Effect of Tactile Stimulation on Reducing Infants Postoperative Pain after Abdominal Surgery

Thesis

Submitted for Partial Fulfillment of the Requirements
of the Master Degree in Pediatric Nursing

By

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Hanan Abd El Fatah El Morsy El Sharkawy

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List of Abbreviations

Abbreviation	Meaning
APLS	: Advanced Pediatric Life Support
AAP	: American Academy of Pediatrics
APA	: American Psychological Association
BPS	: British Pain Society
CMA	: Canadian Medical Association
CNS	: Central Nervous System
COPE	: Classification of Pain Expressions
DRG	: Dorsal Root Ganglion
FLACC	: Face, Legs, Activity, Cry & Consolability
IASP	: International Association for the Study of Pain
MRI	: Magnetic Resonance Imaging
N-PASS	: Neonatal Pain, Agitation and Sedation Scale
NIPS	: Neonatal Infant Pain Scale
NSAIDs	: Non-steroidal anti-inflammatory drugs
PAS	: Pain Assessment Scale
PMT	: Pain Management Team
PG	: Physical Growth
PONV	: Postoperative nausea and vomiting

List of Abbreviations *(Cont...)*

Abbreviation	*Meaning*
PRN	: Postoperative pro Re Nata
PIPP	: Premature Infant Pain Profile
QOL	: Quality of Life
RCPCH	: Royal Collage o Pediatric & Child Health
RSLSBS	: Royal Society of London Series B-Biological Sciences
SPSS	: Statistical Package for Social Sciences
SNS	: Sympathetic nervous system
TENS	: Transcutaneous Electrical Nerve Stimulation
USA	: United States of America
WHO	: World Health Organization

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Abstract

Background: The need of touch increases in case of illness, injuries and handicap. So Tactile Stimulation has been adapted to children and adults with e.g. physical or mental disability and/or autism, and acquired brain damage in consequence of accidents, dementia, stroke etc. It is an important aid in palliative care. **The Aim:** The aim of the present study was to assess the effect of tactile stimulation on reducing infants' postoperative pain after abdominal surgery. **Subjects & Methods:** A quasi experimental study was used in conducted this study. **Setting:** This study was conducting in Pediatric Surgery Department, at children's Hospital affiliated to Ain Shams University Hospitals. **Subjects:** A purposive subject composed of all available infants (80) of post operative (40 for the studied sample and 40 for the control sample). **Tools of Data Collection:** Three tools were used to collect the data: 1) Pain Assessment Scale (PAS), 2) Tactile Stimulation Technique and 3) Physiological Assessment. **Results:** Tactile stimulation after 6 hrs post operative effect positively on breathing pattern of study sample compared with the control sample with a highly statistically significance reported after 6 hrs (P-value 0.001). There was statistically difference between the physiological growths of the studied sample namely Heart Rate & Respiratory Rate and the tactile stimulation after 6 hours. While there was no statistically significant relation between the physiological growth of the studied sample namely temperature after 6 hrs. **Conclusion:** The current study concluded that, tactile stimulation was positively affect in reducing infants post operative pain after abdominal surgery, also there was statistically significant between the application of tactile stimulation technique and facial expression, crying, breathing patterns, flexion and extension of the upper and lower peripheral, sleep or a wake physical and physiological growth of the studied sample. **Recommendations:** Establish a system to educate, monitor and evaluate the tactile stimulation technique for nurses in pediatric care settings.

Key words: *Tactile stimulation, Infant, Postoperative pain, Pediatric nursing.*

Introduction

Unfortunately the history of pain management in infant care has included decades of inadequate analgesia for a wide range of medical procedures, including major surgery. This was justified in part on fear of drug and analgesic risks to the infant, as well as the commonly held belief that infants do not respond to, or remember, painful experiences. The infant pain is encoded into observable manifestations through which an infant communicates behavioral and physiological changes such as altered vital signs, characteristic cries, and facial expressions ***(Beyer & Knott, 2008).***

The International Association for the Study of Pain's widely used definition states, "Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage" ***(International Association for the Study of Pain [IASP], 2011)***.

Abdominal pain is a common problem in children. Although most children with acute abdominal pain have self-limited conditions, the pain may herald a surgical or medical emergency. The most difficult challenge is making a timely diagnosis so that treatment can be initiated and morbidity prevented, in a follow-up study subsequent to implementing a large-scale neonatal pain management protocol (oral sucrose administration), reported improvements in non pharmacological acute pain management ***(Champio et al., 2008).***

Infant pain management should be relying on current scientific evidence more than on the attitudes and beliefs and caregivers. Parents should be informed about pain relief strategies and their participation in the health care plan to alleviate their infant's pain ***(American Academy of Pediatrics [AAP], 2011)***.

The need for analgesia for both moderate and severe pain, in conjunction with behavioral and environmental (non-pharmacological) approaches constitutes an important treatment options for managing the procedural pain ***(Ballantyne et al., 2011)***. These non-pharmacological interventions are environmental and behavioral measures as nutritive sucking; sweet solution, skin–skin contact, breast feeding analgesia (it also seems to be an effective method of pain reduction for term neonates) and tactile stimulation (massage) ***(Canadian Medical Association [CMA], 2012)***.

Tactile stimulation is a very effective technique for controlling pain and "healing" therapy where the muscle and other soft tissues of the body are manipulated to improve the health and well –being. It involves different strokes and pressure techniques that are supposed to enhance blood flow to the heart, remove wastes from tissues, stretch ligaments and tendons and ease physical and emotional tension. Nurses use of tactile stimulation methods in children's postoperative pain management, in order to reduce pain and its complication ***(Bell, 2012).***

Significance of the Study

The number of cases in Surgical Department at Pediatric Hospital affiliated to Ain Shams University is not recorded, but the surgical department record about 8 to 12 cases per day for 5 days per weeks. So that it is consider high rate at the previously mentioned setting. According to ***AAP (2011)*** postoperative pain is often under treated. Although studies have demonstrated that many patients experience a substantial degree of unrelieved pain following operative procedures, so that non pharmacological pain management is very effective in reliving pain, and the nursing role post operative is consider a vital role in using the new techniques in pain management. Meanwhile, tactile stimulation has recorded effect on infant's postoperative pain but is not adequately investigated.

Aim of the Study

The aim of this study is to assess the effect of tactile stimulation on reducing infants' postoperative pain after abdominal surgery.

Research Hypothesis:

There will be statistically significant difference between the study and control groups after application of the tactile stimulation on reducing infants' post operative pain after abdominal surgery.

Review of Literature

Part I: Post Operative Pain

Concept of Pain

Pain is the response of the central nervous system (CNS) to tissue damage, warning us from further harm by making either reluctant to move, or quick to remove from harm's way ***(Cohen et al., 2008)***. It comes in many forms, and is perceived by each individual in the context of his own past and present experience ***(McNair, 2009)***.

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage. It is depending on cultural learning, the meaning of the situation, and other factors that are unique to each individual**,** or described in terms of such damage ***(IASP, 1999; Timby, 2001; Brooe & Huth, 2003)***. Each individual learns the application of the word through experiences related to injury in early life. Although the infant is neurologically capable of sensing pain, his intellectual and emotional perception can only be surmised ***(Merskey, 2001; Phipps et al., 2003; Bell, 2012)***. The fact of infant experience for pain and degree of stress response regarding surgical procedure can be monitored after surgery ***(Bonica, 2010)***.

Obviously, this definition may not be easily applicable in day to day situations, particularly in infants whose responses to pain are not very different from their response to fear and