EFFECTIVENESS OF ICE APPLICATION ON PAIN RESPONSE IN CHILDREN PRIOR TO INTRAVENOUS PROCEDURE.

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**Hypothesis:**

$H_0$: There will be no significant difference between experimental group and control group.

$H_1$: The pain score of experimental group after ice application will be significantly lower than the pain score of the control group.

**INTRODUCTION**

Painful medical procedures are the major sources of distress among children; and for those with chronic diseases, the procedure-related pain can be worse than that of the illness itself.

Intrusive procedures such as venipuncture are really a stressful event for children. Venipuncture in the paediatric population can be the most distressing event associated with medical encounters.

Nurses have most frequent contact with children presenting for non emergency illness and injury care and they spend more time with patient in pain than any other health care professionals. A nurse has to help the children through such procedure. The nurse caring the child during procedure has a double task. One is helping the child and parents...
effectively and the other is ensuring the effectiveness of procedures.

Non-pharmacological procedures or technique to reduce procedure related pain and avoid potential drug's side effects are generally less expensive and can be performed independently by a nurse.

**REVIEW OF LITERATURE**

According to *Terry Kyle*, the sensation of pain is a complex phenomenon that involves a sequence of physiologic events in the nervous system i.e. transduction, transmission, perception & modulation. Author also states that pain affects adults & child alike, but children may lack the verbal capacity to describe their pain accurately so it is difficult to assess complex nature of pain experience. Effective pain management involves initial assessment for all children in any health care setting.

*Dorothy R. Marlow, Barbara A. Redding*, writes that pain is a subjective experience & neonates, infants and children respond to pain with behavioural reactions that depend upon their age & cognitive processes. Pain may occur as a result of procedures, surgery, illness or injury. Assessing of the pain is one of the challenging work among children. The children responds with body movements and crying as children may lack the verbal capacity to describe pain accurately and pain level can be assessed by facial pain scale.

*Ebner CA.* a quasi experimental study was done by used to determine whether cold therapy decrease the perceived pain associated with IM injection in children. Sample of 40 children with age 10 to 80 years was randomly assigned to control and experimental group. The experimental group had an ice pack placed on the injection site for 15 minutes prior to injection and control group with normal routine care. Children who receive cold therapy showed significant reduction in IM injection pain.

*Yuka Saeki.* A study was designed to determine the effect of application of cold or heat on the sensation of pricking pain based on automatic response. Electrical stimulation was applied to the anti brachium of subjects with an artificial pricking pain and the skin blood flow and skin conductance level at the fingertip was measured. Pain sensation was evaluated using the visual analogue scale. Pain stimulation produced a significance increase in skin conductance level and significant decrease in blood flow at both ante brachial and brachium. Applications of cold to the stimulation site using an ice water pack decreased blood flow and skin conductance level responses. The results suggests that application of cold promotes relief of pricking pain sensation and suppression of autonomic responses and where as hot had little effect.

*Mavohedi Ali, Rosatomy et al* study was conducted to assess the effect of local refrigeration prior to venipuncture on pain related response in school age children. Eighty children with 6-12 years of age were selected and divided into two groups as test group and control group. In test group injection site was refrigerated for 3 minute using ice bag before injection and in control group it was performed according to normal routine. By using CHEOPS, oucher's scale,
and with physiological and behavioural responses, was found that average pain intensity in local refrigeration is much less compared to pain intensity in control group. The results of this study suggest that the use of local refrigeration prior to venipuncture can be considered an easy and effective intervention of reducing venipuncture-related pain.

**METHODOLOGY**

*Research Design*: Method adopted for study was quasi experimental, post test only control group design.

The material used for this study to assess the pain scale was *Wong-Baker FACES Pain Rating Scale*.

**SCHEMATIC PRESENTATION OF RESEARCH DESIGN**

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<thead>
<tr>
<th></th>
<th>E</th>
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**KEY:**

- E – Experimental group
- C – Control group
- X - Intervention in the form of local cold application prior to intravenous procedure.
- O₁ - Observation of the pain response in the experimental group.
- O₂ - Observation of the pain response in control group.

*Setting of study*: The study was conducted in selected hospitals of Pune city.

*Sample*: 60 children (30 Control group & 30 Experimental group) admitted in selected hospitals of Pune city.

Sampling technique: Non probability purposive sampling technique.

*TOOL*: The tool used for data collection consist of demographic information and pain scale.

*VALIDITY*: The group of experts did the content validity of tool from the field of Nursing, mental health nursing department, community health nursing, child health nursing specialist and medical surgical nursing specialist.

*PILOT STUDY*: Conducted on a small sample of 6 children. The finding of significant positive correlation among children after pilot study no change done in tool

**RESULT**

Data from experimental group and control group analysed and compared for pain response. 53.3% of the children in experimental group had moderate pain and 46.7% had severe pain. Where as in control group, majority of 83.3% of them had severe pain and 16.7% had moderate pain. The data indicates that there is significant difference between the pain score of experimental and control group.

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<tr>
<th>Variables</th>
<th>Experimental</th>
<th>Control</th>
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<tbody>
<tr>
<td>Pain level</td>
<td>n</td>
<td>%</td>
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<tr>
<td>Mild</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Moderate</td>
<td>16</td>
<td>53.30%</td>
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<tr>
<td>Severe</td>
<td>14</td>
<td>46.7%</td>
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CONCLUSION:
The study concluded that ice application is a practical modality of choice, promote comfort and cost effective, means of reducing pain in children during intravenous procedures.

REFERENCE: