

Question:

In the pediatric population, how effective is providing comfort measures such as using buzzy bee, administering lidocaine for numbing, implementing distractions, or using the J-tip during intravenous catheter placement to ease patient pain compared to withholding comfort interventions during IV insertion?

Summary:

When working in Pediatrics, any needle insertion procedures can be intimidating to our young patients. "I.V. catheter placement is one of the most common causes of procedural pain in children" (Schott, 2021). Not only does this procedure cause pain and anxiety in the patients, but can also be troubling to the families and the nurse inserting the I.V. As stated in the article, *A Vibrating Cold Device to Reduce Pain in the Pediatric Emergency Department*, "when describing worst pain experiences in hospitalized children, IV insertion was found to be second only to pain related to the patient's underlying disease" (Potts, 2019). When comfort measures are taken during insertion of an I.V., it can result in a better patient experience during hospitalization. One method includes a vibrating cold device that is called Buzzy. This device looks like a bee which can help distract the children. The wings of this device are ice packs which help to block pain and any sharp sensations that might be felt. This device has had great success as a nonpharmacological pain intervention. However, as stated in the article *Comfort Measures for Peripheral I.V. Catheter Placement in Children*, "these interventions are often chosen for their convenience rather than their effectiveness" (Schott, Brown, Vittone, 2021). As for pharmacological interventions, there are a few options. Some common interventions include EMLA cream, which is lidocaine and prilocaine, ELA-Max, which is liposomal lidocaine, or needle free insertion of lidocaine using the J-tip. The J-tip is a needless device that causes no pain and will disperse the medication throughout the tissue and allow for quick absorption. This works by using carbon dioxide gas that pushes the medication into the subcutaneous tissue without the use of a needle. This is a great option for children who are having an I.V. placed, as it acts fast and will not cause pain to the patient. "A 2006 study comparing the J-Tip to EMLA in children ages 7 through 19 years reported that 80% of the children experienced no pain with jet injectable lidocaine, a significant difference compared with the 61% who rated no pain with EMLA" (Schott, Brown, Vittone, 2021). EMLA cream or ELA-Max are also an effective option, but patients still have experienced pain with I.V. insertion even after having these medications applied. However, without any of the interventions, nonpharmacological and pharmacological, patients have reported pain, distress, and anxiety. It is our priority to ensure a safe, beneficial patient experience and this includes ensuring that our patients experience minimal to no pain during any procedure. When we have the tools and medication to provide a pain free procedure, we should be using them to prevent any future trauma that can be the result of previous hospital experiences. Therefore, as nurses we should be implementing these interventions to relieve our patients of any distress. In the research article titled, *A randomized trial of robot-based distraction to reduce children's distress and pain during intravenous insertion in the emergency department*, they studied the effectiveness of providing distraction using a talking robot to see if it would reduce pain and distress during I.V. insertion. In this study, all children received the topical anesthetic cream, but the patients selected for the study received the robot

intervention during I.V. insertion. In this article it states, “The robot was programmed for children 6–11 years, using cognitive behavioral therapy-based strategies, and the same programming was delivered to all children. The robot began by introducing itself and asking the child to join in some simple activities, followed by deep breathing exercises. Following completion of the procedure, the robot made supportive comments stating how brave the child was, proceeded to dance to a popular song, and finished with a demonstration of Tai Chi” (Ali, 2020). To have this type of distraction can be very beneficial to the child, because it takes their mind off of the procedure taking place. After this study, they rated the child’s distress, the child’s pain, and the parental anxiety and satisfaction. In the children who received the robot in their room, 93% of parents were satisfied with the distraction of the robot during the insertion of their child’s I.V. In the rooms with the children who did not receive a robot, the parental satisfaction was 74%. Techniques such as this robot device can be very useful in any procedures a child may have because this is what children find interesting and it can allow them to take their mind off of the needle being inserted. In the conclusion of this article, it is stated that this device can help patients experiencing distress or anxiety but does not do much for their pain. Managing pain is priority, but we also want to ease our patient’s anxiety and providing interventions, such as the one discussed above, shows our patients that we care about providing them with the best care possible.

Conclusion:

In conclusion, after researching several different types of pain interventions during I.V. insertion, I have found that these techniques are effective and should be used on all pediatric patients to provide them with comfort. “There is a clear clinical, ethical, and professional obligation for the nurse to provide an effective individualized plan of care, in collaboration with parents and the healthcare team. The child’s experience is the focal point of patient care, and healthcare providers can offer more than a request to just hold still” (Schott, Brown, Vittone, 2021). When using comfort measures during intravenous catheter placement, it will show the patient and family members that we will take any measures necessary to reduce pain, anxiety, or distress. It is important to establish trust during our patient’s hospitalization so they can heal adequately and receive effective care. In pediatrics, we must provide comfort measures during I.V. insertion as it is usually the first procedure during their hospitalization and can alter their perception of healthcare if they have a negative experience.

Work Cited:

Primary Article

Schott, C., Brown, V., & Vittone, S. (2021). Comfort measures for peripheral i.v. catheter placement in children. *Nursing*, 51(11), 60–63.
<https://doi.org/10.1097/01.nurse.0000791716.04128.03>

Secondary Article

Ali, S., Manaloor, R., Ma, K., Sivakumar, M., Beran, T., Scott, S. D., Vandermeer, B., Beirnes, N., Graham, T. A., Curtis, S., Jou, H., & Hartling, L. (2020). A randomized trial of robot-based distraction to reduce children's distress and pain during intravenous insertion in the emergency department. *Canadian Journal of Emergency Medicine*, 23(1), 85–93. <https://doi.org/10.1007/s43678-020-00023-5>

Tertiary Article

Potts, D. A., Davis, K. F., Elci, O. U., & Fein, J. A. (2019). A vibrating cold device to reduce pain in the Pediatric Emergency Department. *Pediatric Emergency Care, Publish Ahead of Print*. <https://doi.org/10.1097/pec.0000000000001041>