

Helfer Skin Tap Technique for IM Injection Pain: A Review

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Abstract: Pain is a complex phenomenon, a subjective sensation which normally humans tend to avoid. The current review was done with an objective of exploring whether nurses are aware of Helfer skin tap technique (HST) and practicing it in clinical areas. Review of literature was done in print and online media, including searches at pubmed and Google scholar. Studies conducted since last twenty years were searched. It was found that innumerable number of researches have been done assessing the effect of Helfer Skin tap technique on IM injection pain concluding that it is significantly effective. Researches have used quasi experimental, posttest cross over design at different settings in India. No RCT was found on this subject. **Conclusion:** Nurses need to conduct RCTs to evaluate the effect of HST so that it can be incorporated in the curriculum of student nurses. Practicing Helfer skin tap technique routinely by nurses can contribute to improve patient's comfort level by reducing the interventional pain.

Keywords: Helfer skin tap technique, Pain, Intramuscular injection, Rhythmic tapping

What this paper adds?

- Helfer Skin tap technique is already researched by lot of nursing investigators in the management of pain related to IM injection but still no RCTs are done.
- This paper emphasises the need to do more of RCTs on HST so that it can be included in the curriculum of student nurses

1. Introduction

Every human being in the world has experienced some type or degree of pain for which the individuals get health care. Pain may be an extremely unpleasant and a really personal sensation that is not be shared with others; it can occupy all an individual's thinking and alter an individual life, yet pain may be a scary concept for a patient to communicate; a medical staff neither sees nor feels patients pain.

According American pain society, Pain is referred as “the fifth vital sign” to stress its significance and to improve attention of health care professionals about the importance of effective pain management strategies, as well as continuous assessment.^[1]

In the medical practice, intramuscular (IM) injection is one of the most frequent procedures done almost every day used to deliver medication deep into the large muscles of the body. It is fact that any intra muscular injection will cause pain at the site of injection.

There are 16 billion IM injections administered annually throughout the world (WHO, 2011). In developing countries alone, some sixteen thousand million injections are administered annually, over, 90%, are administered for therapeutic aims whereas 5 to 10% are administered for disease prevention, the foremost important side-effect associated with injections is that the related pain.^[2]

It is a challenge to the nurse to give painless injections which will be an excellent relief for those patients who are scared of needles and injection. Different methods are used by the nurses to reduce pain during IM injections such as tapping the skin, Z- track, applying pressure, applying heat

and cold. Among the different physical interventions the most effective are tapping the skin. Tapping over the skin is one of the various techniques to keep the muscles relaxed. It is an accepted fact that there is reduced pain while giving injection into a relaxed muscle.

In 1998, Ms. Joanne Helfer made an attempt to alleviate pain due to IM injection by developing “Helfer Skin Tapping technique” (HST) in which tapping was done over the injection site. HST offers a painless injection experience. In this technique, rhythmic tapping before injection over the skin at the site of injection keeps the muscle relaxed and stimulates large diameter fibers. Helfer skin tap to reduce pain associated with IM injection is not complicated and can be done without any special equipment. The benefits of Helfer skin tap are:

1. Relax the skin and reduce needle anxiety
2. Diminish pain
3. Provide superficial vasodilatation
4. Giving anaesthetic effect.

HST offers a painless injection experience. As per the gate control theory described by Roger Metzack and Past Wall, this technique provides a mechanical stimulation as well as distraction during administration of IM injection, thereby helping in the reduction of pain.^[3]

2. Review of Literature

Pain reduction with HST has been researched by several investigators and concluded that it was significantly effective in reducing the procedural IM pain. It has been used in the management of pain while giving injections like Tramadol, Benzathine Penicillin G, Voveron and

immunization in case of children. Both adults and children were the participants.

Most of the researchers have used quasi experimental, post test , cross over designs.

A study conducted by an emergency room nurse regarding painless injection technique; the investigator taps the muscle before inserting the needle and while removing the needles. Study concludes that by following Helfer skin tap technique patient experienced less pain while receiving intra muscular injection.^[4]

Sr. Serena et al conducted a quasi-experimental study to assess the effect of rhythmic skin tapping technique to reduce the procedural pain during IM injections in St. John Medical College Hospital, Bangalore. The result showed that skin rhythmic tapping technique was an effective method in reducing pain during IM injections as one third of patient had no pain with IM administration.^[5]

Sivapriya et al assessed the pain level endured by neonates during the administration of IM injection, along with performing the Helfer skin tap technique. They concluded that a significant decrease was observed in the pain score on the administration of IM injection with Helfer skin tap technique ($p < 0.05$) and routine treatment.^[6]

Effectiveness of skin tap technique in reducing pain response during DPT injection has also been assessed. A post-test only control group design was adopted for the study, it was concluded that it was effective in reducing the pain ($p < 0.001$).^[7]

Therese A Mary et al analyzed the efficacy of HST vs routine technique on the reduction of pain, in patients who were administered IM injection in a government general hospital, Puducherry. Simple random sampling technique (lottery method) was used, wherein, 25 subjects were first administered IM injection using HST followed by routine technique. In the study, the pain level endured by subjects was examined with respect to four variables, i.e., pain, systolic and diastolic blood pressure, and pulse rate. The result showed that the perception of pain intensity was less when the IM injection was administered using Helfer skin tap technique when compared with the routine technique, thereby concluding that the skin tapping method can be implemented during administration of intramuscular injection.^[8]

Swathi John et al conducted a post-test only control group study to assess Helfer tap technique on adults with RHD receiving Inj. Benzathine Penicilline 1.2 MU IM. The skin was tapped rhythmically with the middle, ring, and little finger of the dominant hand counting one to 15. It was found to be effective in reducing the pain ($p < 0.05$) as compared with the routine treatment.^[9]

Amira Ahmad analyzed the efficacy of HST on pain intensity as perceived by the patient receiving IM Injection. A quasi experimental research design was used where 100 patients were collected by purposive sampling technique and conducted at medical and surgical units at Main Mansoura

University Hospital. Each patient was administered repeated IM injections at the gluteal site. The results showed that the pain perception of patients in terms of pain level of traditional technique was found to be significantly higher than pain level of Helfer skin tapping Technique and thereby concluding that Skin tapping technique was effective in reducing pain level of patients.^[10]

Vathani G et al conducted a study to assess the effectiveness of HST on pain reduction among the patients receiving intramuscular injection, Tramadol, by using experimental approach. Simple random sampling technique was used. The findings of the study revealed that among 134 patients, the post-test pain score in the study group and control group (0.67 ± 1.17 vs. 4.95 ± 1.77) were found to be statistically highly significant at $p < 0.001$ level. The study concluded that there was an effective pain reduction among the patients in study group who received HST than the patients in the control group who received routine technique.^[11]

Effect of Helfer Rhythmic skin tap technique on procedural pain among patients receiving IM injection was evaluated by Shah S. Quasi-experimental approach was used with cross over design. Total of 82 patients who were receiving Inj. Voveran and admitted in orthopaedic wards of Govt. Medical College Kozhikode, Kerala were involved in the study. The result revealed that there was significant reduction in pain perception scores of patients receiving IM injection with HST, compared to the conventional treatment.^[12]

3. Conclusion

Various nonpharmacologic interventions used to reduce pain include meditation, thermal measures, play activities, relaxation techniques, imagery, massage, positioning, and music.^[13] Nurses play a crucial role in assisting patients with nonpharmacologic interventions for procedural pain by analyzing the technique best suitable for the patient, teaching them the appropriate way for using their options, supporting and reinforcing the correct use before, during, and after the procedure, along with evaluating and recording the effectiveness of the activity. HST offers a promising alternative in the management of IM injection related pain. Yet RCTs are not done on this topic which needs to be further investigated.

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