

Needle Fear and Threat in Children

Luay AL-NOURI¹, Sattar JASEM², Abeer ALASSAF¹, Rasha ODEHA¹

¹Department of Pediatrics, College of Medicine, University of Jordan, Amman, Jordan.

²Department of Pediatrics, College of Medicine, University of Baghdad, Baghdad, Iraq.

ABSTRACT

Many families threaten young children with a needle prick as the means of making them disciplined and avoiding unacceptable behavior. Due to this adult behavior, children avoid medical care and are difficult to be examined medically.

This study aimed to investigate how the threat of using a needle might change children's behavior toward medical examination.

The mothers of 88 children, ages 2–12 years who came for a health checkup, were asked whether they ever threatened their children with a needle prick or an injection. Then, the children underwent a standard medical examination.

The threatened and nonthreatened children were 33 and 55, respectively. The threatened children were found to be less cooperative and difficult to be examined. They were scared, crying, agitated, or panicky.

Children who were threatened with a needle or an injection were noncooperative or even hostile to doctors. Hence, it is recommended that therapeutic and prophylactic injections be kept to the minimum and replaced with oral or rectal medications. The means to reduce needle pain ought to be used more freely to ameliorate pain and establish a more cooperative response to doctor's examination. Parents of young children should stop threatening children with a needle prick or an injection as the means of teaching them acceptable behavior and discipline.

Key words: Adult, behavior, children, needle fear, needle prick, needle threat

INTRODUCTION

Needles are used to inject medicines for treating diabetes (1) and cancer (2); allergic immunotherapy (3); dental care (4); vaccination (5); and taking blood samples and biopsies for analysis (6).

These are usually painful procedures for children (7). The pain may make children scared of needles (belonephobia). Many families threaten children with needles, or by taking them to hospital for injection as a punishment for their unacceptable behavior and to teach them discipline (9). This may exaggerate the effect of pain in children's minds and enhance the fear of a needle (belonephobia).

This is an exaggeration of the feeling of pain compared with the painful injury that occurs during daily play activities, such as wooden splinter, laceration, or sprain.

Therefore, it is believed that the threat with a needle may seriously contribute to the child being apprehensive, scared of, or hostile to doctors, making medical examination much more difficult for the doctors.

Correspondence:

Luay AL-NOURI

Department of Pediatrics, College of Medicine, University of Jordan, Amman, Jordan.

e-mail: lamj741@gmail.com

TABLE 1: Reaction of the child to medical examination

Smiling	: The child looks happy and smiling.
Cooperative	: The child does not object to the examination, and is relaxed and responding well.
Scared	: The child has an apprehensive look and shrinks away from the examiner.
Crying	: Obvious lacrimation +/- noise are noted.
Agitated	: The child pushes away the examiner's hand, pushing his/her head and body back.
Panicky	: The child pushes against the examiner with all limbs forcibly, shouting and trying to harm the examiner.

METHOD

To test the validity of the aforementioned assumption, the present study was conducted on children who visited a primary health care center in a town near Baghdad (Beni Saad) with their mothers for a checkup and health education purposes in June and July 2002.

The children's age was 2–12 years. Their mothers were of various educational levels, ranging from Illiterate to college graduates. They were interviewed to see whether their children were actually threatened with a needle prick or an injection. The question was: Did you ever threaten your child with a needle or an injection prick? Then, the children underwent a standard medical examination, and their behavior was recorded carefully according to the lines established (Table 1). A P value of less than 0.05 was considered to be significant.

RESULTS

The study included 88 children, of which 33 (37.5 %) of them were previously threatened and 55 (62.5%) were not.

Of the threatened group, only 24% were smiling or cooperative, whereas 65% were not. Moreover, 75% of the children in the threatened group were unwilling to undergo medical examination compared with 34% of the nonthreatened group. The difference was highly statistically significant (Table 2). So, it was obvious that needle threat played a major role in making the medical examination of these children difficult, since the pain in the child's mind was exaggerated compared with the painful injury that occurs during daily play activities.

All mothers were also asked about the preference to treat their children with the injected medicines compared with oral or rectal routes; 34.5% of the mothers preferred injections.

DISCUSSION

Practicing pediatricians in Jordan and Baghdad often find young children more difficult to examine compared with the children in other countries. Among the possible explanations is the use of painful procedures, especially hypodermic needles for treatment or obtaining samples for analysis. At preschool age, children commonly interpret medical procedures as punishment for being bad (10).

However, threatening the child with a needle or injection is thought to exaggerate this effect. Hence, threatened children in

TABLE 2: The reaction of threatened children to examination.

Child's reaction	Threatened	Not threatened
Smiling	3 (9%)	8 (14.5%)
Co-operative	5 (15.2%)	28 (51%)
Not-frightened	8 (24.2%)	36 (65.5%)
Scared	12 (36.4%)	10 (18.2%)
Crying	6 (18.2%)	5 (9%)
Agitated	5 (15.2%)	3 (5.5%)
Panicky	2 (6%)	1 (1.8%)
Frightened	25 (75.8%)	19 (34.5%)
Total	33	55
	P < 0.05	

the present study were much more unwilling to undergo medical examination. Other factors that may be studied include the time of the last injection received and parents' preference of injections. A limitation of this study was that the investigators were not blinded. This factor should be considered while performing future studies.

Many adults think that threatening with a needle or injection is an effective means of making young children disciplined and avoiding unacceptable behavior (9).

Families may tell the child on vaccinations or injections that it is a painless procedure. The child soon discovers that it is not true and loses confidence in his/her family adults.

So, it is important that families ought to be educated about the benefits of oral and rectal medications for most children's illnesses. Injected medicines have some disadvantages including the pain experienced by the child, higher risk of anaphylaxis, and possibility of injecting an intramuscular medicine into a vein or harming a nerve such as the sciatic nerve.

They also have to be taught the right ways of teaching discipline to children, including praising and rewarding for good behavior, and depriving things that the child loves for bad behavior (11).

The fear of a needle (needle phobia) was found to affect 10% of the population in Western countries and thought to be a sensitive vasovagal reflex that is partly determined genetically. People react through sweating, pallor, nausea, tachypnea, tachycardia, and hypotension, ending up with the loss of posture and consciousness (12). This may apply to some children in Jordan and Baghdad.

Inadequate relief from pain and distress during medical procedures were found to have a long-term negative impact on further pain tolerance and response to pain (13).

So, it is recommended that family adults be urged not to threaten children with an injection and follow the right ways of teaching discipline and proper behavior, as it may be considered as child abuse (14). Confidence in oral and rectal medicines should be strengthened, and intramuscular injections should be avoided as much as possible (15).

Doctors who feel that it is absolutely necessary to use a syringe for vaccination, treatment, or blood sampling should make serious efforts to minimize or abolish pain using local analgesic creams such as EMLA (lidocaine and prilocaine cream) (16), iontophoresis (17), low-dose midazolam (18), nitrous oxide (19), or sedation (2).

The psychological ways of minimizing pain include hypnosis (20), use of microneedles (6), postural techniques (21), or distraction methods (22).

The use of paracetamol was not found to be effective (23), nor was oral morphine (24).

REFERENCES

1. Cemeroglu AP, Can A, David AT, Cemeroglu O, Kleis L, Daniel MS, Bustraan J, Koehler TJ. Fear of needles in children with type 1 diabetes mellitus daily injections and continuous subcutaneous insulin infusion. *Endocr Pract.* 2015; 21(1): 46 – 53.
2. Dufresne A, Dugas MA, Samson Y, Barre P, Marc I. Do children undergoing cancer procedures under pharmacological sedation report pain and anxiety? *Pain Med.* 2010; 11 (2): 215 – 23.
3. de Vos G, Shankar V, Nazari R, Kooragayalu S, Smith M, Wiznia A, Rosenstreich D. Fear of repeated injections in children younger than 4 years receiving subcutaneous allergy immunotherapy. *Ann Allergy Asthma Immunol.* 2012; 109(6): 465 – 9.
4. Armfield JM, Milgrom P. A clinician guide to patients afraid of dental injections and numbness. 2011; SAAD Dig; 27:33- 9 .
5. Taddio A, Ipp M, Thivakaran S, Jamal A, Parikh C, Smart S, Sovran J, Stephens D, Katz J. Survey of prevalence of immunization non-compliance due to needle fears in children and adults. *Vaccine* 2012; 30 (32): 4807-12.
6. Mooney K, Mc Enlay JC, Doneely RE. Children view on microneedle use as an alternative to blood sampling for patients monitoring. *Int J Pharm Pract* 2014; 229(J): 335 – 44.
7. Hands G, Round J, Thomas J. "When someone stabs you": children perspectives of venipuncture. *Arch Dis Child* 2009; 94(6): 466.
8. Dirx JH (ed) *Stedman's Concise Medical and Allied Health Dictionary* (20th edn) Williams and Wilkins, Baltimore 1997: 97.
9. [WWW.bc childrens.ca/.../Helping your child Manage Medical Procedures.doc](http://www.bcchildrens.ca/.../Helping_your_child_Manage_Medical_Procedures.doc). NEVER use the threat of needles to discipline the child.
10. Gleason MM, Shah P, Boris N. Using a Developmental approach to interview children in Klieman RM, Behrman RE, Jenson HB, Stanton BF (eds.) *Nelson Textbook of Pediatrics*, 18 Ed, WB Saunders, Philadelphia, 2007: 103.
11. Sulkes B, Dosa NP. Developmental and Behavioral Pediatrics in Behrman RE, Kliegman RM (eds) in *Nelsons Essentials of Pediatrics* (4th ed), WB Saunders, Philadelphia 2002: 31.
12. Hamilton JG, Needle phobia: A neglected diagnosis *J Fam Pract* 1995; 41(2):169-180.

13. Young KD. Pediatric procedural pain. *Ann Emerg Med.* 2005; 45(2): 160-171.
14. Al-Shail E, Abdulghani E, Al-Dashash H, Murtada J. Child abuse by insertion of insulin needles through fontanel. *Pan Arab J neurosurgery* 2008;12(1): 99-101.
15. Administration of medicines of children 2007, BMJ publishing group, London: 2.
16. Joyce TH III. Topical anaesthesia of pain management before venipuncture. *J Pediatr* 1993; S 24 – 9.
17. Arvidson SB, Ekroth RE, Hansby AMC, Lindholm AH, William – Olsson G. Painless venipuncture – A clinical trial of iontophoresis of lidocaine for venipuncture in blood donors. *Acta Anaesthesiol Scand* 1984; 28: 209-10.
18. Heden L, von Essen L, Frykholm I, Ljungman G. Low – dose oral midazolam reduces pain and distress during needle procedures in children with cancer 2009; *Pediatr Blood and Cancer*; 53(7): 1200-4.
19. Ayers S, Muller I, Mahoney L, Seddon P. Understanding needle – related distress in children with cystic fibrosis. 2011; 16(Pt2): 329-43.
20. Fung E. Psychological management of fear of needles in children. *Hemophilia* 2009; 15(2): 635-6.
21. Sparks LA, Setlik J, Luhman J. Parental holding and positioning to decrease IV distress in young children: A randomized controlled trial. *J Pediatr Nursing* 2007; 22(6): 440-7
22. Murphy G. Distraction Techniques for venipuncture: A review. *Pediatr Nursing* 2009; 219(3): 18
23. Heden L, von Essen L, Ljungman G. Effect of high-dose paracetamol on needle procedures in children with cancer- an RCT. *Acta Paediatr* 2014; 103 (3): 341-9
24. Heden LE, von Essen L, Ljungman G. Effect of morphine in needle procedures in children. *Eur J Pain* 2011; 15(10): 1056-60.