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Pain Perception of Children during Venipuncture

Nesa Sathya Satchi
Professor
Apollo College of Nursing, Chennai, Tamil Naidu
sathyalawrence@gmail.com

Dr. Helen Perdita .M
Principal
Madurai Apollo College of Nursing, Chennai, Tamil Nadu
perditamary@yahoo.co.in

Dr. Janani Sankar
Senior Consultant
Kanchi Kamakoti Child Trust Hospital, Chennai, Tamil Nadu
janani.sankar@yahoo.co.in

Abstract:
Introduction: Children requiring needle stick such as injections, IV catheters and blood sampling usually view these procedures as frightening and it is a significant source of pain. It is recognized that pediatric patients suffer long-term effects if their pain is not managed appropriately in the acute stages. This study was conducted to assess the pain perception of children undergoing venipuncture.
Methods: The study was conducted using a descriptive correlational design among 141 children who met the inclusion criteria using purposive sampling technique. Data collection was done using Demographic, Clinical Variables Proforma and Wong Bakers Faces Pain Rating Scale.
Results: The findings revealed that the pain perception of children during venipuncture depicts that majority of children experienced severe pain during venipuncture (66.7%). There was significant association between age of child and pain perception $\chi^2 = 11.962$ df = 1 at P < 0.05.

Keywords: Pain Perception, Venipuncture.

INTRODUCTION

Children experience pain for multiple reasons in the healthcare setting; short painful procedures to help with diagnosis and treatment are one of the most common. Pain in children is stressful for the child, family and caregivers and effects of under-treatment can be negative and long-lasting. The experience of pain for a child is complex and is usually accompanied by anxiety, fear and behavioral changes [(1)].

Needle-related medical procedures are something that all young children need to undergo at some point. These procedures may involve feelings of fear, pain and anxiety, which can cause problems later in life either when seeking healthcare in general or when seeking care specifically involving needles. More knowledge is needed about supporting children during these procedures (Karlsson, 2016) [(2)].Bijttebier [(3)] point out that venipuncture involving rough treatment, poor preparation or unbearable pain can have extensive effects that include anxiety, decreased pain threshold, reduced effects of analgesia for further procedures and avoidance of medical care.

A study was done investigate the influence of children's memories for a novel pain stimulus on their subsequent pain experience. One hundred ten healthy children (60 boys) between the ages of 8 and 12 years completed a laboratory pain task and provided pain ratings. Two weeks later, children provided pain ratings based on their memories as well as their expectancies about future pain. One month following the initial laboratory visit, children again completed the pain task and provided pain ratings.

Results showed that children's memory of pain intensity was a better predictor of subsequent pain reporting than their actual initial reporting of pain intensity, and mediated the relationship between initial and subsequent pain reporting. Children who had negatively estimated pain memories developed expectations of greater pain prior to a subsequent pain experience and showed greater increases in pain ratings over time than children who had accurate or positively estimated pain memories. These findings highlight the influence of pain memories on healthy children's expectations of future pain and subsequent pain experiences and extend predictive models of subsequent pain reporting. [(6)]

Venipuncture can cause moderate to severe pain, especially in young children. A study of children aged 3 to 17 years found that 36% of children age 3 to 6 and 13% of children aged 7 to 17 experienced moderate to severe levels of pain during venipuncture. As the youngest children report higher pain, they may benefit the most from interventions to improve their pain experience. Recommendations by the American Academy of Pediatrics (AAP) advise minimizing pain during pediatric procedures including venipuncture. Evidence-based interventions are needed to reduce the pain experienced by the youngest children during venipuncture. [(5)]

One of the most dramatic advances in pediatric nursing is the atraumatic care of children. Assessing and managing a child with pain is a daily problem for nurses. They are not only the agents, who carry out doctor's orders, but also the ones who implement the orders and who work closely with patients to facilitate healing processes. Healthy children are often required to repeatedly undergo painful medical procedures (eg, immunizations). Although memory is often implicated in children's reactions to future pain, there is a dearth of research directly examining the relationship between them.

STATEMENT OF THE PROBLEM

A Descriptive correlational Study to Assess the Pain Perception of Children Undergoing Venipuncture at Selected Hospitals, Chennai.

OBJECTIVES OF THE STUDY

1. To determine the level of pain perceived by children during venipuncture.
2. To determine the association between selected variables and pain perception of children during venipuncture.

Null Hypothesis

H01 There will be no significant association between selected variables and pain perception of children.

MATERIALS & METHODS

A descriptive correlational design was adopted to conduct the study in Apollo Children's Hospital, Chennai, India after obtaining proper permission from the concerned authorities. One hundred and forty one children were selected by purposive sampling technique. After initial introduction, the researcher obtained consent from the subjects to participate in the study. An assurance was given regarding confidentiality before the data collection procedure.

INSTRUMENTS

The baseline data was collected using Demographic variable Proforma, Clinical variable Proforma and Wong Baker Faces pain rating scale was used to assess the pain perception, it consisted of six cartoon faces ranging from smiling face for "no pain" to tearful face for "worst pain". The FACES provide three scales in one: facial expression, numbers, and words. The scores ranged from 0 -no pain, 2 - hurts little bit, 4 - hurts little more 6- hurts even more, 8 - hurts whole lot, 10- hurts worst . Minimum score was 0 and maximum was 10.

The researcher observed and documented the pain perception of the child during venipuncture.

DATA COLLECTION

The researcher collected the demographic variables and the clinical variables by interviewing the children and their parents. The pain perception of the children was assessed by the researcher using Wong Baker Faces Pain Rating Scale for pain perception during venipuncture through observation method.

RESULTS

The study findings showed that 24.1% of children were aged 6 years, males (53.9%), with an average weight of 20 -30 kgs (58.2%) and height 130-140 cms (38.3%). Most of the children (80.9%) had normal BMI affected with acute illness (56%). Majority of the children were cannulated with venflon (66.7%) of 20 gauge (37.6%) cannulated in the dorsal venous network (35.5%). Sixty three percent had previous experience of venipuncture, 80.9% did not have the caregivers with them during procedure.

Table 1: Frequency and Percentage Distribution of Levels of Pain among children during venipuncture (N =141)

Pain perception	n	P
No Pain	-	-
Mild Pain	5	3.3
Moderate Pain	42	30
Severe Pain	94	66.7

The data presented in table1 reveals that majority of children experienced severe pain during venipuncture (66.7%)

Table 2: Association between Selected Variables of Children and Pain Perception during Venipuncture

Variables	Yes	No	χ^2	P - value
Age in years			χ^2=11.962 df=1	P<0.05
<8	16	43		
8+	5	77		
Gender Male	12	64	χ^2=0.104 df=1	P>0.05
Female	9	56		
BMI Underweight	3	8	χ^2=2.421 df=2	P>0.05
Normal	17	96		
Overweight	1	16		
Nature of Illness Acute	11	68	χ^2=0.133 df=1	P>0.05
Chronic	10	52		
Previous experience of venipuncture Yes	9	81	χ^2=4.701 df=1	P>0.05
No	12	39		
Presence of Parent during venipuncture Yes	4	23	χ^2=0.053 df=1	P>0.05
No	17	97		

Table 2: Depicts Significant Association between Age of Child and Pain Perception at P<0.05 level of Significance.

DISCUSSION

The demographic data reveals that 24.1% of children were aged 6 years, males (53.9%), with an average weight of 20 -30 kgs (58.2%) and height 130-140cms (38.3%).Most of the children (80.9%) had normal BMI affected with acute illness (56%).Majority of the children were cannulated with venflon (66.7%) of 20 gauge (37.6%) cannulated in the dorsal venous network (35.5%).Sixty three percent had previous experience of venipuncture, 80.9% did not have the caregiver's with them during procedure. .

Pain perception of the children during venipuncture depicts that majority of children experienced severe pain during venipuncture (66.7%). Desire Lie 2002 conducted a study on minimizing needle pain in children. Survey suggested that venipuncture is associated with considerable distress among children. Between 34% and 64% of children experienced stress of pain from the procedure. The study suggested that 50% of children report needle stick experiences as unpleasant and painful, which causes subsequent high levels of anticipating fear and

Chi-square test was used to find out the association between the selected variables and the pain perception of children. It revealed significant association between age of child and pain perception at P<0.05 level of significance. Hence the hypothesis $H0_1$ there will be no significant association between selected variables and pain perception of children was accepted.

CONCLUSION

For children in hospital, venipuncture is one of the most fearful and painful aspects, which make them, feel the most anxious. Therefore, in daily clinical practice it is necessary to increasingly promote the adoption of the effective and validated techniques known as systemic desensitization. The findings of this research have contributed to the extension of the knowledge base on school-age children's pain to venipunctures.

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