The Effectiveness of Therapeutic Play Intervention in Reducing Perioperative Anxiety, Negative Behaviors, and Postoperative Pain in Children Undergoing Elective Surgery: A Systematic Review

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ABSTRACT:
Children undergoing surgical procedures commonly experience stress and anxiety, exhibit negative behaviors, and complain of postoperative pain. Parents also experience anxiety when their children undergo surgery. Therapeutic play intervention has been used to prepare hospitalized children for invasive medical procedures for decades. However, there has been no systematic review to examine the effectiveness of therapeutic play intervention for improving children’s health-related outcomes such as perioperative anxiety and postoperative pain. The aim of this review was to synthesize current empirical evidence on the effectiveness of therapeutic play intervention in reducing perioperative anxiety, negative behaviors, and postoperative pain in children undergoing elective surgery and in reducing their parents’ perioperative anxiety. Systematic searches of electronic databases of the Cumulative Index to Nursing and Allied Health Literature, PubMed, ProQuest Dissertations and Theses, Scopus, and Web of Science and screening of the reference lists of included articles from these databases identified studies on the topic. Relevant studies were methodologically assessed and appraised by two independent reviewers using the Joanna Briggs Institute Meta-Analysis of Statistics Assessment and Review Instrument. Six studies were identified. The outcome measurements were heterogeneous.
across all six studies. These studies had conflicting outcomes regarding the effectiveness of therapeutic play intervention in children’s perioperative anxiety, negative behaviors, and postoperative pain. Two studies showed that the intervention significantly reduced parents’ preoperative anxiety. The current empirical evidence on the effectiveness of therapeutic play intervention in children’s perioperative anxiety, negative behaviors, and postoperative pain is inconclusive. More studies on the effectiveness of therapeutic play intervention using rigorous designs and involving parents are needed.

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BACKGROUND

Stress and anxiety are commonly experienced by children who undergo surgical procedures (Kain, Mayes, Caldwell-Andrews, Karas, & McClain, 2006; Li & Lam 2003; Li, Lopez, & Lee, 2007a). Based on Kain et al. (2006), among 5 million children who underwent surgery, approximately 50% of them developed significant behavioral stress and anxiety before surgery. Previous studies have shown a positive correlation between preoperative and postoperative anxiety; that is, children with higher preoperative anxiety experience higher postoperative anxiety and distress than children with lower preoperative anxiety (Li, 2007; Li et al., 2007a). Children who experience excessive anxiety and distress often exhibit negative emotional behaviors such as crying, verbal protests, decrease in communication and activity, and withdrawal from interaction with healthcare professionals (Li & Lam, 2003; Ziegler & Prior, 1994). All these could influence children’s ability to cope with surgery, hamper their cooperation with health professionals, and inhibit their recovery postoperatively (Ahmed, Farrell, Parrish, & Karla, 2011; Becher & Sing, 1997; Lizasoain & Polaino, 1995).

Other than experiencing anxiety, children who undergo surgery often complain of postoperative pain. Unfortunately, several studies have found that children’s postoperative pain often is not adequately managed (He, Vehviläinen-Julkunen, Pölkkö, & Pietilä, 2007; Kortesluoma, Niskonnen, & Serlo, 2008; Sutters et al., 2007). According to a cohort study involving 131 parents and their 2–12-year-old children scheduled for elective surgery, on the second day after discharge the majority experienced pain (93%) and exhibited negative behaviors (73%) as a result of anxiety; at the fourth week after discharge, 25% still reported experiencing pain and 32% had negative behaviors (Power, Howard, Wade, & Franck, 2012). These findings suggest that there is a high incidence of pain and negative behaviors in children after surgery. Moreover, pain and anxiety are found to be interrelated (Kain et al., 2006; Lamontagne, Hepworth, & Salisbury, 2001; Vaughn, Wichowski, & Bosworth, 2007). A child in an anxious state has increased sympathetic responses to pain stimulus that makes him or her even more aware of the pain signal (Arntz, Dreesen, & Jong, 1994), which will reduce pain thresholds and lead to more pain experienced (Linton & Linton, 2005). Some researchers have reported that children with high perioperative anxiety level experience more postoperative pain (Fortier, Del Rosario, Martin, & Kain, 2010; Kain et al., 2006).

Parents also commonly experience anxiety when their children undergo surgery (Li, Lopez, & Lee, 2007b). Literature indicates that parents’ anxiety level is associated with the type of surgery their child is undergoing. For example, according to Scrimin, Haynes, Alto, Bornstein, and Axia (2009), parents whose children underwent a major surgery experienced higher level of anxiety than those whose children underwent a day surgery. In addition, a parent’s anxiety level was shown to be positively related to their child’s anxiety level (Lamontagne et al., 2001; Li & Lam, 2003). Thus, it is important to provide effective and time-efficient interventions to children undergoing surgery to reduce their anxiety level and postoperative pain as well as their parents’ anxiety level.

Therapeutic play with play intervention and dolls has been used to prepare hospitalized children for invasive medical procedures for several decades (Erickson, 1958). Previous studies have demonstrated the benefits of therapeutic play in reducing anxiety and postoperative pain in hospitalized children (Armstrong & Aitken, 2000; Li & Lopez, 2008; O’Connor & Drennan, 2003; Wang & Luo, 2006; Wolfer & Visintainer, 1975). Experimental studies have also shown the positive effects of therapeutic play intervention on perioperative anxiety, postoperative pain, and negative behavioral changes in children who undergo surgical procedures (Li et al., 2007b; Zahr, 1998). However, no systematic review has been conducted to examine the effectiveness of therapeutic play intervention on reducing children’s perioperative anxiety, negative behaviors, and postoperative pain after the search of the electronic databases of the Joanna Briggs Institute (JBI) Library of Systematic Reviews and Protocols, Cochrane Library, and Cumulative Index to Nursing
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