



ISSN: 0975-833X

RESEARCH ARTICLE

EVALUATION OF RELATIONSHIP BETWEEN THE CHILDREN'S GENDER AND PAIN INTENSITY
DUE TO INTRAMUSCULAR INJECTION

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ARTICLE INFO

Article History:

Received 10th October, 2011
Received in revised form
15th November, 2011
Accepted 19th December, 2011
Published online 31st January, 2012

Key words:

Pain,
Intramuscular Injection,
Infant,
Gender.

ABSTRACT

Statement of problem: Research For adolescents indicates that the patient's sex did influence anticipatory , and girls had higher pain intensity scores . Whether differences extent to children is less clear, and further studies in this area are needed .The aim of this study was to determined the effect of gender on the pain intensity.

Materials and Methods: In this RCT , 50 children 2-6month of age were taken (25 girls and 25 boys).In girls group and boys group DPT Vaccine via IM injection are Performed .Data was collected using FLACC scale and were analyzed with wilcoxon signed rank test .

Results: Result showed that not significantly difference between severity of Pain due to DPT Vaccine IM injection in girls group as compared with boys group (P>0/5).

Conclusion: Finding of this study indicated that gender could not Play an Important role in severity of pain 2-6 age of month children.

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INTRODUCTION

Pain is defined as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage” (International Association for the Study of Pain [IASP], 1979; Loeser and Treede, 2008).For health care providers, the definition of pain is translated as “whatever the person who is experiencing it says it is “ (Pasero ,Portenoy, and McCaffery,1999),which is the basis for effective pain assessment and management. However, health care providers caring for infants and young children have the additional challenge of recognizing how pre-verbal patients report pain in the absence of language skills. In recent decades, because of basic and clinical research, a heightened awareness of the problem of pain has led to improved measures, at least in the most developed countries, in the prevention, assessment, and treatment of pain in all age groups. Heightened attention from accrediting health care organizations, most notably The Joint Commission (2007) and national professions, organizations (American Academy of Pediatrics [AAP], 2001; American Academy of Pediatrics AAP, Committee on Fetus and Newborn Committee on Drugs, Section on Anesthesiology, Section on Surgery, Canadian Pediatrics Society, and Fetus and Newborn Committee, 2000; American Pain Society [APS], 2008), has prompted the need for increased knowledge of the physiology of pain and the related pharmacology of analgesics, especially appropriate dosing, as well as in corporation nonpharmacologic into the care of patients (edwards, 2002; Twycross,2009). Historically, infants and children have undertreated for Pain because of now-refuted

theory that they neither respond to nor remember painful experiences to the same degree as adults, leading to the erroneous conclusion that optimal pain management is not necessary in this age group (Breau et al., 2006) .The ability of children to cope with distress through playing or watching television has led health care providers to conclude that their patients are pain free with out asking them, resulting in withholding of appropriate analgesics.

The relationship between the patient s sex and pain varies with the population studied, and most of the work in this area has been done with adults. Whether differences extend to children is less clear, with conclusions that the sex-related differences in sensitivity, experience, and expression are complex, with many situational variables that are also influential in how a child responds to pain (McGrath and Hillier, 2003). However, research for adolescents indicates that the patient s sex did influence anticipatory distress, and girls had higher pain intensity scores, but the studies did not show sex differences in use of opioids after surgery (Logan and Rose, 2004). Prolonged , untreated pain experienced early in life may have long lasting effects on nociceptive processing and appear to sensitize infants and young children to subsequent painful experiences (Brislin and Rose, 2005; Fitzgerald, 2005;Grunau et al., 2006; Peters et al., 2005;;Taddia et al., 1997 and 2002);. Early work by Taddio, Katz, Ilersich and Koren (1997) highlighted how Painful experiences in early infancy influenced reaction to subsequent pain-generating events . Infants who were circumcised without topical anesthesia showed more behaviors associated with pain during subsequent routine vaccinations at 4 and 6 months of age that uncircumcised infants. In infants who had a eutectic mixture

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of local anesthetic (EMLA) cream at the site of circumcision, the provision of local anesthetics attenuated the pain response to subsequent vaccinations. The aim of this study was to determine the effect of gender on the pain intensity.

MATERIALS AND METHODS

This study occurred in the centers of vaccination of Shirvan city. In this study 50 children 2-6 months of age (25 girls and 25 boys) receiving DPT. Intramuscular injections, whose parent provided written informed consent, were included. Immediately before the injection, the site was cleaned with an alcohol swab then the dose of DPT was administered using a one-half to five-eighths inch, 23- to 25-gauge needle. Study injections were video recorded. The video recording continued until the child calmed down following the injection. The child could be held by a parent during the injection and provide whatever usual comfort measures they would normally provide once all study injections were complete, the video was reviewed and pain assessed for all injections by the same scorer using the FLACC pain scale (Merkel, Voepel-Lewis, Shayevitz, and Malviya, 1997). The scorer was a pediatric registered nurse. Nurse who was competent in completing pain analysis for children. The videotape was also reviewed to determine the time required for the patient to return to their baseline following the injection. The number of participants with informed consent determined sample size. Statistical analysis involved the Wilcoxon signed rank test to determine if there was a difference between girls group as compared to boys group with regard to pain scores and the time required for the patient to return to baseline. Statistical significance was indicated by p values less than 0.05. Ethics approval was obtained from the North Khorasan University of Medical Sciences research ethics board.

RESULTS

The mean FLACC scores post injection for girls group and boys group were 8.7 and 8.5 respectively ($p=0.96$). The mean time required for the patient to return to their baseline following the injection was 53 seconds for the girls group injections and 57 seconds for boys group. Result showed that not significantly difference between severity and recovery time of Pain due to DPT Vaccine IM injection in girls group as compared with boys group ($P>0/5$).

Table 1. The mean FLACC scores post injection for girls and boys groups.

Groups	Recovery time (Range)	Mean (Range) FLACC	Base LINE, Mean (Range) FLACC
Girls	53(15-70)	8.7(5-10)	1.7(0-8)
Boys	57(18-84)	8.5(6-10)	1.6(0-7)
P-VALUE	(0.86)NO sig	NOsig(0.96)	NOsig(1)

Wilcoxon Rank Test

DISCUSSION AND CONCLUSION

Result showed that not significantly difference between severity of Pain due to DPT Vaccine IM injection in girls group as compared with boys group ($P>0/5$). There is an extensive body of literature outlining gender differences in how individuals experience and respond to painful experiences

(Berkley, 1997; Logan and Rose, 2004; Pool, Schwegler, Theodore and Fuchs, 2007; Unruh, 1996). When faced with a potentially painful situation, girls have been found to anticipate more pain than boys (Carr, Lemanek and Armstrong, 1998; Logan et al., 2004). Differences have been documented in reports of post-operative pain intensity, with girls generally reporting more pain, as compared with boys (Logan et al., 2004). However the same study found no gender differences in children's use of patient-controlled analgesia (PCA). In other words, although the girls in the study by Logan et al. (2004) reported more intense pain than boys, they did not self-administer any more analgesia through the PCA pump. In a study investigating the responses of children to experimental (cold-pressor) pain, there were no gender differences amongst 7- to 9- year-olds with regard to how long they were willing to tolerate the discomfort (Piira et al., 2002). However, amongst older children (10-14 year olds), boys were found to have longer pain tolerance than girls (Piira et al., 2002).

Although not all studies have found gender differences in children's use of coping strategies for painful experiences (e.g., Piira et al., 2002), where differences have been found, girls have generally been found to make greater use of emotionally-focused coping than boys (Bull and Drotar, 1991; Logan et al., 2004). A variety of complex, interacting, factors have been suggested to account for gender differences in how individuals respond to pain experiences. These include factors such as conformity to traditional gender norms (Pool et al., 2007), social reinforcement of gender stereotypes (McGrath, 1993), prior experiences with everyday pains, such as in rough-and-tumble play (Boulton, 1996), willingness to report symptomatology (Eiser, Havermans and Eiser, 1995), as well as biological differences in brain chemistry, metabolism, physical structures and hormonal variation (Unruh, 1996). It is beyond the scope of this dissertation to comprehensively review the literature on each of these factors, however reviews are available elsewhere (e.g., Berkley, 1997; Hoffmann and Tarzian, 2001; Unruh, 1996). Whether differences extend to children is less clear, and further studies in this area are needed.

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