ASSESSMENT, INTERVENTION AND RESTRAINT OF ‘UNCOOPERATIVE’ BEHAVIOR DURING PROCEDURES

Dennis Paul Nutter DDS
BEHAVIOR MANAGEMENT IS PAIN MANAGEMENT DURING INVASIVE PROCEDURES

Dennis Paul Nutter DDS
Disclosure

I am an Expert Witness on the effects of pain and use of restraints in Pediatric Dentistry.
Historically, we target “Behavior” because . . .

1. Allows a pivot from an assessment of pain to an assessment of anxiety, or . . .
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1. Allows a pivot from an assessment of pain to an assessment of anxiety, or . . .

2. Willful oppositional conduct
Targeting “Behavior” makes pain assessment vulnerable to evaluator bias.

Over 50 Randomized Control Trials

Perform a Meta Analysis of two critical Outcome Measures.

- (1) Was there a difference in behavior between the two groups?
- (2) Was treatment completed?

Sedation of Anxious Children Undergoing Dental Treatment
(1) Was there a difference in behavior between the two groups?
(1) Was there a difference in behavior between the two groups?

Confound measurement of movement
(2) Was treatment completed?

1) Majority completed treatment plan regardless of behavior
2) When they did not complete intended treatment plan, BEHAVIOR WAS IMPROVED.
Altered Treatment Plan
The problem is hypothesized to be related to a clinician’s ‘Management Style’

Use of Restraint and Management Style as Parameters for Defining Sedation Success: A Survey of Pediatric Dentists

Kaaren G. Vargas DDS, PhD, John E. Nathan DDS, MDS, Fang Qian PhD, Ari Kupietzky DMD, MSc. Pediatric Dentistry, 29(3); 2007
How assessment method influences treatment decisions

47% Agreed

Authoritarians

28% Disagreed

Child Advocates

“I would define sedation as ‘successful’ if treatment objectives are accomplished and general anesthesia is avoided (despite a need for persistent use of restraint).”
When a child is having a procedure performed by a Dentist and the Mother is present in the procedure room:

**Who is the best person to decide how much pain a child is experiencing?**

- Dentist: 45%
- Child: 54%
- Parent: 1%
The problem is a fundamental disagreement about who decides how much pain a child is experiencing.

2012:

The behavior assessment practices of Pediatric Dentists

Nutter Dennis P, Goddousi Shahin, Soltani Sahand, unpublished results.
Authoritarian

Outcome

Problem

Advocate
Pain is what the DENTIST says it is

Pain is what the CHILD says it is

Problem

Authoritarian Outcome

Child Advocate Outcome
Neurobiologic and clinical evidence and factors unique to the clinician support the "Advocate" approach.

1. Dentists tend to underestimate pediatric pain

Assessment of pain by the child, dentist, and independent observers.


Versloot J, Veerkamp JSJ, Hoogstraten J,
2. Pain is Subjective!

- Pain experience is not directly related to the Pain Stimulus
- Cannot know where the pain tolerance threshold is for any given child.
2. Pain is Subjective!
Pain sensation evoked by observing injury in others

Jody Osborn and Stuart W.G. Derbyshire

PAIN®
Volume 148, Issue 2, Pages 268-274 (February 2010)
DOI: 10.1016/j.pain.2009.11.007
Vicarious Pain Experience

3. There is no clinically available, objective measure of pain that is better than the patient’s self report.

- Why measure pain?
  1) Evaluator bias.
  2) Refine one’s pain interventions.
  3) Pain justification

- The most consistent observable cue for procedure pain intensity, regardless of age, is facial expression

- Pain Magnification
Functional Near Infrared Spectroscopy
First principle of good, clinical pain practice

“only the child can know how much pain they are experiencing.”
4. The risk is great if a clinician underestimates a child’s pain.

An estimated 92 million Americans are afraid to get the dental work they need.

–Journal of the American Dental Association

Change patients’ lives. Revitalize your practice.
Neuron A = before sensitizing stimulus training
Neuron B = after sensitizing stimulus training

- Under general anesthesia, use heart rate as an indicator of breakthrough pain signaling.
Developmental Dimension
Central Sensitization and NGF

- A critical role for IGF-II in memory consolidation and enhancement
  Chen DY, Stern SA et al.

Nature 469, 491–497 (27 January 2011) doi:10.1038/nature09667
Second principle of Good Clinical Pain Practice is . . .

It is better to prevent pain than treat it after it has occurred.

Err on the side of caution.
6. “Misbehavior” is driven by a reflexive pain behavior.
Forms of Distress

Pain

Non Nociceptive Distress
Texture
Light
Taste
Smell

Misbehavior

Anxiety
Depression, Anger
Forms of Distress

In a *procedural setting*, misbehavior is:

- Operantly Conditioned Expression of Classical Fear Conditioning
- Genetic programming for Anxiety?
- Limit to a child’s “freedom of will”
Pain Justification

Revision of Pain Report

- Permits a revision of the pain reports to a lower value when knowledge of the physiologic conditions for nociception makes it reasonable to do so.

- Two contexts

  Non invasive

  Invasive
Neurobiologic considerations affecting intervention
Assessment of children’s distress during painful medical procedures.

*Health Psychology* 2:133-147, 1983.

- Children under 7 tend to display 5 times more distress for the same medical procedure.
  - Correlates with Piaget’s third stage of development.
  - Correlates with development of brain areas devoted to attention.
- Rationale for CaM BRA deferral of treatment in children.
- Rationale for Modulated Invasiveness of procedures.
Avoid Needle Procedures in Children under 7 years of age

Local anesthesia is a phantom limb sensation
Pain Inhibitory Control

Voluntary Control of Attention
Attentiveness is prevented by a delay in cortical maturation.

Proceedings of the National Academy of Science.
104(49);19649-19654, December 4, 2007.
Poor control of emotion increases pain experience

Control of emotion increases with age

Effects of catastrophizing on pain perception and pain modulation


Weissman-Fogel I, Sprecher E, Pud D.
Pain Inhibitory Controls/Down Modulators

- Autonomic Pain Inhibitory Controls
  - Diffuse Noxious Pain Inhibitory controls
  - Descending Noxious Pain Inhibitory controls

- Conscious Control Pain Inhibitory Controls
  - Voluntary Control of Attention
  - Control of Emotion
  - Cognitive Threat vs. Non-threat processing
Midazolame and Anterograde Amnesia

- Dose Related
- Amnesia achieved only 70% to 90% of the time.

- The anterograde amnesia affects only explicit memory, and not the reflexive (implicit) memory of a distress/pain experience.
“...study showed that midazolam impaired explicit memory while leaving implicit memory intact"
The quality of the restoration does not define the quality of your treatment.
- 5 year old
- Highly anxious, orally aversive
- Poor Attention span
- Scheduled for separate desensitization then ITR.
- No Needle procedure
6 months later
One year after placement
One year, six months after placement
4 months after band cementation

(Two years, one month after initial ITR placement)
One year five months after band cementation
Three years after initial placement of Therapeutic Restoration (TR)

- No conscious sedation
- No needle procedures
- No pain score greater than a two on a ten point scale
Intervention

- After 3 years, 11 months of daily, evening MI Paste Plus and periodic Fluoride Varnish.
- Child is 5 years, 5 months old.

- After 3 months of daily, evening MI Paste Plus and one office application of Fluoride Varnish.
- Began therapy @ 18 months old.
- Child is now 21 months old.
Transitional Outcome

CamBRA Deferral

- Appropriate (increased) frequency of recall
- Fluoride Varnish, office application
- MI Paste Plus, Home Application
- Must eliminate problematic diet, frequency or hygiene
Before

After 3 years, 11 months of non invasive therapy

- “Modulated Invasive” technique
- (No needle procedures)
- Zero pain score
- No general anesthesia
- No conscious sedation
Restraint
DENTAL ABUSE?

Small Smiles Investigation
Langley Park, Maryland

KEEPING THEM HONEST
DENTIST CHAIR NIGHTMARE
VENT TOTAL LOSS TO ISIS RAGE ON, GROUP SAYS
Protective Stabilization

- "Protective" or "stabilizing" but never both
- Not an intervention for procedural "misbehavior".
- Justified Sensor Distress = risk of sensory morbidity is less than risk of alternate interventions or non intervention.
Consent for “Stabilizing” Restraints requires that Parents be informed that . . .

1) Future pain experience may become amplified so that things that did not hurt before may now hurt.”
Consent for ‘Stabilizing ’ Restraints requires that Parents be informed that . . .

2) Their child’s ability to cooperate for future necessary medical treatments may be impaired.
Consent for “Stabilizing” Restraints requires that Parents be informed that...

3) A traumatically painful event in childhood is more profoundly remembered than the same event as an adult.
Consent for “Stabilizing” Restrains requires that Parents be informed that...

3) May experience suffering
Consent for ‘Stabilizing’ Restraints requires that Parents be informed that . . .

3) May experience *loss of trust*
The Future of Behavior Guidance

Pain Justification

Assessment
- Pain
- Anxiety
- Other Sensory Distress
- Attention

Sensory Interventions
- General Anesthesia
- Local Anesthesia
- Oral Sedation

Psychological Interventions
- Desensitization
- Distraction
- Guided Imagery
- Modeling
- Operant Conditioning
- Nitrous Oxide

Stimulus Interventions
- ITR (Intermediate Therapeutic Restorations)
- CaMBRA Deferral
Pain intensity is what the child says it is.