Understanding Neonatal Abstinence Syndrome: Treatment Strategies for Caregivers

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**Identified Need**

The state of West Virginia has been significantly impacted by the opioid epidemic. Rates of Neonatal abstinence syndrome (NAS) have increased over the years and WV has had one of the highest rates of NAS for the past several years. The Centers for Disease Control and Prevention (2024) reports that the number of infants born with NAS in the United States increased by 82% from 2010 to 2017. In 2020, rates of NAS were 88.1 per 1000 births in WV (West et al., 2023). Rates of NAS have decreased some over the past few years, but WV remains one of the states with the highest rates of NAS. The most recent statistics by the Perinatal Partnership (2025) indicate that 50 per 1000 babies born in WV are diagnosed with NAS, which is higher than the national rate of 7 per 1000 births.

Neonatal abstinence syndrome is a public health concern. Intrauterine exposure in infants is linked with poor health outcomes such as poor fetal growth, preterm birth, still birth, specific birth defects (Yen & Davis, 2022). When working with children with NAS, occupational therapists provide support for withdrawal symptoms, feeding, assist with self-regulation skills, help manage sensory processing deficits, and educate parents and caregivers on creating a calm environment (Oostlander et al., 2019).

**Audience**

The audience for this education session is foster parents and caregivers who have an infant or toddler with a diagnosis of NAS. This training would be hosted by a local foster care agency. Foster care agencies are frequently inquiring about educational presentations and would be a great resource in locating families who could benefit from strategies to support children with NAS.

**Caregiver Learning Objectives**

1. Caregivers will recognize three signs and symptoms of NAS.​
2. Caregivers will identify one strategy that they learned during the presentation to calm an infant.

**Occupation-Based Instructional Materials and Methods**

This education session occurred over a period of 60 minutes. The first twenty minutes of the session focused on the PowerPoint presentation educating caregivers with an overview of NAS and pertinent treatment strategies. An instructional infant massage video is played during the presentation for three minutes and thirty-three seconds. The PowerPoint presentation is proceeded by a 20-minute lab with the occupational therapist (OT) demonstrating the infant massage techniques for 5 minutes and 15 minutes for the participants to practice and ask questions regarding their technique. During the last twenty minutes of the session, caregivers filled out a short quiz and asked any additional questions.

Materials needed for the session include the PowerPoint presentation, occupational therapy parent/caregiver brochure about the benefits of OT for children with NAS, massage oil, massage lotion, 12-inch and 18-inch baby dolls to serve as a model for the infant massage demonstration for the speaker and for parents whose child are not present for the session, and the quizzes. The education session is held in the foster care agency conference room, so the technology needs for the presentation are supplied by the agency. Calming music is played in the background to relax the infants and the participants.

Various aspects of the educational setting can support or discourage learning. The learning environment should not be overstimulating. It should be a safe space for asking questions. The setting determines the population of the clients, so it is important to consider demographic information of the client and any culturally relevant information such as the native tongue of the client and if they are proficient in speaking English. A translator would be recruited for the education session if there are caregivers present with a limited English proficiency (Bastable et al., 2020).

**Universal Design for Learning (UDL) Principles**

I have adapted the educational materials to use simple language and terminology, and I have used visual demonstration and visual aids to enhance learning (Bastable et al., 2020). A video demonstration of infant massage is displayed during the presentation. The PowerPoint presentation and the caregiver brochure were created with consideration of the client’s health literacy level, environment, and culture (CAST, 2024). I focused on using simple language during the education session. I asked the client to demonstrate the strategy after I have coached them on the technique. When providing new strategies to clients, I only give them a few strategies at a time to ensure that I do not overwhelm them, and I discuss with them how they will incorporate strategies into their daily activities. I also ask the family what strategies are working for them, and which ones aren’t. The biggest challenges that I encounter when providing education to clients are limited knowledge and understanding, varying learning styles, parents who are stressed, cultural differences in perceptions about receiving services. Depending on the challenge, I modify my approach and I always try to first establish a rapport with the parent to develop trust and mutual respect. I ask the parent about their preferred learning style to maximize learning retention (Bastable et al., 2020).

Demonstration-return demonstration is my preferred teaching method when teaching psychomotor skills because it is a highly effective strategy for teaching hands on skills (Bastable et al., 2020). Demonstration-return demonstration allows for recruitment of multiple senses to enhance learning and cater to learning styles of the student. Demonstration-return demonstration allows the instructor to provide verbal and tactile cues to the caregiver as they are learning the skill. I feel that demonstration-return demonstration is the most favorable teaching strategy for teaching hands on skills because speaking and doing increases retention for the learner (Bastable et al., 2020).

Two Universal Design for Learning concepts that I utilized are offering action-oriented feedback and connecting prior knowledge to new learning (CAST, 2024). I offer action-oriented feedback when using verbal coaching to instruct the caregiver on how to do infant massage by providing feedback immediately after the caregiver initiates the technique praising them for what went well and giving constructive feedback in simple terms on how to improve. I also suggest that the massage techniques are completed during the family’s daily routines such as after bath time, before bedtime/naptime, or following diaper changes.

It is essential to connect prior knowledge to new learning when providing parent education to caregivers (CAST, 2024). I utilize this principle when any new technique is presented. I ask the caregiver group if any of the participants have ever given or received a massage. I relate to the group that infant massage is similar to contemporary massage therapy techniques, but it is important to provide firm but gentle strokes to the infant or toddler when doing infant massage. I also coach the caregivers to be mindful of the infant’s cues for signs that they are not tolerating the strokes or if they are hungry, it would be more appropriate to do the infant massage at a different time (Hahn et al., 2016).

**Description of Outcome Measurement**

Outcome measures are paramount for clients, stakeholders, payor sources, and the community to ensure that effective practices are taking place and clients are improving functional outcomes.

The primary outcome measure for this education session is a short quiz to determine if the participants have learned to recognize a few signs of NAS and if they are able to identify one treatment strategy. A pre-test and post-test model could be used to determine if the participants have gained new knowledge after the education session. Demonstration-return demonstration is provided after the PowerPoint presentation to ensure that participants are proficient and comfortable with their techniques for infant massage.

This education session was devised to meet a need in the community to serve children with NAS with positive caregiver experiences that can be transferred to the home setting. A multiple-choice quiz provided a reliable measure that the learning objectives were achieved. Simple language was used during the session to facilitate retention of the materials. This education session was developmentally and culturally relevant and provided instruction that will foster the infant and caregiver bond.

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