

The Effect of Preintervention Preparation on Pain and Anxiety Related to Peripheral Cannulation Procedures in Children

■ ■ ■ Pinar Tunç-Tuna, MSc,* and Ayfer Açıkgoz, PhD[†]

■ ABSTRACT:

This study was performed to determine the effect of several preintervention preparation practices on pain and anxiety related to the peripheral cannulation procedure in children ages 9-12 years. The study included 60 Turkish children (28 female, 32 male, randomly selected by lot), 30 of whom were included in the intervention group and 30 of whom were included in the control group. The children's demographic data were collected by a data collection form prepared by the researcher. The children in the intervention group read the training manual before peripheral cannulation, and the procedure was demonstrated on a teddy bear. Their level of pain was assessed using the Wong-Baker Faces Rating Scale, and their level of anxiety was determined by the Spielberger State-Trait Anxiety Inventory for Children, before and during the procedure in both groups. Results showed that while anxiety and pain scores increased during the actual procedure compared to the preparatory procedure in the control group (anxiety $t = -4.957$, pain $Z^a = -4.048$), anxiety and pain scores decreased during the actual procedure in the intervention group compared to the preparatory procedure (anxiety $t = 7.896$, pain $t = 6.196$). When the pain and anxiety scores were examined, it was found that both anxiety and pain scores in the intervention group were significantly lower than in the control group. In conclusion, children in this study experienced pain and situational anxiety during peripheral cannulation, and this pain can be reduced by preparing the child in advance of the procedure. It is suggested that children should be informed about and able to practice the procedure on a toy or model before peripheral cannulation. Preparation of the children to painful procedures in accordance with their cognitive development can reduce anxiety and pain.

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From the *Department of Nursing, Aksebir Kadir Yallağoz School of Health, Selçuk University, Konya, Turkey; [†]Department of Nursing, Higher School of Health, Eskişehir Osmangazi University, Eskişehir, Turkey.

Address correspondence to Ayfer Açıkgoz, PhD, Eskişehir Osmangazi University Medical School, Department of Nursing, Meselik Campus, Eskişehir 26480, Turkey. E-mail: ayferacikgoz@mynet.com; aacikgoz@ogu.edu.tr

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INTRODUCTION

Children may have to be hospitalized for diagnosis or treatment at any period of their lives. Regardless of the age at admission, hospitalization is a unique situation that can negatively affect children. While the hospitalized child is trying to cope with the illness, she or he also has to address the emotions caused by being away from her/his family, friends, and school (Cakiroglu, 1991; Tufekci & Erci, 2007). As a result, studies related to hospitalization have mostly focused on negative feelings such as anxiety, fear, agitation, nervousness, tension, and worry.

Children's negative reactions to hospitalization or illness are closely related to painful processes involved in diagnosis or treatment (Cavusoglu, 2004). The child may well assume that the interventions in the hospital will harm her/him (American Academy of Pediatrics, 2001; Golianu, Krane, Galloway, & Yaster, 2000; Gonener & Pek, 2009). The most common hospital-related pain in children is the pain resulting from operations (American Academy of Pediatrics, 2001). Preventing detrimental effects of pain across the life span and providing optimal pain management, including procedural pain management, is critical. The American Society for Pain Management Nursing (ASPMN) supports health care professionals (HCPs) advocating and intervening to the best of their ability for children undergoing painful procedures, including having a procedure temporarily stopped to provide additional comfort measures based on the situation, setting, and best interests of the patient, to promote optimal and safe comfort management during procedures (Czarnecki et al., 2011).

The procedure-related pain in children should be evaluated by considering the developmental stage of the child and the attitudes of the family and health care providers (Toruner & Buyukgonenc, 2012). Moreover, because the first painful experience of a child will affect the future experiences, the best pain relief method should be chosen for the first painful procedure. This approach should include both pain relief during the procedure and preparations before and after the procedure (Kocaman, 1994).

Management of procedure-related pain varies according to the expected pain severity, pain perception of the family and child, the character and ability of the child to cope with pain, the type of procedure, the pain history of the child, and the support of family. Children and parents should be informed about the procedure. In appropriate cases, parents can accompany and comfort their children during the painful procedures (American Academy of Pediatrics, 2001).

Pain can occur at any age starting from the fetal period (Gardner, Enzman-Hines, & Dickey, 2011; Ovali, 2008). Contrary to previous thought, it is now well known that newborn infants can feel pain similar to other children (Anand & International Evidence-Based Group for Neonatal Pain, 2001; Ball, Bindler, & Cowen, 2010; Gardner et al., 2011). Carbajal and colleagues (2008), in a report studying 430 neonates, state that an infant hospitalized in a neonatal intensive care unit experience an average of 115 procedures during the first 14 days of life, and that 75% of these are painful procedures. In the study of Pölkki and colleagues (1999) on pain experience in 20 school-aged (7-11 years of age) hospitalized children, the common painful factors for all children were the procedures performed with a needle, and all children reported the pain experienced as shoving, inserting, and hurting. This is also the most commonly experienced pain by children in all age groups (Kocaman, 1994).

A common procedure that causes pain and anxiety in children is peripheral cannulation (Ozyazicioglu, 2005; Yazicioglu, & Arikan, 2007). Fear and anxiety in children increases pain perception; for this reason, beginning at the time of hospital admission, all nursing interventions towards elimination of fear and anxiety should also contribute to relieve the pain (Eti-Aslan, 1998). Anxiety, which can be difficult to define, is generally regarded as a feeling of fear and worry (Turkcapar, 2004), while pain is a hurtful experience caused by any type of tissue damage and stimulation of nerve endings (Gardner et al., 2011; Toruner & Buyukgonenc, 2012). By properly preparing the child in advance of the peripheral cannulation procedure, the level of pain and anxiety experienced might be reduced (Yazicioglu & Arikan, 2007).

Being well-prepared psychologically and having the support of the parents are of great importance for children. Unlike younger children, school-aged children need detailed information. If possible, the child should be allowed to choose the arm to be cannulated. It is also important to be honest from the beginning and inform the child that the procedure will cause pain and/or worry for a short while. The child should never be promised that it will not hurt or that it will only hurt a little (Gardner et al., 2011; Willock, Richerdson, & Brazier, 2004). In the review by Bauchner et al. (1994), providing information about the procedure was reported to be beneficial in school-aged and adolescent children. Accordingly, Harrison (1991) reported on a convenience sample of 100 children, aged 6-12 years, that the pre-prepared children report the venous blood withdrawal

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