

IMPLEMENTATION OF A SENSORY MODULATION ROOM ON AN ACUTE CARE
PSYCHIATRIC UNIT: SUSTAINABILITY ISSUES

by

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Background/Significance

What are some adjunct interventions that can be implemented to avoid using seclusion, restraints, or PRN medications in psychiatric inpatient facilities? Formerly, there has been a finite amount of research regarding adjunctive methods to de-escalate violent or aggressive behavior in psychiatric facilities. Health care providers had limited evidence-based interventions to address this negative behavior, therefore leaving them three options: restraints, seclusion, or PRN medications. Further research in the past few years has proven that adjunct interventions alongside de-escalation training gives health care professionals optimal preparation for adverse events.

Sensory modulation, a form of complementary therapy, is the brain's ability to self-organize and interpret reactions to sensory input and then adapt to stimuli with an appropriate level of alertness. (Brown et al, 2018) To simplify, sensory modulation is any use of sounds, sight, touch, smells, taste, or movement to help manage one's emotional state. Some examples of sensory modulation are music, weighted blankets, aromatherapy, and reduced stimuli. In most situations where patients exhibit disturbing emotional states, sensory modulation should be performed as a priority intervention to de-escalate the resultant, disruptive behaviors. (Baldaçara et al, 2019)

Dr. Lancaster, my preceptor, conducted a quality improvement project in 2018 proving the effectiveness of sensory modulation. A grant provided Dr. Lancaster's original research project with funds to provide a sensory modulation room in the West

Wing of Coastal Plains Hospital, which is located in Eastern North Carolina. A self-reporting comfort room use log was implemented to assess frequency of patients use of the sensory room, changes in patient distress levels after use, and utilized as information for shift reports in addition to clinical electronic health record documentation. (Lancaster, 2018) After collecting results from patients over an eight-week time frame, this quality improvement project yielded positive results from both the staff and patients that participated in the study. (Lancaster, 2018) All patients reported a substantial positive increase in their mood after using the sensory modulation room. (Lancaster, 2018) In addition to this positive effect, approximately half of the staff at Coastal Plains verified the benefits of sensory modulation for patients and the health care professionals. (Lancaster, 2018) In the eight weeks prior to the implementation of the sensory modulation room, five security alert codes were called due to escalating aggression or violence. (Lancaster, 2018) In addition to the positive self-reports from the patients and staff, only 2 security codes were called during the eight-week implementation of sensory modulation. (Lancaster, 2018) This statistical analysis yielded a 60% reduction in the need of security alert codes and emphasize the need for sensory modulation in all acute psychiatric units. Sensory modulation is the least restrictive practice and empowers patients to mood manage in a safe and effective manner. Therefore, it is vital that mental health nurses across the country are educated on this complementary option. Advocacy is at the heart of nursing ensuring patients' best interests are served safely, without additional trauma. Implementation of sensory modulation methods reduces the use of more restrictive measures such as seclusion, restraints, or forced medications.

Literature Review/Synthesis

Several studies confirm the effectiveness of de-escalation techniques. In a South Australian emergency department, a pilot study examined the benefits of sensory modulation in a mental health setting for patients who are exhibiting symptoms of psychiatric distress or agitation. (Adams-Leask et al, 2018) In this project, seventy-four patients who presented with psychiatric distress spent around forty-five minutes in the sensory modulation room, and a self-reporting evaluation form was used to assess use of items, and distress pre and post sensory modulation use. (Adams-Leask et al, 2018) The patients reported sensory modulation assisted them in managing negative thoughts and emotions, and they experienced a significant decrease in distress after room use. (Adams-Leask et al, 2018) As a result, this article strongly promotes sensory modulation due to its contribution to increased brain function and a sense of control and safety. (Adams-Leask et al, 2018)

A second example of the benefits of sensory modulation was demonstrated through a quality improvement project done at an inpatient psychiatric unit at SUNY Upstate Medical University, and it analyzed the effectiveness and feasibility of using music as a priority intervention. (Scudamore et al, 2022) In this study, music therapy was implemented as a replacement or adjunct intervention instead of pharmacologic agitation management, and patients documented their results on self-report surveys. (Scudamore et al, 2022) 172 mental health patients volunteered over 6 months: three months without

music available and then three months with music accessible as a de-escalation option. (Scudamore et al, 2022) In the second 3 months, patients were allowed to determine which music genre they preferred to listen to with wireless headphone for up to 30 minutes. (Scudamore et al, 2022) After the research project was concluded, the results proved that alternate therapies can be successful when prioritized before administering PRN medications. (Scudamore et al, 2022) Compared to the first 3 months without music, the average weekly PRN medications given during the second 3 months with music significantly decreased for both haloperidol and olanzapine. (Scudamore et al, 2022) The patients' survey responses were 96% positive, and a majority of the nurses agreed that the project was easy to implement and that the patients were calmed by the music. (Scudamore et al, 2022)

Another significant study was a research project in the acute wards of all psychiatric hospitals in Slovenia, and this assessed the effects of non-verbal and verbal de-escalation methods on the use of physical restraints and the severity of aggression. (Celofiga et al, 2022) The study lasted 10 months in total: five consecutive months as a baseline in the first year and an intervention period of the same five consecutive months in the following year. (Celofiga et al, 2022) Before the intervention period, the staff teams on experimental wards received training in verbal and non-verbal de-escalation techniques. (Celofiga et al, 2022) "The incidence rates of aggressive events, severe aggressive events, and physical restraints per 100 treatment days decreased significantly after the intervention (Celofiga et al, 2022, p 103)." Compared to the control group, the frequency of aggressive events in the experimental group was 73% lower. (Celofiga et al,

2022) Additionally, the rate of severe events in the experimental group was 86% lower than the control group. (Celofiga et al, 2022) The incidence rate of physical restraints due to aggression during the intervention period decreased to 30% of the rate in the control group. (Celofiga et al, 2022) This is significant in minimizing trauma with utilization of non-pharmacological methods.

The next noteworthy article identifies non-pharmacological approaches for managing psychomotor agitation. (Baldaçara et al, 2019) According to these authors, managing patients experiencing agitation should always begin with the least coercive approach, which includes verbal de-escalation and moving the patient to a controlled environment, such as a sensory modulation room. (Baldaçara et al, 2019) Although the etiology of the medical condition should be considered first, “verbal de-escalation techniques have been shown to decrease agitation and reduce the potential for associated violence in the emergency setting (Baldaçara et al, 2019, p 14).” The report further states that once verbal de-escalation fails in calming the patient, physical restraint and rapid tranquilization should be used as a last resort to maintain optimal patient safety. (Baldaçara et al, 2019) In order for these sequential interventions to be successful, it is essential that healthcare workers are trained in non-pharmacological interventions for patients displaying psychomotor agitation. (Baldaçara et al, 2019)

Research Aims

This research targeted several goals. First, the purpose of this study was to promote increased interest and awareness surrounding sensory modulation rooms in acute

psychiatric settings. Based on previous studies, sensory modulation has been proven to be a priority evidence-based intervention for reducing aggression in psychiatric facilities, yet it is not a common practice in eastern North Carolina. To initiate a path to rectify this problem, my preceptor and I visited key stakeholders at Coastal Plains Hospital, which is the rural psychiatric hospital where the original research was conducted. It was determined that education of new nurses and health care staff regarding the use of the sensory modulation room with promotion of non-pharmacological de-escalation techniques for patients who experience aggressive episodes is key. Assessment of reopening the sensory modulation room with sustainability efforts including infection control was identified as priority.

The second goal of this study is to complete and publish a literature review from the time Dr. Lancaster's project in 2018 was conducted to the present, which allows an update to the original research on sensory modulation in mental health facilities. This will assist in providing a current perspective on this quality improvement project with inclusion of issues related to post-pandemic sustainability.

Methodology

The study design for this endeavor involves two different approaches. Assessment and education of the stakeholders is identified as quality improvement. Alternatively, the process by which data collection with analysis for the distinct purpose of dissemination is described as qualitative descriptive research. Initially, focus was on defining sensory modulation and the limitations and benefits of implementing a sensory room in a

psychiatric facility. Extensive review of Dr. Lancaster's manuscript provided baseline information on the focus of the updated literature review. The meeting with ECU Health Sciences librarian, Dr. Amanda Haberstroh was instrumental in completing a term harvest for studies published after Dr. Lancaster's original research.

Some inclusion criteria include articles in the English language, effects of sensory modulation or de-escalation on psychiatric patients, non-pharmacological methods in decreasing aggression, academic journal articles, global focus and articles published from 2018-2022. Some exclusion criteria included research published before 2018, non-English articles, or patients that cannot participate in sensory modulation.

Results

Based on our research aims for our project on sensory modulation, one would conclude that our interventions were implemented successfully. In November, Dr. Lancaster and I were able to visit Coastal Plains Hospital and communicate with several health care professionals such as a nurse manager, nurse practitioner, medical doctor, and a pharmacologist on their views of the sustainability of reopening the sensory modulation room, and what barriers we would need to overcome in order to do so. All of the key stakeholders unanimously agreed that opening the comfort room back up would be very beneficial for both patients and staff at Coastal Plains. We then proceeded to brainstorm what ways we could overcome barriers that staff had identified would be an issue when implementing the sensory room. After communicating with the staff of facilitators that would allow us to eliminate the stated barriers, we revisited the sensory modulation room to assess the current state that it was in. We were pleased to see that it was in a similar

condition as it was when Dr. Lancaster first opened it in 2018, which was helpful with avoiding more expenses than necessary. Overall, the trip to Coastal Plains was extremely successful and will provide many benefits to the psychiatric hospital.

We also were able to perform a literature review and use the articles to update our research knowledge on the sustainability of reopening the psychiatric unit, as I previously mentioned. Throughout our research conducted, we implemented the new knowledge we gained when discussing the barriers and facilitators of the Coastal Plains comfort room. We also will be able to use the literature review when teaching sensory modulation techniques to new medical professionals hired at Coastal Plains.

Lastly, the past two years of conducting this research has resulted in the promotion of sensory modulation in many different ways. We have been able to discuss with and educate many people who were not aware of sensory modulation and the benefits that are reaped when implementing this before resulting to seclusion and restraints. Promotion of our research has included interpersonal conversations that I have had regarding sensory modulation, group meetings with the Coastal Plains staff, and presenting my poster to the Beta Nu Chapter showcase and the State of North Carolina Undergraduate Research & Creativity Symposium (SNCURCS) at University of North Carolina Wilmington. Because SNCURCS was a huge convention that included many diverse majors from different universities across the state, it seemed to have the most impact on promoting sensory modulation in psychiatric units. Many people who stopped by our poster and watched me present on sensory modulation were not aware that sensory

modulation could be used as a medical intervention and the benefits that were reaped from it.

Discussion

Throughout our research, the main topic that we discussed was the barriers in reopening the sensory room and what facilitators we could implement to overcome these barriers. The first barrier we talked about was availability of staff because that was the main issue that Dr. Lancaster faced in her original project in 2018. After a short conversation about staffing, we quickly came to realize that this was not an issue anymore.

As we continued with our meeting, it became apparent that there was one main barrier that Coastal Plains faced: infection control. Since the Coronavirus pandemic in 2020, staff at Coastal Plains has had to redo how they implement interventions with psychiatric patients. Management also had to make the difficult decision to close the sensory room due to the inability to carry out timely sanitations between psychiatric patients' aggressive episodes. Not all comfort room items, such as weighted blankets or weighted stuffed animals, can be cleaned with a quick turnaround time.

To rectify this situation, we came up with two solutions. The first solution was utilizing a ultraviolet wand to efficiently sanitize the room rapidly between patients. When communicating with Coastal Plains staff, we became aware that Coastal Plains Hospital's main hospital, Nash General Hospital, was currently using the ultraviolet wands to sanitize patient rooms in the Emergency Department and had been since the

pandemic. We also suggested rotating pillowcases and slipcovers for the weighted blankets and weighted stuffed animals for a more cost-efficient method that still resulted in quick turnaround between methods. Both pillowcases, slipcovers, and the ultraviolet wand focus on prompt sanitation between patients while still following infection control standards.

The second barrier that we talked through at Coastal Plains was how to educate newly hired medical professionals without having to hire a trained professional to come teach often. After much discussion, we recommended that a health care provider trained on sensory modulation can record virtual training sessions to instruct newly hired healthcare employees on comfort room use. We also suggested that questions can be added at the end of the training modules to ensure the new hires are competent enough to use the sensory rooms.

Conclusion

Throughout my project, it is clear that sensory modulation is the best method to reduce aggressive episodes in psychiatric patients. In addition to this, implementing sensory modulation rooms in acute psychiatrics settings yields the best outcome for patients experiencing negative behaviors. Because sensory modulation is the least restrictive practice that proves to produce positive results, it is essential that health care professionals are aware of this option and do everything in their power to implement this intervention as a priority.

References

- Adams-Leask, K., Varona, L., Dua, C., Baldock, M., Gerace, A., & Muir-Cochrane, E. (2018). The benefits of sensory modulation on levels of distress for consumers in a mental health emergency setting. *Australasian psychiatry*, *26*(5), 514-519.
<https://doi.org/10.1177/1039856217751988>
- Baldaçara, L., Ismael, F., Leite, V., Pereira, L. A., Dos Santos, R. M., Gomes Júnior, V. P., Calfat, E., Diaz, A. P., Périco, C., Porto, D. M., Zacharias, C. E., Cordeiro, Q., da Silva, A. G., & Tung, T. C. (2019). Brazilian guidelines for the management of psychomotor agitation. Part 1. Non-pharmacological approach. *Revista brasileira de psiquiatria (Sao Paulo, Brazil : 1999)*, *41*(2), 153–167. <https://doi.org/10.1590/1516-4446-2018-0163>
- Brown, A., Tse, T., & Fortune, T. (2018). Defining sensory modulation: A review of the concept and a contemporary definition for application by occupational therapists. *Scandinavian journal of occupational therapy*. <https://doi.org/10.1080/11038128.2018.1509370>
- Celofiga, A., Kores Plesnicar, B., Koprivsek, J., Moskon, M., Benkovic, D., & Gregoric Kumperscak, H. (2022). Effectiveness of De-Escalation in Reducing Aggression and Coercion in Acute Psychiatric Units. A Cluster Randomized Study. *Frontiers in psychiatry*, *13*, 856153. <https://doi.org/10.3389/fpsy.2022.856153>
- Lancaster, Wanda. (November 2018). *Implementation of a Sensory Modulation Room on an Acute Care Psychiatric Unit* (DNP Scholarly Project, East Carolina University). Retrieved from the Scholarship. (<http://hdl.handle.net/10342/7002>.)

Scudamore, T., Liem, A., Wiener, M., Ekure, N. S., Botash, C., Empey, D., & Leontieva, L. (2021). Mindful Melody: feasibility of implementing music listening on an inpatient psychiatric unit and its relation to the use of as needed medications for acute agitation. *BMC psychiatry*, 21(1), 132. <https://doi.org/10.1186/s12888-021-03127-z>