



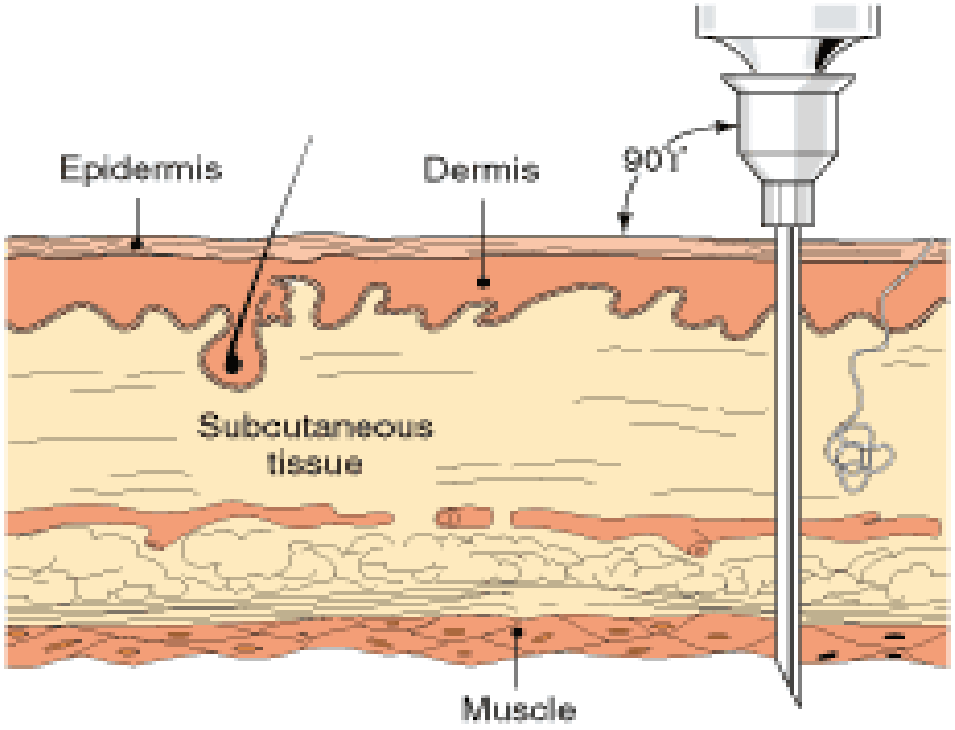
EFFECT OF BUZZY® APPLICATION ON PAIN AND INJECTION SATISFACTION IN ADULT PATIENTS WHO RECEIVED INTRAMUSCULAR INJECTION

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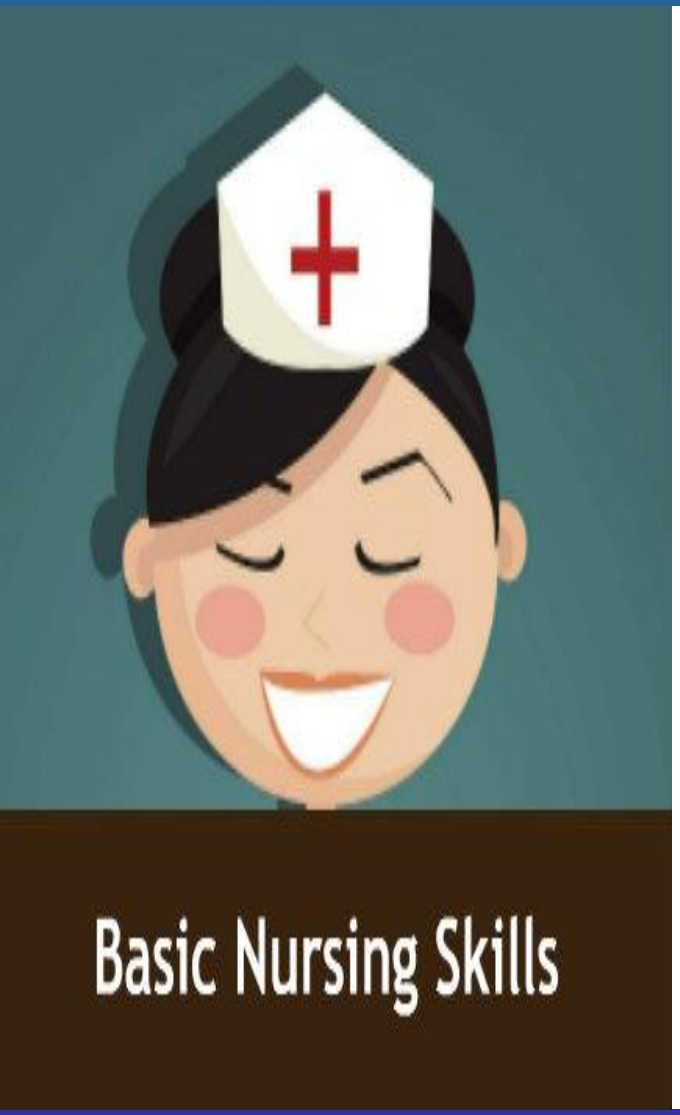
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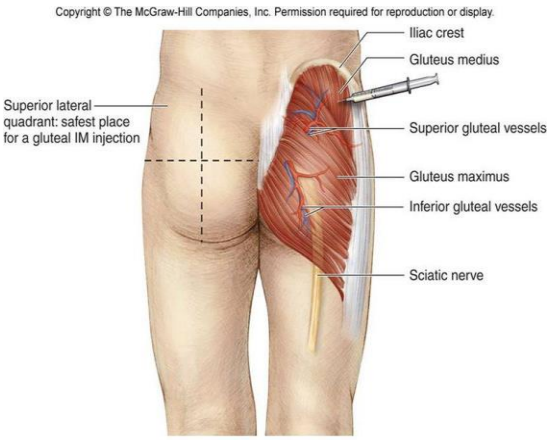


- Within the category of parenteral medications are intramuscular (IM) injections (WHO, 1999).

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The administration of intramuscular (IM) injection is a basic nursing skill and is a common nursing procedure in the clinical setting.



Proper placement of a gluteal intramuscular injection.

Tuğrul E., Khorshid L., Effect On Pain İntensity of Injection Sites and Speed of Injection Associated with Intramuscular Penicillin, International Journal of Nursing Practice 2014; 20: 468–474.

- IM injections usually cause some degree of pain at the injection site.



Kara D., Güneş Ü. Y., The effect on pain of three different methods of intramuscular injection: A randomized controlled trial, International Journal of Nursing Practice 2014.

Patients are often afraid of receiving injections because they perceive that it will be painful.



Kanika K.H.R., Shobha P., Effect of massage on pain perception after administration of Intramuscular Injection among adult patients. Nursing and Midwifery Research Journal, Vol-7, No. 3, July 2011

Workman B. Safe injection technique. Nursing Standard 1999; 13: 47–53.

- Injection pain is related to the penetration of the skin by the needle and to the mechanical and chemical effects of the drug during and after its injection.*



*Kanika K.H.R., Shobha P., Effect of massage on pain perception after administration of Intramuscular Injection among adult patients. Nursing and Midwifery Research Journal, Vol-7, No. 3, July 2011



Unnecessary pain can damage the nurse- patient relationship, whereas knowledge of alternative techniques can improve patient care and satisfaction.

•Hasanpour M, Tootoonchi M, Aein F, Yadegarfar G., (2006). The Effects Of Two Nonpharmacologic Pain Management Methods For Intramuscular Injection Pain In Children. Acute Pain, 8: 7–12.



- Over the years, clinicians have tried to explore various methods to reduce pain, including the pain of injections.



Kara D., Güneş Ü. Y., The effect on pain of three different methods of intramuscular injection: A randomized controlled trial, International Journal of Nursing Practice 2014.



These studies have examined the effect of different factors and interventions, such as

- cold,
- manual pressure,
- acupressure,
- needle temperature,
- two-needle technique,
- injection speed,
- patient positioning and
- the Z-track technique.

Kara D., Güneş Ü. Y., The effect on pain of three different methods of intramuscular injection: A randomized controlled trial, International Journal of Nursing Practice 2014.

Hasanpour M, Tootoonchi M, Aein F, Yadegarfar G., (2006). The Effects Of Two Nonpharmacologic Pain Management Methods For Intramuscular Injection Pain In Children. Acute Pain, 8: 7–12.

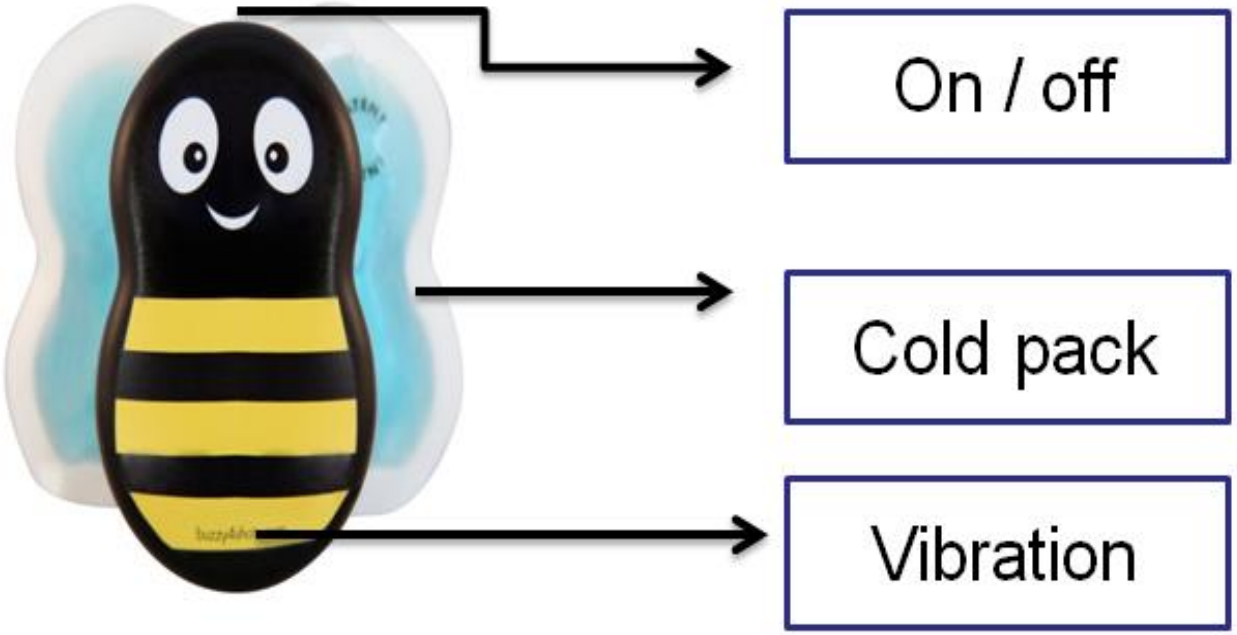
Ağaç E., Güneş Y.P. (2010). Effect On Pain Of Changing The Needle Prior To Administering Medicine Intramuscularly: A Randomized Controlled Trial. Advanced Nursing, 67(3), 563–568

In the literature there are few studies related to the usage of Buzzy device for reducing the pain of IM injection and there isn’t any study for the adult about it yet.



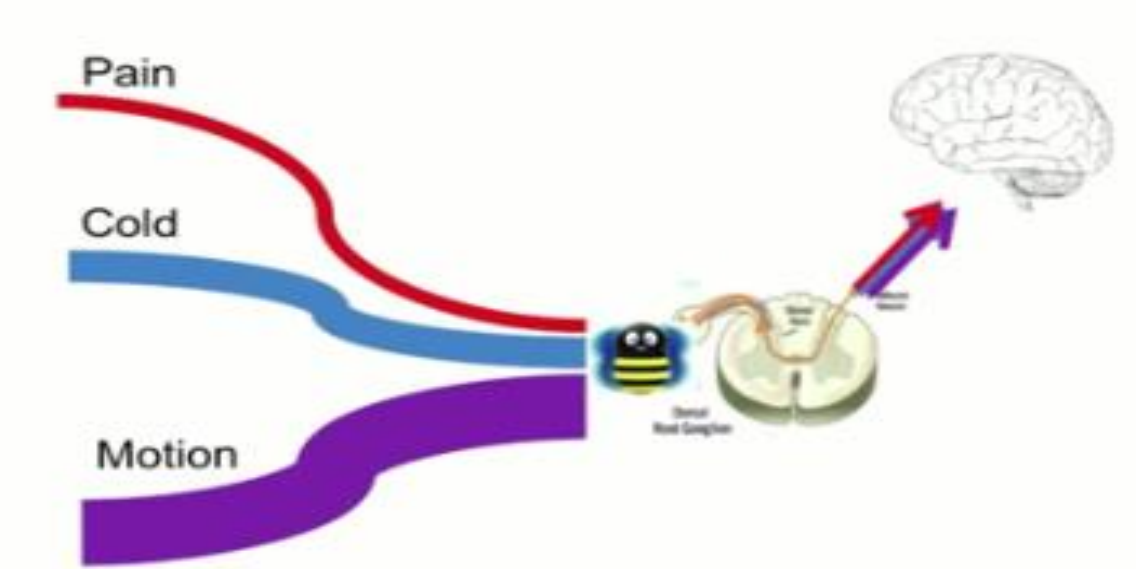
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How is the buzzy's mechanizm?



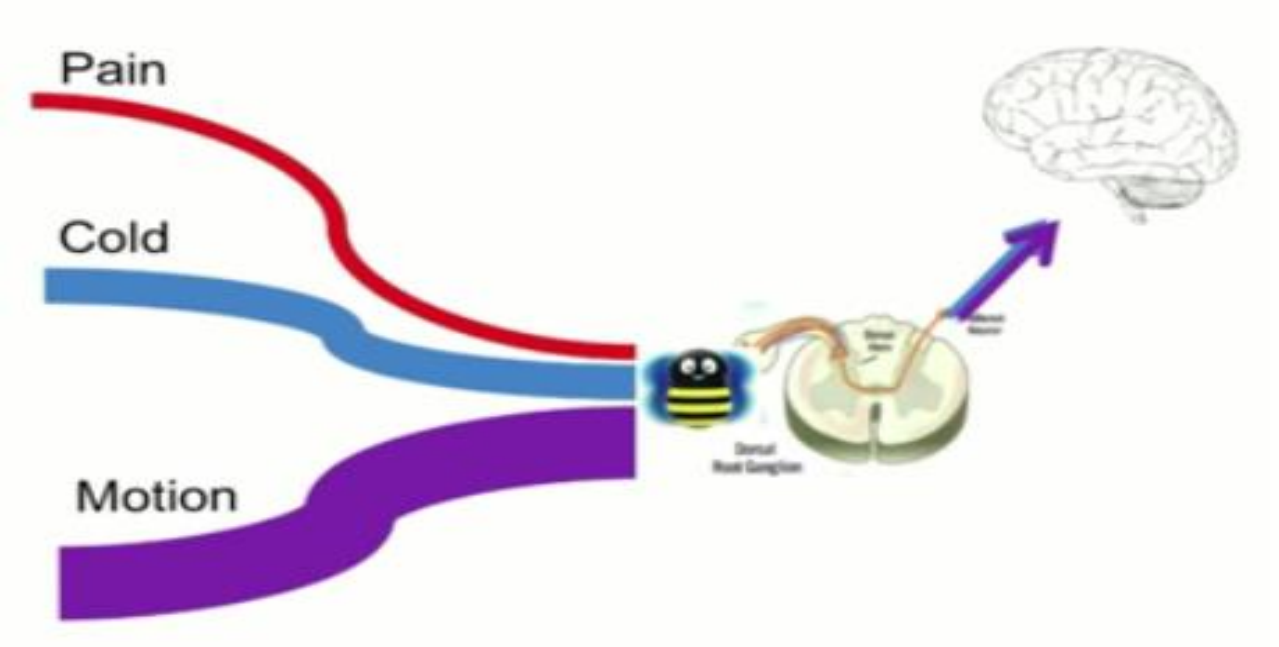
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Buzzy device (cold and vibration) is one of the non-pharmacologic methods used and acts through local skin desensitisation according to gate- control theory.

•Russell K., Nicholson R., Naidu R., Reducing the pain of intramuscular benzathine penicillin injections in the rheumatic fever population of Counties Manukau District Health Board, Journal of Paediatrics and Child Health 50 (2014) 112–117
•Hasanpour M, Tootoonchi M, Aein F, Yadegarfar G., (2006). The Effects Of Two Nonpharmacologic Pain Management Methods For Intramuscular Injection Pain In Children. Acute Pain, 8: 7–12.



Buzzy which combination of cold and high frequency vibration is between brain and pain, and the pain is blocked out.

https://www.youtube.com/watch?v=r3NSpi1Ilqc



Buzzy is blocked the pain according to gate control theory.

At the same time, Buzzy with distraction causes the reduce of the injection pain and anxiety on the patient.

•Kozier B., Erb G. (2008) Fundamentals of Nursing: Concepts, Process, and Practice, 8th edn. Prentice Hall Health, Upper Saddle River, NJ.
•Özveren H. (2011). Ağrı Kontrolünde Farmakolojik Olmayan Yöntemler. Hacettepe Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik Dergisi,83-92
•Potter P.A., Perry A.G. (2005). Fundamentals Of Nursing. Mosby, St. Louis, 6th Edition, 000

OBJECTIVE



This research was carried out as a single-blind, randomized, controlled study in order to investigate the effect of Buzzy application on pain and injection satisfaction before and during injection.

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TIME AND PLACE OF RESEARCH



This research was carried out in Physical Therapy Service of 75th Year Milas State Hospital in Turkey between

12 November 2012 and

11 January 2013.

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Patients were chosen;



Who haven’t injections in recent week,



Who have no injection site abscess, haematoma, necrosis,

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who have no problem of seeing and hearing,



who were between 25 and 85 years of age and

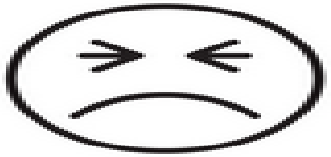
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who could understand the visual analog scale (VAS)



No pain



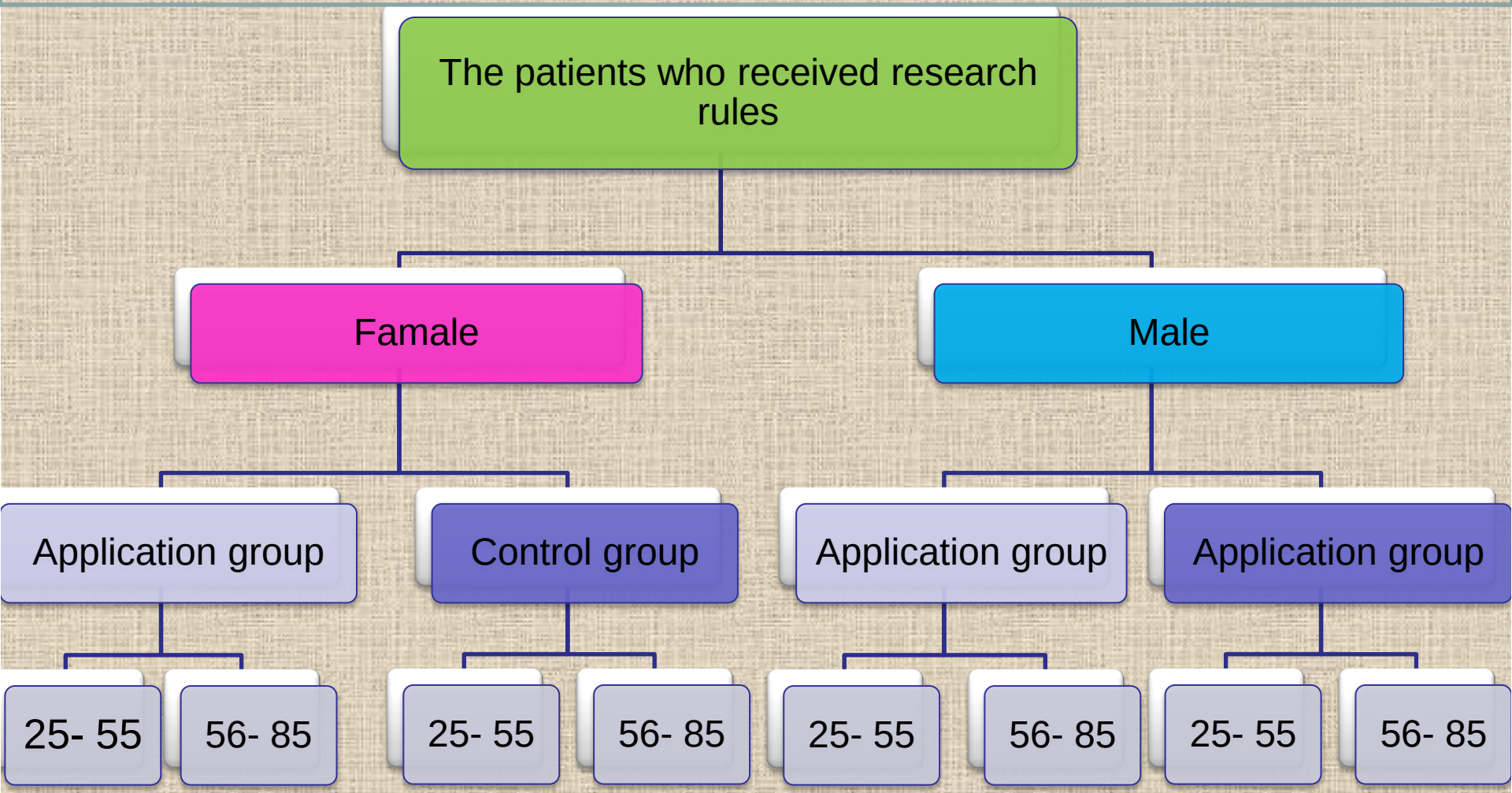
Worst pain ever

RANDOMİZATİON



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The patients randomized according to age and sex by drawing lots.



RESEARCH SAMPLE;

- A total of 65 patients (application group=33, control group=32) for whom IM diclofenac sodium injection was ordered and who met the selection criteria comprised the sample of research.



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Data collection instruments



- Patient Information Form,
- Visual Analog Scale (VAS)
- Buzzy®



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Patient Information Form



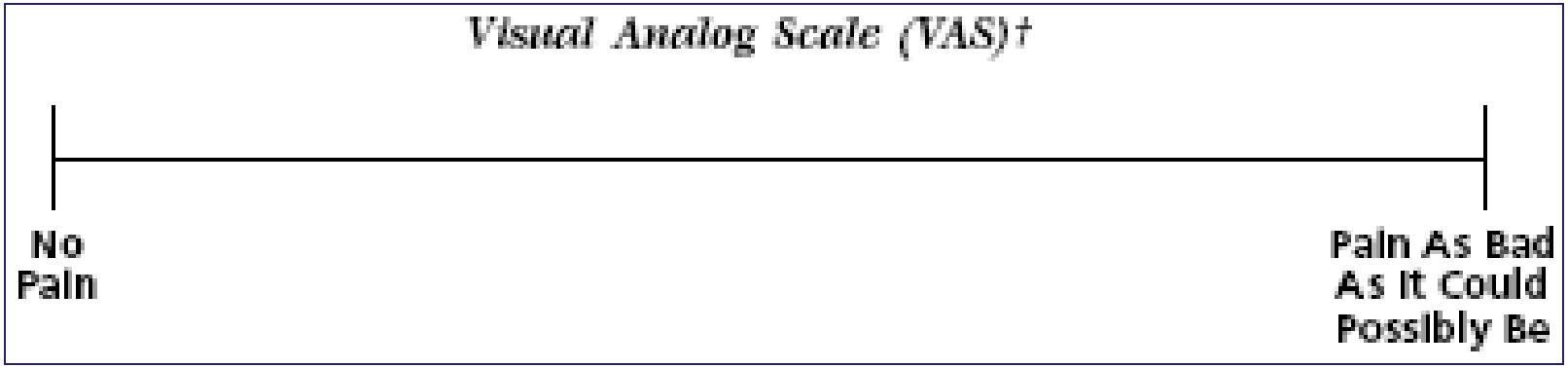
- Age
- Gender
- Length
- Weight
- Body mass index (BMI)
- Educational level

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Visual Analog Scale (VAS)

PAİN

INJECTION SATISFACTION



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Data Collection Procedure



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Patients who met the selection criteria comprised the sample of research.

Randomization

Application Group

Control Group

All participants received an explanation of the study before participating and gave informed written consent before voluntary participation.

The device is placed on injection area and 30 second later, it is placed above 3 centimeters of the application area.

Standard injection was applied to control group.



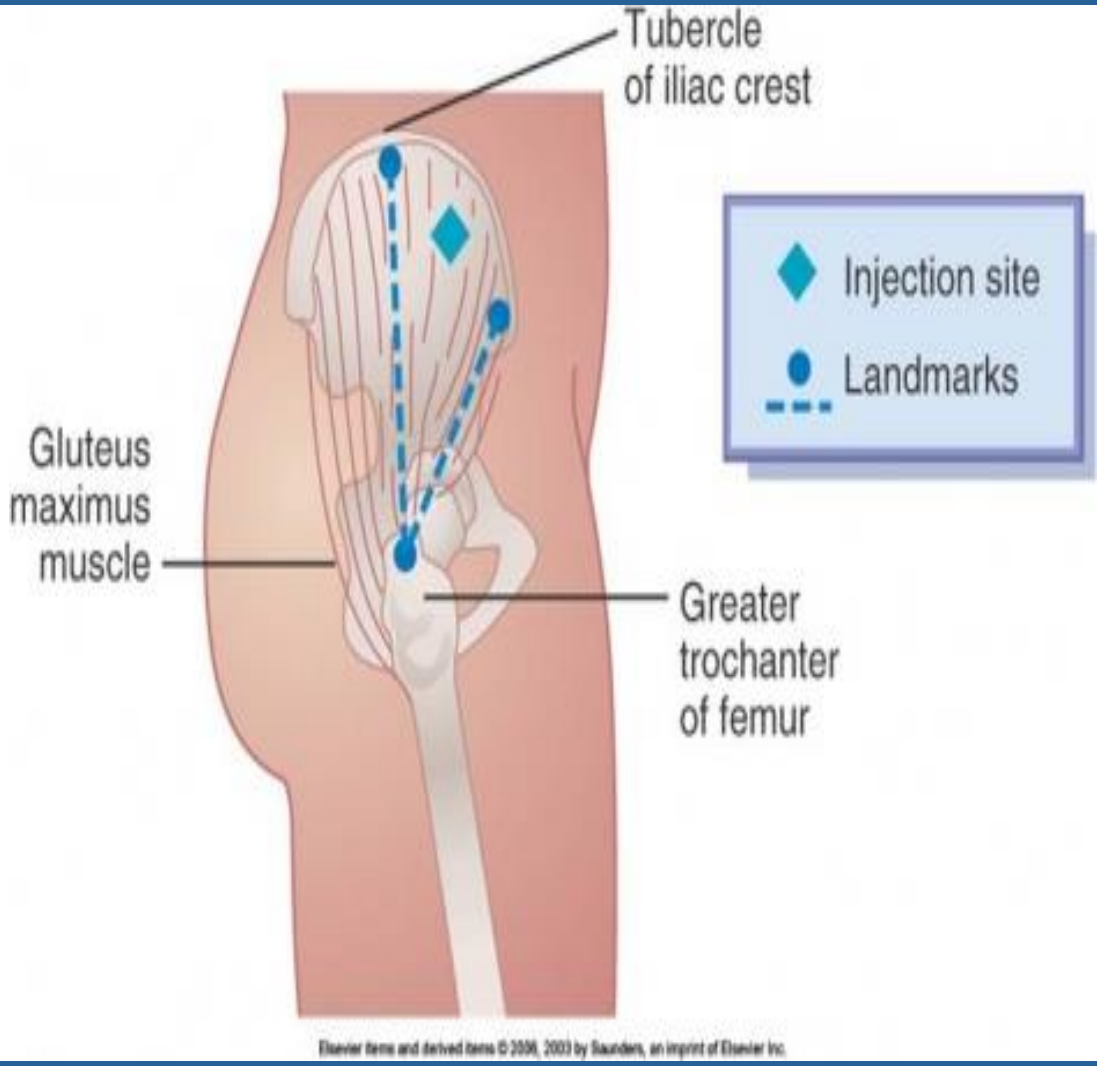
After application of injection pain and injection satisfaction scores were evaluated according to visual analog scale (VAS).

Application of buzzy device on a patient



K. Russell, R. Nicholson, L. Legge, E. Leauanae, A. Olsen, S. Marsh. R. Naidu. (2011). Reducing the pain of Bicillin injections in the Rheumatic Fever population of CMDHB. Counties Manukau District Health Board: Paediatric Pharmacy.

Intramuscular injections were applied to ventrogluteal site.



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DATA ANALYSIS

Statistical analysis was performed with Statistical Package For Social Science (SPSS) 20.0 .



In evaluation of data

chi-square,

Mann-Whitney U and Kruskal Wallis

tests were used.

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ETHİCAL APPROVAL



For the research;

The study was approved by the local ethics committee and the hospital.

All participants received an explanation of the study before participating and gave informed written consent before voluntary participation.

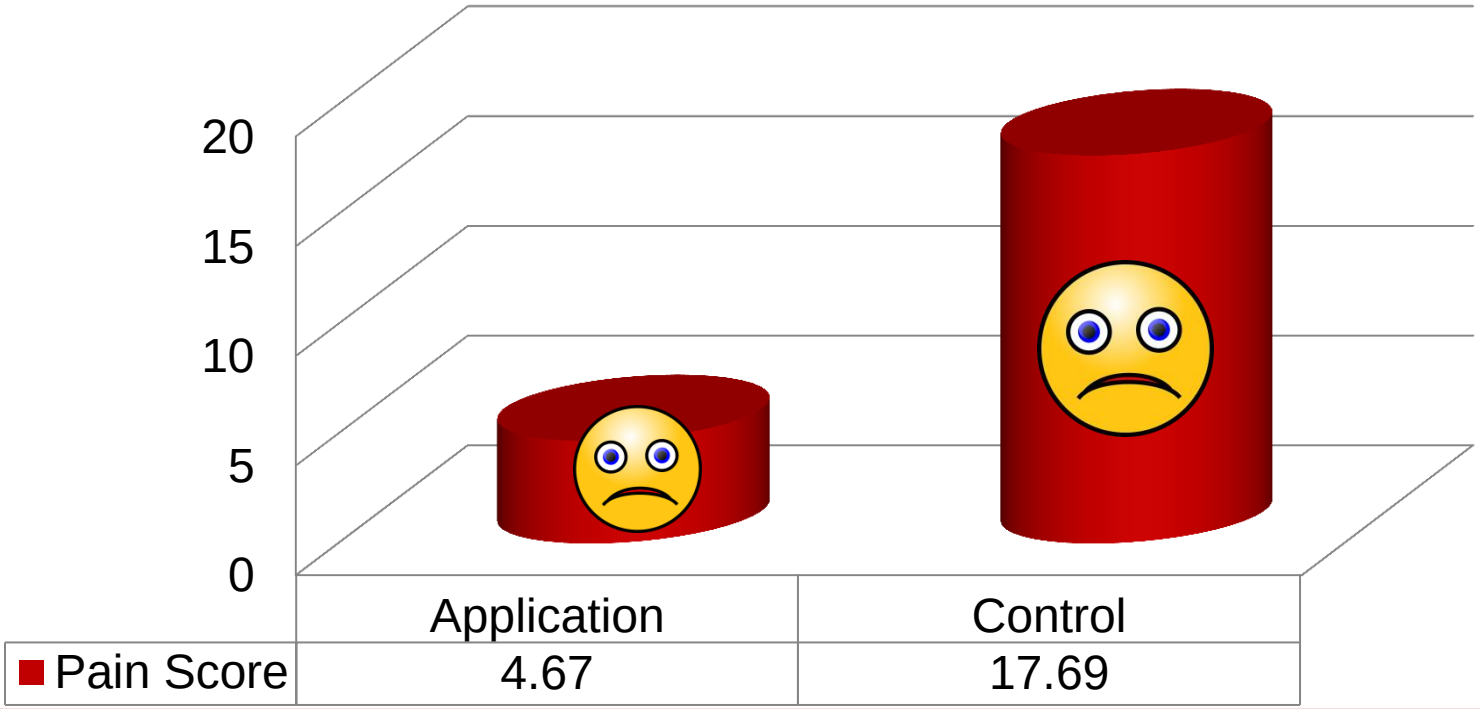
RESULTS

60 patients were recruited to the study, with ages ranging from 25 to 85 years, mean age 52.17 years (SD=1.65).



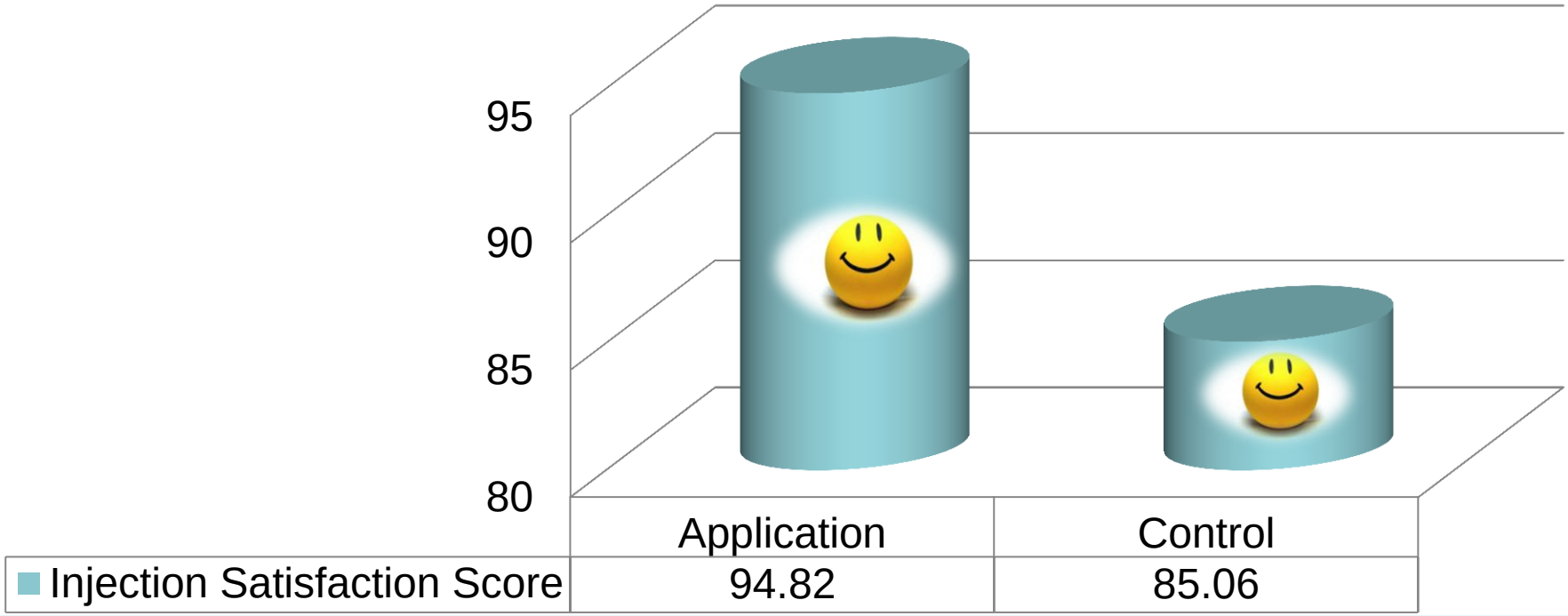
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PAİN SCORE



There was a significant lower pain intensity score application group than control group (M-U= 83) (p= 0.000).

INJECTION SATISFACTION SCORE

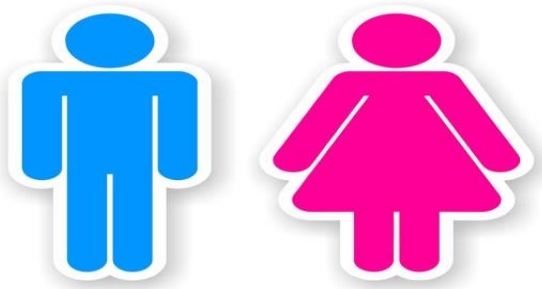


There was a significant higher injection satisfaction score application group than control group (M-U= 114.5) (p= 0.000).



	PAIN		SATISFACTION	
Age Group	**Application**	**Control**	**Application**	**Control**
25- 55	5.56±6.41	18.50± 6.78	94.39±6.26	87.25±16.91
56-85	3.60±1.92	16.88±12.37	95.33±2.87	82.88±16.09
	M-U* = 112.5 **p**=0.409	**M-U***= 97.5 **p**=0.249	**M-U***= 134.5 **p**= 0.985	**M-U***= 121.5 **p**= 0.806

There was no statistically significant difference pain and injection satisfaction score in age between application and control group.



	PAIN		SATISFACTION	
GENDER	**Application**	**Control**	**Application**	**Control**
Famale	3.70±2.32	17.23±7.59	95.85±2.96	84.73±15,62
Male	6.15±7.26	18.70±14.07	93.23±6.88	85.80±6.86
	M-U*= 89.5 **p=** 0.130	**M-U*=**104 **p=** 0.807	**M-U*=** 100 **p=** 0.266	**M-U*=** 92 **p=** 0.463

There was no statistically significant difference pain and injection satisfaction score in gender between application and control group.



	PAIN		SATISFACTION	
EDUCATİONAL LEVEL	**Application**	**Control**	**Application**	**Control**
primary school and below	4.00±2.14	17.85±10.42	95.27±3.13	83.96±14.21
Middle school and over	7.14±10.11	16.80±6.72	93.14±9.30	91.00±4.95
	M-U* = 89.5 **p=** 0.947	**M-U*=**61.5 **p=**0.755	**M-U*=** 61.5 **p=** 0.807	**M-U* = 37** **p=** 0.112

There was no statistically significant difference pain and injection satisfaction score in educational level between application and control group.



	PAIN		SATISFACTION	
BMI (Body Mass Index)	**Application**	**Control**	**Application**	**Control**
Normal weight	4.43±2.15	13.67±7.89	95.29±3.50	87.33±7.12
Overweight	6.75±7.61	13.85±4.74	93.50±7.26	82.54±19.84
Obese	4.43±2.15	23.38±11.96	95.71±2.81	86.54±15.81
	H= 6.059 **p**= 0.048	**H**=7.825 **p**= 0.020	**H** = 0.365 **p**= 0.833	**H** = 0.021 **p**=0.941

- Overweight patients reported increased pain intensity compared with normal and obese patients in application group.
- Obese patients reported increased pain intensity compared with normal and overweight patients in control group.
- There was no statistically significant difference injection satisfaction score in BMI between application and control group.

CONSEQUENTLY;



it was determined that Buzzy® device was an effective method in decreasing injection pain

and in improving post-injection satisfaction.

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In the literature;

It has been learnt that the studies

with Buzzy are also applied at IM injection, vaccination and venipuncture on the children.

•Baxter AL, Cohen LL, McElvery HL, Lawson ML, von Baeyer CL., An integration of vibration and cold relieves venipuncture pain in a pediatric emergency department. Pediatr Emerg Care. 2011 Dec;27(12):1151-6.

•Russell K., Nicholson R., Naidu R., Reducing the pain of intramuscular benzathine penicillin injections in the rheumatic fever population of Counties Manukau District Health Board, Journal of Paediatrics and Child Health 50 (2014) 112–117

•İnal S., Kelleci M. (2010). Externel Thermomechanical Stimulation And Distraction Are Effective On Pain Relief Of Children During Blood Draw. 14th International Nursing Research Conference, Burgos

•Canbulat N, Ayhan F, Inal S. Effectiveness of External Cold and Vibration for Procedural Pain Relief During Peripheral Intravenous Cannulation in Pediatric Patients.Pain Management Nursing, 2014 Jun 6 S1524-9042.

•Whelan HM, Kunselman AR et al. The Impact of a Locally Applied Vibrating Device on Outpatient Venipuncture in Children. Clin Pediatr 2014 Jun 12. N=64 children, 7 phlebotomists

•Inal S, Kelleci M. Buzzy relieves pediatric venipuncture pain during blood specimen collection. MCN Am J Matern Child Nurs 2012 Sep;37(5):339-45.

•Baxter AL, Leong T, Mathew B. External thermomechanical stimulation versus vapocoolant for adult venipuncture pain : Pilot data on a novel device. Clin J Pain, 2009 October ;25(8):705-10.



All the studies

with

Buzzy

(different sample and method)

confirm our study.

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RECOMMENDATIONS



Buzzy should be used for reduce IM injection pain by nurses ,

It should be compared another methods which reduce IM injection pain

In order to improve the development of evidence-based on different age group should be research.

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THANKS...