calm
- Ambience-Nature sounds: sleep and meditation
- SimplyNoise: Free White Noise

Section 3:
In-Service

Introduction

The employee in-service presentation is a Power Point designed to briefly cover what aggression is and why it is a concern to hospitals. It also is to inform employees on the purpose of the sensory-based toolkit and how to implement the assessment and sensory-based interventions. The in-service was created for OT Practitioners to present to other healthcare providers and interprofessional staff.

The in-service was developed with andragogy learning theory in mind. Based on the McCauley, Hammer, and Hinojosa (2017) article about the andragogy learning theory, adults learn best when taught learner-centered as compared to teacher-centered. The andragogy learning theory focuses on pulling from the student's past experiences to enhance the learning experience and increase connections from the content to the work environment (McCauley et al., 2017). Therefore, this presentation will follow the andragogy learning theory by integrating discussion time to pull from the learner's experiences. It will also help the learners reflect on their patients and who could benefit from the sensory-based toolkit.

SENSORY-BASED TOOLKIT IN-SERVICE

Presenter: This slide should be used to introduce the topic along with introducing the speaker and the attendees.

OBJECTIVES

1. Discuss aggression in the hospital
2. Share examples of experiences with patients who had aggressive behaviors
3. Discuss the purpose of the sensory-based toolkit in acute care
4. Discuss the purpose of the health management patient assessment and sensory-based interventions and how to implement them

Presenter: Go over the objectives listed above.

- What does aggression look like in the hospital?
  - Physical aggression
  - Verbal aggression
- What is the importance of sensory processing in relation to aggression?
  - Overstimulation
  - Under stimulation

Presenter:
What does aggression look like in the hospital?

- Kerr, Oram, Tinson, & Shum (2017) describe aggression as a variety of behaviors that result in harm to people or property. There are two main types of aggression that are seen in the hospital. They include physical aggression and verbal aggression.
- *Physical aggression* can include physical threats or assault, physical attacks, pushing, shoving, hitting, kicking, or biting.
- *Verbal aggression* can include verbal threats or assaults, yelling, screaming, or biting. Aggression is a major concern for hospitals (Kerr, Oram, Tinson, & Shum, 2017).
- Richarson et al., (2018) described staff are generally the main receivers of aggressive behaviors from patients (Richardson et al., 2018).

What is the importance of sensory processing in relation to aggression?

- There are many causes of aggressive behaviors among hospital patients, most of which are related to medical conditions that cause sensory dysregulation and excessive environmental stimulation.
- Medical conditions such as traumatic brain injury, Delirium, Dementia, Stroke, and Psychological diagnoses are all medical conditions that have been associated with aggressive behaviors (Abdelmalik, Draghic, & Ling, 2019; Pappadis et al., 2019; Wolf, Goldberg, & Feedman, 2018; Dening & Aldridge, 2021; Muir-Cochrane & Duxbury, 2017).

- In the hospital, patient's senses can be overwhelmed of underwhelmed based on their needs.
- The hospital can be filled with loud noises, not enough noise, people coming in and out of the room, bright lights, and changes in temperature. The patient can not engage in their normal daily hobbies or activities that they find meaningful. All these aspects can have an impact on a patient with aggressive behaviors.
- A patient with a low threshold to stimuli, will want to avoid all the stimuli and a patient with high sensory stimuli might not even notice the changes or it may take longer them to notice and be impacted.
- Based on Dunn's Model of Sensory Processing, patients with a low neurological threshold require minimal stimulation for their neurons to fire and the patient to react (Brown, Tollefson, Dunn, Cromwell, & Filion, 2000).
- A patient with a high neurological threshold needs high stimulation as it takes them longer to react to stimuli (Brown, Tollefson, Dunn, Cromwell, & Filion, 2000). It has been shown that sensory processing difficulties is associated to difficult behaviors (Boogert, 2021). This is evidence that sensory interventions can help in reducing people's aggressive behaviors by increasing or decreasing their sensory stimuli.

THE PURPOSE

- To promote patient engagement in <u>health management</u> and <u>social participation</u> through the implementation of a sensory-based assessment and interventions
- **The sensory-based toolkit includes:**
  - Health Management Patient Assessment
  - Sensory-based therapeutic activities as interventions

Presenter:
- The purpose of the sensory-based toolkit is to increase patient engagement in health management and social participation through the implementation of it.
- The sensory-based toolkit includes a behavioral assessment, sensory-based therapeutic activities as interventions to decrease aggressive behaviors.
- We will go over each component of the sensory-based toolkit on the following slides.

- What has been your experience with patients who have aggressive behaviors?
- What was the approach you took?
- Were there any strategies you used that seemed to work well with the patient?

Presenter: Share the discussion questions with the group. Allow time for the attendees to think about the questions and ask if anyone wants to share their thoughts.

PRECAUTIONS

- Anticipate
- Identify, Cope, and Strive for Understanding
- Body Position
- Interpersonal Skills

Presenter:
These precautions were adapted from Taylor's 6 steps of clinical reasoning for managing interpersonal events (2008).

Anticipate
- Be prepared for difficult behaviors that could occur in the encounter. This helps one respond in an understanding way

Identify, Cope, and Strive for Understanding
- When a patient begins to have a difficult behavior, identify the behavior that is happening which helps one approach the behavior in a therapeutic way for the patient.
- Stay calm and check in with your own emotions. Understand the behavior is not happening because of you.
- Strive to understand the patient's behavior by understanding what the patient may be thinking or feeling before, during and after the behavior has occurred. Then reflect on what the patient may need

Body Position
- Maintain body position and posture into a neutral stance and sit or stand eye level to the patient.
- Match tone of voice or volume of voice to the patient.
- Be in a position where you are near a door or exit.
- Make sure everyone in the room is out of the way of anything that could be potentially harmful.

Use Interpersonal Skills

- Acknowledge the patient's feelings throughout the session. Help them feel heard and understood.
- Maintain flexibility throughout the session, as expectations may change throughout.
- Collaborate with the patient so they feel part of the process.
- Problem solve with the patient to understand their needs and how their needs can be met.

PURPOSE OF THE HEALTH
MANAGEMENT PATIENT ASSESSMENT

- To understand the patient's background, triggers, and what makes them feel uncomfortable in the hospital
- To help the interprofessional team collaborate with the patient on various sensory-based interventions that can be given to the patient to decrease their aggressive behaviors

Presenter:
- This evaluation consists of a non-standardized assessment created by occupational therapy staff at Hennepin County Medical Center and was adapted by Meghan Janssen for this product with permission to use (see Appendix A) from Hennepin County Medical Center.

Purpose:
- The assessment is to gain an understanding of the patient's background and what may trigger their aggression or makes them feel uncomfortable in the hospital.
- It also helps the interprofessional team collaborate with the patient on various sensory-based interventions that can be given to the patient to decrease their aggressive behaviors.
- This assessment was created for occupational therapy practitioners or interprofessional staff working in the acute care setting to assess patients with aggressive behaviors.
- The assessment was modified using Dunn's (2017) Ecology of Human Performance Theory (EHP) as it includes questions to gain knowledge on the *person, tasks,* and their *context* (Dunn, 2017).

IMPLEMENTING THE ASSESSMENT

- The assessment will take about 15-20 minutes.
- The patient can stop at any point
- Complete an introduction with the patient and explain what the purpose of the assessment is.
- Go through the assessment like an interview
- After the assessment is completed, share the information gathered with interprofessional team
- Follow-with the patient in the next couple days

Presenter: Share the above bullet points with the group.
- **Hand out a copy of the assessment (located in section 1 of the toolkit) to each member in the group.**
- Go through the sections of the assessment.
- Ask if there are any questions on how to implement the assessment.
- **Have the group members go through the assessment with the person next to them and practice.**

SENSORY-BASED INTERVENTIONS PURPOSE

- To help the client increase their sensory stimuli or decrease their sensory stimuli in order to decrease aggressive behaviors which ultimately will increase the patient's health management.

Presenter:

    Purpose:

- The sensory-based interventions are to help the patient increase or decrease their sensory stimuli in order to help regulate their aggressive behaviors which will increase the patient's health management.
- On the next slides we will go over various sensory-based interventions which are designed to be implemented with patients who have aggressive behaviors.

TYPES OF SENSORY-BASED
INTERVENTIONS

- Prevent
- Establish/Restore
- Adapt/Modify
  - *Person, Task, Context*

(Dunn, 2017)

Presenter:

- **Hand out a copy of the interventions to each member in the group (located in section 2 of the toolkit).**
- Dunn's (2017) Ecology of Human Performance (EHP) theory helped guide the development of the interventions to be client-centered.
- The interventions are broken up by *prevent, establish/restore, and modify/adapt* (Dunn, 2017).
- The *prevent* section includes strategies of using therapeutic communication with the patient.
- The *establish/restore* section contains sensory-based, self-calming strategies.
- Finally, the *adapt/modify* section includes evidence-based calming sensory activities that are described through *person, task*, and *context*.

Presenter:
- These interventions are used to ***prevent*** aggressive behaviors from happening.

Therapeutic communication
- One of the most important skills is the ability to build a therapeutic relationship with a patient. It is especially important to have this skill when working with patients who may have aggressive behaviors. When there is a therapeutic relationship with therapeutic communication, the patient will most likely engage in the interventions with success (Zivanovic & Ciric, 2017). There are various techniques to take when using therapeutic communication.
- **Go through non-verbal and verbal techniques**

Non-Verbal Techniques
- Maintain a calm and relaxed posture.
- Position yourself so that your head is at the same level or below the patient's head, as it displays wiliness to communicate with the patient and is less threatening.
- Avoid placing your hands on your hips or your arms crossed, as it displays reluctance to help the patient. Instead, keep hands open and eyes at the same level as the patient
- Maintain 4 times the amount of personal space than a patient without aggressive behaviors.
- Position yourself at an angle from the patient as this will help remain personal space for the patient.

Implementing these techniques will communicate to the patient that you are not superior to them and that you are willing to help and be there for them.

Verbal Techniques

- Maintain a calm and low voice as this will help the patient know there is not competition between you and them and it can help decrease impulsive behaviors from the patient.
- Speak clearly, slowly to your discretion and use simple and short sentences.
- It is important to validate and acknowledge the patient's feelings as they may not get this communication with anyone else.
- Reassure the patient that you are there to help them and that the staff and patient are a team working together to help them get better.
- Avoid interrupting the patient, as this helps the patient feel more comfortable to communicate their feelings and concerns without feeling unheard.
- Communicate with the patient in a way that assures them they have control over their aggressive behaviors.

Presenter:
- These interventions focus on *establishing* new strategies or routines and *restoring* behaviors back to what they once were.

Self-calming strategies
- One way to reduce aggressive behaviors is to establish self-calming strategies. This can be done by educating the patient on different strategies that they can use when they are starting to feel agitated. Three main self-calming strategies that can be used with patients who have aggressive behaviors. They include deep breathing, imagery, and progressive muscle relaxation. Below is a description of how these interventions can be taught to the patient.
- **Briefly go through each intervention and have the attendees go through the directions of how to implement the intervention with a partner next to them**

Deep Breathing
- Deep breathing tells the body to calm down. The more that deep breathing is practiced the more the patient's body will know how to respond to it
- **Have attendees read through how to do it with their partner**

Imagery
- People have emotional reactions to thoughts in their brain. If a person can think about something they enjoy or a memory they enjoy, then there is a chance they will be able to calm them self-down.
- **Precaution:** Not to be used with people who are hallucinating or delusional.

- **Have attendees read through how to do it with their partner**

Progressive muscle relaxation
- When agitation or frustration increase, the tension in the muscles of our body tense up. Progressive muscle relaxation helps a person become aware of the tension in their body and helps relax them.
- **Have attendees read through how to do it with their partner**

ADAPT/MODIFY INTERVENTIONS

- Coloring
- Journaling
- Exercise
- Music
- Relaxing Sounds
- Stress Balls
- Texture Play

- Stuffed Animals
- Weighted Blanket
- Aromatherapy
- De-Clutter
- Eye Masks
- Ear Plugs

(West, Melvin, McNamara, & Gordon, 2017).

Presenter:
- These are meaningful and therapeutic activities that are meant to be used with the patient and can be *adapted* or *modified* to fit their needs or abilities.
- **Go through one example "coloring" with the attendees then have them go through the rest on their own or with a partner. Ask if there are any specific questions from the attendees**

Example: Coloring
Task: Print off a coloring sheet from a free online source or use a coloring sheet from a coloring book, assuring that the demands of the image match the abilities of the patient. For calming effects, provide soft blues, grays, tans, and pinks. Avoid images that are excessively busy with too many small lines for a calming effect (West, Melvin, McNamara, & Gordon, 2017).
Person: Offer choices of images and colors.
- Grading down: For those with lower cognitive ability, offer 2 choices. Select simple, familiar images.
- Grading up: For those who want a more challenging coloring page, select a more difficult image.

Context: The coloring sheet, colors, table, clipboard, bed, chair, hospital room.

IMPLEMENTING SENSORY-BASED
INTERVENTIONS

- When should the sensory-based interventions be implemented?
  - The same day as the behavioral assessment
  - In the follow-up sessions

Presenter: Share the information presented on the slide and ask if there are any additional questions about when to implement the interventions.

PRECAUTIONS WHEN IMPLEMENTING INTERVENTIONS

• For those with low cognition, it is important to use short words, allow extended time for processing words, or couple with simple, slow demonstration. Use of words can be scary for those who cannot process words, which can trigger aggression

Presenter: Share the information presented on the slide.

QUESTIONS?

Presenter: Ask the attendees if there are any additional questions

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Appendix B

Product Implementation Plan

Process
Prior to using the Sensory-Based Toolkit

Nursing staff will implement the MIAHTAPS assessment (A violence risk assessment successfully utilized to reduce assaults to health care workers) on every patient once, every nursing shift. The results of the assessment will be entered in each patient's chart. For a patient to be a candidate for the sensory-based toolkit, the patient has to score a 3 or higher on the MIAHTAPS assessment three consecutive days in a row or three consecutive nursing shifts in a row.

Goals of Product
1. Increase patients' engagement in health management and social participation
2. Decrease aggressive behavior in acute care
3. Decrease use of pharmacological and restraint interventions
4. Increase interprofessional collaboration

Objectives of Product
- **Create** a toolkit that includes an assessment and calming therapeutic sensory-based interventions
- **Implement** sensory-based interventions to prevent and de-escalate aggression without use of pharmacological or restraint interventions
- **Discuss** the sensory-based toolkit and how to implement it with healthcare providers through an in-service presentation

Using the Sensory-Based Toolkit

Needed Materials:
- Health Management Patient Assessment
- Calming Sensory-Based Interventions
- In-service Presentation

An occupational therapy (OT) practitioner or any other health care provider is able to administer the sensory-based toolkit. Depending on the hospital, each department may play a particular role. Because of this reason, the toolkit was developed to be utilized interprofessional. The hospital will determine what departments or health care providers will administer the sensory-based toolkit based on their availability for staff and role.

To begin the process of using the sensory-based toolkit, the OT practitioner or health care provider will refer to the MIAHTAPS flow chart in the patient's chart. If the patient scored a 3 or higher for three consecutive days or in three consecutive nursing shifts, they are eligible for the assessment.

Once it is determined that the patient is eligible, the OT or health care provider will implement the *Health Management Patient Assessment* with the patient. After the assessment

is completed, the provider will document the results in the patient's chart. Once documentation is completed, the provider should communicate with the interprofessional team the results determined and recommend interventions based on the results.

Once interventions have been determined, the provider who implemented the assessment should follow up with the patient the next day and provide the determined interventions to them. The provider and interprofessional team can discuss further how many follow-up sessions they should provide to the patient.

The In-service presentation is provided to educate staff on the sensory-based toolkit and how to implement it. It can be done whenever staff has available time. It is recommended this presentation be implemented to staff prior to the launch of the toolkit.

Health Management Patient Assessment
- The assessment will take about 15-20 minutes
- The patient can stop at any point, it is not a standardized assessment
- The OT or health care provider should complete an introduction with the patient and explain what the purpose of the assessment is
- The OT or health care provider through the assessment like an interview
- The assessment can be adapted to fit the patient and their circumstances
- After the assessment is completed, share the information gathered from the assessment to the interprofessional team working with the patient.

Calming Sensory-Based Interventions
- The OT or health care provider should implement appropriate interventions the day of or the day following the assessment
- The provider who implemented the assessment and interprofessional team will determine how many follow ups are needed for interventions
- Some interventions will not need many follow-up sessions

In-Service Presentation
- The OT or health care provider will initiate the in-service presentation with staff
- The in-service presentation can be held in a conference room
- Allow at least 30 minutes to complete presentation and questions

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Evaluation Plan

Evaluation Methods

An occupational therapy (OT) practitioner or health care provider at the Hennepin County Medical Center will conduct the non-standardized *Health Management Patient Assessment* with patients who have aggressive behaviors. The patient with aggressive behaviors has to have a MIAHTAPS of 3, three consecutive days in a row or a 3, three consecutive nursing shifts in a row.

Plan for Managing Adversity

Changes that may occur or problems with the assessment or interventions will be addressed by the health care provider giving out the assessment and interventions. If it

determined a change needs to be made or a problem arises, appropriate changes will be made by the interprofessional team working with the patient.

Data Collection

The assessment will be administered in the first session with the patient. Based on the information gained through the assessment, interventions will be chosen. The follow up sessions will include implementing interventions. Nurses will continue to document the patient's MIAHTAPS scores every shift.

Data Reporting

Data reporting for *A Sensory-Based Toolkit for Health Management of Patients with Aggressive Behaviors in Acute Care* will be done after administration of the assessment and will be recorded through a daily note in the documentation system that the hospital utilizes. With each follow-up session, a progress note will be documented. Nurses will continue to document the patient's MIAHTAPS scores every shift.

Data Analysis

If A *Sensory-Based Toolkit for Health Management of Patients with Aggressive Behaviors in Acute Care* is successful, nurses filling out the MIAHTAPS scores will report decreased aggressive behaviors. If it is not successful, the interventions will be reviewed and changed accordingly.

Reviewing Process

Yearly reviewing processes will be made on *A Sensory-Based Toolkit for Health Management of Patients with Aggressive Behaviors in Acute Care.* Based on the results of the year, appropriate changes will be made to the toolkit to meet the needs of the patients and staff.

Sustainability

A Sensory-Based Toolkit for Health Management of Patients with Aggressive Behaviors in Acute Care is a low cost program to implement because the assessment is printable and many of the interventions are free online to use. Interventions such as stress balls, texture play, weighted blankets and aroma therapy do have a cost, but many hospitals are willing to put money towards incorporating them in their supply room, or it can be billed in some cases.

For patients with aggression, there may be times where they want to try all sorts of interventions and times where they don't want to engage in any. The toolkit includes interventions that are easy to leave with the patient and they can engage with them when they would like to. Finally, the toolkit is accessible to all OT practitioners and healthcare providers through the hospital's website that all staff have access to.

Appendix C

Behavioral Assessment Permission Form

I, _Theresa Paulsen_ hereby grant and authorize Meghan Janssen the right to use, adapt and release the Behavioral Assessment created by the Occupational Therapy Department at Hennepin County Medical Center.

I understand that this information may be published in scholarly work through Scholarly Commons, a repository service of the University of North Dakota libraries, which may be accessed around the world.

Theresa Paulsen
Signature

3 - 31 - 22
Date

Appendix D

Implementation Plan Permission Form

I, _Theresa Paulsen_ , grant permission to Meghan Janssen and the Occupational

Therapy Department at the University of North Dakota School of Medicine and Health Sciences

to use the implementation plan for educational, promotional, operational purposes, or other

conditions that may arise. I understand that this information may be published in scholarly work

through Scholarly Commons, a repository service of the University of North Dakota libraries,

which may be accessed around the world.

Signature: _Theresa Paulsen_   Date: _3-31-22_