

RESEARCH REPORTS

SUPPORTING PERSONS WITH SENSORY NEEDS THROUGH THE CREATION AND IMPLEMENTATION OF BEARY CALM BAGS IN CONJUNCTION WITH A LOCAL FIRE DEPARTMENT

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ABSTRACT

First responders represent the initial point of contact within the healthcare system, playing a vital role in providing timely care. Sensory dysregulation and communication challenges can affect individuals across the lifespan, often resulting in barriers to accessing and receiving effective care. This pilot study examined the implementation of BEary Calm Bags, sensory regulation bags containing various sensory and communication tools created by occupational therapists, for use by first responders during emergencies with individuals with these challenges. First responders received educational interventions focused on supporting people experiencing sensory and/or communication needs during emergencies. Quantitative and qualitative data were collected from eight first responders to determine perceptions regarding use, effectiveness, and sustainability of the bags. Approximately 87% of participants found the bags beneficial, with 75% using them multiple times. These findings suggest the BEary Calm Bags may support first responders in moving towards delivering more equitable, patient-centered care, while helping to reduce barriers related to healthcare inequities.

INTRODUCTION

People with disabilities are more likely to experience healthcare inequities and are at a greater risk of developing physical and mental health conditions such as stroke, diabetes, obesity and depression (Centers for Disease Control and Prevention, 2024; Clemente et al., 2022; Iezzoni & Agaronnik, 2020; World Health Organization, 2023). Common barriers individuals with disabilities encounter when accessing healthcare services include communication challenges with healthcare professionals, insufficient resources, a lack of training among healthcare professionals, and stigmatization and negative attitudes among healthcare workers. Individuals with sensory processing, and emotional regulation challenges encounter similar barriers to accessing healthcare as people with other conditions, but they also experience obstacles including difficulties with emotion regulation, and sensory processing (Raymaker et al., 2017). Emotion regulation challenges can lead to elevated responses to stressors in healthcare environ-

ments, resulting in communication barriers such as difficulty expressing pain, concerns, and needs. Sensory processing difficulties, such as hypersensitivity to light, sound, or touch, can also contribute to an overwhelming and inaccessible healthcare experience. In addition to individuals with Autism Spectrum Disorder (ASD), people across the lifespan who experience sensory processing and/or communication difficulties because of a mental health condition, neurocognitive condition (e.g., dementia), and/or a sensory processing disorder (SPD) may also encounter significant difficulties during emergencies due to similar barriers that individuals with ASD experience. These create substantial obstacles to receiving adequate care and can contribute to inequities in their healthcare access and quality, which results in the need for interventions to address this gap in care and to improve outcomes (Raymaker et al., 2017).

Obstacles frequently occur during the prehospital phase. Individuals may experience heightened sensory stimuli when receiving care from emergency medical services (EMS) due to any of the following factors: flashing lights, loud sirens, touch from first responders during interventions, confined spaces, and chaotic surroundings. Limited communication techniques by first responders and their lack of training on how they can best assist populations who experience difficulty regulating this sensory input can lead to sensory and emotional dysregulation among individuals, ultimately hindering the provision of appropriate and effective care (Cheung et al., 2019). Safety and well-being can be compromised in this situation and demonstrate the critical need for educational interventions for first responders focused on communication strategies and tools to support vulnerable populations with sensory processing difficulties. Developing and implementing interventions to target these areas would also assist with reducing healthcare inequities and barriers and could promote inclusivity in healthcare while improving the quality of care (Cheung et al., 2019; Lombardi et al., 2024).

LITERATURE REVIEW

OVERVIEW OF SENSORY PROCESSING

Sensory processing is a neurological process focused on how individuals gather information about their world including their environment and bodies (Brown et al., 2019). It involves the way in which an individual's brain receives, organizes, and responds to sensory input during their daily interactions from all senses, to facilitate effective engagement and interaction within both physical and social environments. Sensory processing involves several steps and begins with the nervous system detecting sensory stimuli or inputs. During this first step, some individuals may be hyper- or hyporesponsive, demonstrating increased or decreased sensitivity to a given sensory stimulus. Step two involves the brain recognizing or clarifying a particular stimulus while step three is when meaning is assigned to the information/input received. Finally, an unconscious or conscious behavioral response occurs, such as covering ears due to the discomfort of loud noises or a slight body jerk triggered by an intense and sudden sound (Brown et al., 2019). Sensory dysregulation is considered a general term referring to a person having difficulty regulating their sensory experiences and can lead to an individual displaying over or under-responsiveness to sensory stimuli. Sensory dysregulation may present with behavioral responses that include emotional distress, withdrawal, and communication challenges. Sensory modulation is a critical component of sensory processing and is a person's ability to self-regulate their reactions to sensory input in an appropriate man-

ner (Brown et al., 2019; Champagne, 2011; May-Benson & Schaaf, 2015). Sensory modulation difficulty is a specific type of sensory dysregulation where a person has challenges with appropriately filtering and adjusting to sensory input, resulting in an over- or underreaction, that others may find typical.

POPULATIONS AT-RISK FOR SENSORY DYSREGULATION

Sensory modulation is often a challenge for children and adults with SPD and/or mental health conditions such as attention-deficit-hyperactivity disorder (ADHD), ASD, post-traumatic stress disorder (PTSD), developmental trauma, mood disorders, schizophrenia and schizoaffective disorders, intellectual and/or developmental disabilities, obsessive-compulsive disorder, and neurocognitive disorders (Brown et al., 2019). There are similarities in how these individuals may experience and present with sensory modulation difficulties; however, various conditions have slightly different presentations. For example, when children or adults with ADHD experience sensory modulation difficulties, they have difficulty attending to pertinent information while also filtering out irrelevant sensory stimuli, which can lead them to display excessive movement, noise or avoiding situations. Persons with ASD may also present with variable responses to sensory stimuli such as actively seeking sensory input or displaying hypersensitivity or hyposensitivity throughout their daily routine. Children and adults with histories of developmental or early childhood trauma such as abuse or neglect may have difficulty filtering and adjusting to sensory input. This is largely due to the experience of trauma impacting early childhood brain development, resulting in difficulty with self-regulating. Difficulties with sensory modulation may present as hyperarousal or hypoarousal. They may also have triggers that are related to sensory input that can lead to over- or underreaction and may present as being easily overwhelmed, shutting down, demonstrating strong emotional reactions, or displaying hypervigilance. This presentation is similar to individuals who have PTSD. Adults with schizophrenia can also present with sensory modulation difficulties, primarily with determining between important and unimportant sensory information in their environment, which can lead them to feeling confused, overwhelmed, or appearing distracted. In some instances, this may lead to behaviors such as social withdrawal. Mood disorders can also be accompanied by sensory modulation difficulties with individuals potentially being more sensitive to sensory input when experiencing a depressive episode or seeking sensory stimuli during mania (Brown et al., 2019).

ROLE OF OCCUPATIONAL THERAPY

Occupational therapy is a holistic and client-centered healthcare profession that works with people across the lifespan to maximize their engagement in meaningful occupations, which are activities people want and need to do in daily life (American Occupational Therapy Association (AOTA), n.d.; AOTA, 2020). Occupations may include but are not limited to activities of daily living (e.g., dressing, feeding, bathing, hygiene), work, education, sleep and rest, leisure, socialization, instrumental activities of daily living (e.g., household tasks, money management, driving or using community transportation), play, and health management (e.g., coping and managing mental and/or physical health conditions, attending medical appointments) (AOTA, 2020). Occupational therapy practitioners (OTPs) assist people with living “life to its fullest” by promoting their health and enhancing their ability to manage and cope with an injury, disability, or illness (AOTA,

n.d.). OTPs also aim to enhance individuals to live their lives with greater independence (AOTA, n.d.; National Library of Medicine, 2024). Within occupational therapy's broad scope of practice, sensory processing and modulation are areas OTPs have expertise in and are skillful in addressing (AOTA, 2020). OTPs utilize a holistic approach, which entails adapting a person's environment and/or task to best meet the unique needs of an individual, to promote a person's level of independence during daily activities (AOTA, n.d.; AOTA, 2020).

OTPs recognize that difficulties in sensory processing and modulation can impact performance and engagement in meaningful occupations. OTPs are qualified and trained in how to appropriately assess and address sensory processing difficulties (AOTA, 2020). They utilize evidence-based interventions and facilitate skill development, to support an individual's ability to function optimally in their environment, during daily tasks and situations. This includes providing tools and skills to effectively interpret and respond to sensory stimuli. OTPs utilize a client-centered and holistic approach to consider how sensory processing difficulties may impact a person's daily function and overall quality of life. Considering OTPs' expertise in this area, they are key professionals in developing and integrating sensory-based interventions and programming. They utilize evidence from the existing body of literature and clinical expertise while also incorporating sensory processing theories they are well versed in to develop tailored interventions for individuals and populations in various settings with the goal of maximizing their daily functioning and overall quality of life.

SENSORY DYSREGULATION DURING EMERGENCY SITUATIONS & EVIDENCE-BASED INTERVENTIONS

Emergency situations for pediatric and adult populations can be overwhelming and potentially lead to unproductive and/or unsafe interactions between the patient and the healthcare provider, if there are no tools or strategies to support their interactions. Examples of sensory stimuli people may encounter may include the following: bright flashing lights, equipment alarm sounds (e.g., buzzing, beeping, or alert sounds), quick movements that can be disorienting (e.g., ambulance moving fast, turning and stopping abruptly), strong odors (e.g., from disinfectants, medical supplies, bodily fluids), sudden temperature changes (e.g., opening of doors), loud sirens, and physical contact from first responders during interventions and procedures. Persons with sensory modulation difficulties, may experience increased distress, discomfort, and challenges with self-regulation when they encounter such unexpected stimuli and sensory demands. While sensory dysregulation alone can lead to communication challenges, several of the conditions discussed previously can also result in communication difficulties, all of which may hinder their ability to express needs, understand instructions, or effectively engage with first responders or healthcare providers.

To assist with meeting the needs of persons with sensory processing difficulties, sensory interventions have been primarily employed in emergency departments. Modifying emergency departments to create a sensory-friendly environment has been successful in meeting patients' needs during stressful events (Wood et al., 2019). Sensory aids have also improved the healthcare experience for patients and caregivers within emergency departments (Roy et al., 2024).

First responders' limited training in strategies to effectively interact with patients with communication and/or sensory processing difficulties can hinder the provision of appropriate and effective care (Cheung et al., 2019). Despite this critical need, there are few studies within the current body of literature focused on sensory interventions during prehospital care. Ben's Blue Bags is one example of a successful program that has been implemented prehospitally for first responders to utilize during sensory and communication obstacles. Each bag included sensory and communication tools such as noise-reduction headphones, a dry erase board for communication needs, a visual for indicating pain levels and location, and various sensory tools (e.g., stress balls, bendable bracelets, pop-it fidgets, fidget spinners, and Rubik's cubes) (Lombardi et al., 2024). Sensory and communication aids have been effective in improving prehospital care, allowing first responders to provide tailored and successful care to individuals with unique sensory needs in emergency situations (Lombardi et al., 2024; Shah et al., 2020). Developing and implementing similar interventions to target sensory and communication obstacles could assist with reducing healthcare inequities and barriers while also promoting inclusivity in healthcare and improving the quality of care (Cheung et al., 2019; Lombardi et al., 2024). Providing first responders with education on sensory processing and communication challenges, and tools they can utilize to assist with such obstacles may assist with addressing this current gap in care.

STUDY PURPOSE

Based on the current literature, this study sought to provide training for first responders and sensory regulation tools for populations who present with sensory dysregulation during an emergency response within a local community, to address this gap in care. The BEary Calm Bags (Morin & Wells, 2025) were established and developed as a pilot project through a community-based collaboration titled, BEary Calm Bags. These bags included various sensory regulation tools and communication aids to be utilized during emergency responses by one fire department in Massachusetts. The objective of this pilot program was to determine first responders' perceptions regarding the use, effectiveness, and sustainability of the BEary Calm Bags during emergency responses.

METHODS

This pilot study includes program development and creation of the BEary Calm Bags followed by piloting the implementation of the bags. This pilot study was approved by the affiliated university's Institutional Review Board (IRB). One of the researcher's is related to a member of the department where the program was piloted.

PROGRAM DEVELOPMENT

Initial approval and financial support of this pilot project proposal were granted by the Department Chair and Program Director of the Entry-Level Doctor of Occupational Therapy (OTD) Program at the university where the researchers were employed. The budget consisted of potential items that would be placed in the BEary Calm Bags and included the cost for 12 total bags.

Following the Department Chair and Program Director's approval and allocation of funding for this project, a local fire department in Massachusetts located in a suburban area was identified as a potential community site to partner with. Communication and

was initiated with the fire department's chief, assistant chief, and EMS lieutenant to discuss collaboration and the project proposal. Although initial funding to pilot the 12 bags was to be provided by the occupational therapy department, it was explained that this project required approval from the university's IRB, as data collection would be conducted to support future grant applications to aid in ensuring the project's sustainability. The fire department's personnel were all in agreement with the project proposal and receptive to implementing the pilot program to support first responders' delivery of care to community members.

Three cohorts of OTD students within the program were informed of the opportunity to collaborate with the primary investigators on this pilot project. Information explaining the purpose of this project and the specific areas students could assist with was sent via email. Students were encouraged to contact the primary investigators if they were interested in pursuing this opportunity, which led to three students working closely with the primary investigators. The students were tasked with developing visual aids with communication and sensory tools for first responders to utilize. Visual aids went through several revisions following researcher feedback. A 10-minute video and written guide were developed in collaboration with the researchers to train first responders on the following: conditions associated with sensory and/or communication difficulties, the purpose of each tool to be provided within the BEary Calm Bags, when they might offer and utilize each tool, and how the items connect to sensory modulation and communication. The training video and written guide also outlined safety precautions of each item to enhance first responders' knowledge of appropriate uses of each tool.

IMPLEMENTATION OF BEARY CALM BAGS

The primary investigators provided the EMS administration with the training tools to disseminate to first responders and ensure completion of the training. All items within the bags were applicable to pediatric and adult populations. A total of 12 BEary Calm Bags were distributed to one local fire department located in a suburban area in Massachusetts across the department's three ambulances. When patients arrived to the emergency department, they were able to keep the items within the bags for their continued personal use in the future.

The EMS Lieutenants encouraged any first responder who utilized or attempted to implement any item within the bag to complete the informed consent and the researcher-generated post-implementation survey. The survey was distributed to first responders via email six-weeks after the initial implementation of the BEary Calm Bags. Qualitative and quantitative data were collected in the survey to determine the frequency of items utilized within the bag, the overall effectiveness of the bags during patient interactions, and any recommendations to improve the quality and contents of the bags.

DATA ANALYSIS

The quantitative data were analyzed using descriptive statistics in Microsoft 365 Excel. The two investigators independently analyzed the raw qualitative data to generate initial keywords and codes. The investigators then discussed and compared their codes to develop relevant themes, to assist with decreasing biases and enhancing the accuracy of the results. Discrepancies related to codes and themes were resolved through discussion

between the investigators. Final themes and supporting quotes were determined collaboratively.

RESULTS

QUANTITATIVE RESULTS

Eight first responders consented to participate and completed the survey. The bags were used two or more times by 75.0% of respondents ($n = 6$) in the six-week span. Only one first responder had not yet used the BEary Calm Bag during an emergency response during this period. Please see Table 1 below for a visual depiction of how frequently first responders utilized the BEary Calm Bags with patients. Of the first responders who had used the BEary Calm Bags, 87.5% ($n = 7$) indicated “yes” the BEary Calm Bags were beneficial during an emergency response. The most frequently used items from the bags were the pop-it fidgets ($n = 6$), followed by the pinwheels ($n = 3$), sunglasses ($n = 2$), and headphones ($n = 2$). Please see Figure 1 below for an illustration of additional details regarding first responders’ use of the tools included in the BEary Calm Bags.

Number of Times Used	Number of Participants
0	1
1	1
2	3
3	2
4	1

Table 1. Frequency of BEary Calm Bag usage among first responders.

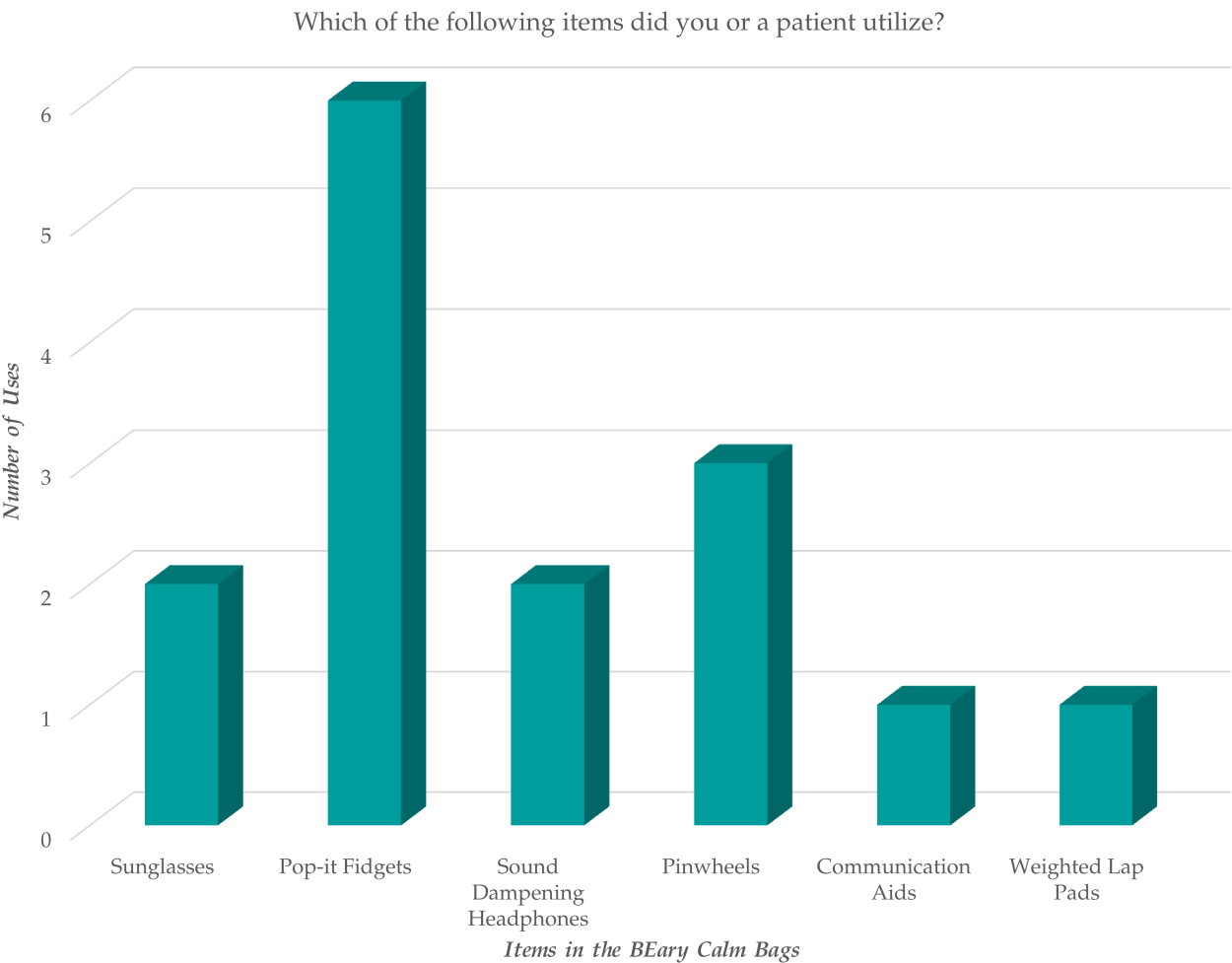


Figure 1. Frequency of item usage in BEary Calm Bags among first responders.

QUALITATIVE RESULTS

Qualitative data analysis garnered two central themes from the open-ended responses. First, the BEary Calm Bags allowed for better patient care. One participant indicated the items, such as the communication aids, “allow [sic] us to better understand what is going on with a patient who may not be able to communicate verbally.” Further, calming and distracting was identified as the second theme. Several respondents commented on how the BEary Calm Bags assisted in calming patients and were particularly helpful in distracting the patients when performing critical assessments and interventions. Examples of supporting quotes for the themes can be found below in Table 2.

Theme	Sample Quotes
Allows for Better Patient Care	• “Distracts the patients from what is going on and allows for a more in-depth assessment.” • “The communication sheet really help get a sense of the amount of pain they are in, and also allows us to better understand what is going on with a patient that may not be able to communicate verbally.” • “Allowed EMS to perform necessary interventions.” • “The kits help us provide care when dealing with specific populations of our patients during an over stimulating experience such as a medical emergency.”
Calming and Distracting	• “It helps calm a patient.” • “Calmed the patient at the time.” • “Distracts the patients from what is going on.”

Table 2. Thematic analysis of data.

When asked to identify the item(s) first responders found most useful for patients, they commonly cited the pop-it fidgets as particularly beneficial. Several respondents also noted the overall usefulness of all items included in the BEary Calm Bags. In addition to the pop-it fidgets, weighted lap pads, pinwheels, headphones, and communication aids were also mentioned as valuable supports during EMS patient interactions. Finally, first responders also provided feedback on improving the quality and items within the bags. They expressed that the variety of items included was valuable, as it provided an opportunity for patients to select tools that best suited their needs.

DISCUSSION

This pilot study aimed to determine first responders’ perceptions of the BEary Calm Bags, including the frequency of bag and item utilization, their overall effectiveness during patient interaction, and recommendations for enhancing the quality of the bags to support sustained use in the prehospital care phase. Six out of the eight participants had utilized the BEary Calm Bags at least two or more times, and seven out of the eight participants identified the bags as valuable during an emergency response.

The results of this pilot program indicate that the BEary Calm Bags helped support sensory regulation of patients, enabling first responders to provide effective interventions during emergency response situations. This overarching finding aligns with existing literature on the benefits of incorporating sensory and communication aids to enhance prehospital care and to deliver care tailored to individuals with diverse sensory needs during emergency situations (Lombardi et al., 2024; Shah et al., 2020). Although this study focused specifically on the use of sensory and communication aids during pre-hospital care with first responders, prior research demonstrates that sensory and com-

munication interventions also enhance healthcare experiences for patients and their care partners in emergency department settings (Roy et al., 2024). This similarity suggests that addressing sensory needs across different phases of emergency care could contribute to overall enhancements in patient outcomes and satisfaction.

Sensory sensitivity is not confined to one demographic and can occur across the lifespan. It is also a highly individualized experience, and failure to adequately address people's sensory needs can create substantial barriers to access and delivery of quality care, negatively impacting their healthcare experiences. First responders have limited training in supporting individuals experiencing sensory dysregulation and communication challenges, which may impact their ability to deliver effective care (Cheung et al., 2019). Equipping first responders, who are often the initial point of healthcare contact, with this training addresses a critical gap in care related to equitable access and quality of care for people with diverse sensory and communication needs. This aligns with literature emphasizing that educational interventions focused on addressing sensory and communication challenges can enhance equitable access and quality of care (Cheung et al., 2019; Lombardi et al., 2024). Incorporating sensory and communication tools during patient interactions also aligns with broader efforts in healthcare and supports the objectives of the Healthy People 2030 framework by aiming to reduce inequities and obstacles experienced by patients with diverse disabilities (Office of Disease Prevention and Health Promotion, n.d.).

LIMITATIONS

Although this pilot program yielded positive results, there are several limitations to this study that may have impacted the outcomes. The first limitation is the relatively small sample size, limited to participants from a single department located within one geographic location in Massachusetts. This may restrict the generalizability of the findings. The small sample size was further limited by difficulty collecting extensive data. This department has a high EMS call volume and first responders are responsible for immediate call documentation, which limits their opportunities and access to monitor their emails regularly. This may have impacted their ability to readily access the consent and survey link to complete following each use of the BEary Calm Bag. Additionally, the training was provided via asynchronous materials to offer flexibility and accessibility. However, this may have led to decreased buy-in and carryover from the first responders. Participants must fulfill other extensive state and department-mandated training requirements, which can further restrict their available time to complete additional training. Advocating for and integrating sensory tools into standard emergency protocols may assist with better training adherence and support sustained use of the bags. It would also be beneficial to continue data collection beyond the six-weeks to determine the efficacy of long-term use and implications of the BEary Calm Bags.

IMPLICATIONS

Several key implications for clinical practice and research from this pilot project emerged. For OTPs and other healthcare practitioners working to support individuals who may experience sensory dysregulation or communication difficulties in the community, this project indicates the potential for utilizing and expanding these sensory-informed practices across other areas and settings. For example, this program could be

expanded to include additional emergency response and care settings such as other fire and police departments, emergency departments, physicians' offices, residential group homes. The findings also display the critical value and necessity of standardized training protocols for EMS first responders. Furthermore, it would be beneficial to deliver training materials both synchronously and asynchronously, as opposed to solely asynchronous delivery, which was a limitation of the current project. There are implications for future research based on the initial results of this pilot project, which include the need for replication of the project with longitudinal data collection and analysis. Based on the qualitative data collected, it may be beneficial to collect additional data on how sensory-based intervention initiatives foster inclusivity and accessibility within emergency response systems and promote equity in healthcare.

CONCLUSION

Results of this pilot program revealed that community-based initiatives such as the BEary Calm Bags may provide meaningful assistance to first responders during an emergency response, by calming and distracting a patient experiencing sensory dysregulation. The findings from this pilot initiative highlight the potential for incorporating sensory and communication tools to reduce healthcare inequities and barriers, thus promoting inclusive and equitable care regardless of patients' sensory needs. Future opportunities include expanding this type of initiative into other potentially dysregulating community-based settings such as emergency departments, physician offices, or residential group homes. The limitations in this study also result in the need for additional research on this topic from a longitudinal standpoint. However, it is important to emphasize the value that the BEary Calm Bags can have, based on preliminary data on improving healthcare equity and minimizing barriers for individuals with various sensory needs.

REFERENCES

- American Occupational Therapy Association. (n.d.). *About occupational therapy*. Accessed from: <https://www.aota.org/career/become-an-ot-ota/about-the-profession>
- American Occupational Therapy Association. (2020). Occupational therapy practice framework: Domain and process (4th ed.). *American Journal of Occupational Therapy*, 74(Supplement 2), S1-S87. <https://doi.org/10.5014/ajot.2020.74S2001>
- Centers for Disease Control and Prevention. (2024). *Disability and health information for healthcare providers*. Accessed from: <https://www.cdc.gov/disability-and-health/about/disability-and-health-information-for-healthcare-providers.html>
- Champagne, T. (2011). *Sensory modulation & environment: Essential elements of occupation* (3rd ed.). Pearson.
- Cheung, V., McCarthy, M. L., Cicero, M. X., Leventhal, J. M., & Weitzman, C. (2019). Emergency medical responders and adolescents with autism spectrum disorder. *Pediatric Emergency Care*, 35(4), 272- 277. <https://doi.org/10.1097/pec.0000000000001322>
- Clemente, K. A. P., Vieira da Silva, S., Vieira, G. I., Carla de Bortolil, M., Toma, T. S., Ramos, V. D., & Moran de Brito, C. M. (2022). Barriers to the access of people with disabilities to health services: A scoping review. *Revista de Saúde Pública*, 56(64), 1-15. <https://doi.org/10.11606/s1518-8787.2022056003893>

- Iezzoni, L. I., & Agaronnik, N. D. (2020). Healthcare disparities for individuals with disability: Informing the practice. In L. M. Meeks & L. Neal-Boylan (Eds.), *Disability as diversity: A guidebook for inclusion in medicine, nursing, and the health professions* (pp. 15-31). Springer. <https://doi.org/10.1007/978-3-030-46187-4>
- Lombardi, E., Lepore, F., & Greer, C. (2024). Improving emergency medical services (EMS) care for people with autism in the prehospital setting through sensory and communication aids. *Cureus*, 16(11), e74702. <https://doi.org/10.7759/cureus.74702>
- May-Benson, T. A., & Schaaf, R. (2015). Ayres sensory integration. In I. Söderback (Ed.), *International handbook of occupational therapy interventions* (2nd ed., pp. 633-647). Springer International Publishing.
- Morin, A. M. F., & Wells, E. K. (2025). *BEary Calm Bags* [Intervention program].
- Office of Disease Prevention and Health Promotion. (n.d.). *Healthy People 2030 Framework*. U.S. Department of Health and Human Services. Accessed from: <https://odphp.health.gov/healthypeople/about/healthy-people-2030-framework>
- National Library of Medicine. (2024). *In brief: What is occupational therapy?* U.S. Department of Health and Human Services. <https://www.ncbi.nlm.nih.gov/books/NBK561515/>
- Raymaker, D. M., McDonald, K. E., Ashkenazy, E., Gerrity, M., Baggs, A. M., Kripke, C., Hourston, S., & Nicolaidis, C. (2017). Barriers to healthcare: Instrument development and comparison between autistic adults and adults with and without other disabilities. *Autism*, 21(8), 972–984. <https://doi.org/10.1177/1362361316661261>
- Roy, M. A., Kinlin, C., Estes, M., & MacEachern, S. J. (2024). The path to quality & safety improvement improving patient-centered care in the emergency department: Implementation of a sensory toolkit for children with autism. *Pediatrics & Child Health*, 29, 199–204. <https://doi.org/10.1093/pch/pxae010>
- Shah, N., Hert, K., & Klasner, A. E. (2020). Increasing comfort with sensory processing difficulties in the prehospital setting: Pre-post study of education and sensory tools in EMS providers. *Southern Medical Journal*, 113(2), 59-63. <https://doi.org/10.14423/smj.0000000000001063>
- Wood, E. B., Halverson, A., Harrison, G., & Rosenkranz, A. (2019). Creating a sensory-friendly pediatric emergency department. *Journal of Emergency Nursing*, 45(4), 415-424. <https://doi.org/10.1016/j.jen.2018.12.002>
- World Health Organization. (2023). *Disability*. Accessed from: <https://www.who.int/news-room/fact-sheets/detail/disability-and-health>