

Nonpharmacologic pain management

Kathy Davis, PhD, MEd
University of Kansas SoM; Dept of Pediatrics
kdavis2@kumc.edu



Disclosure

- I have no relevant financial relationships with the manufacturers(s) of any commercial products(s) and/or provider of commercial services discussed in this CME activity
- I do not intend to discuss an unapproved/investigative use of a commercial product/device in my presentation.



Responsibility to address pain in children.

Reduction of pain is both a professional imperative and an ethical expectation because untreated pain has detrimental consequences such as greater pain sensitivity in later childhood and may lead to permanent neuroanatomical and behavioral abnormalities as demonstrated in animal models.

Lidow 2002, Carbajal et al 2004, Vinall & Grunau 2014, den Hoogen et al 2017



Barriers to Pediatric Pain Control

- Belief that children, especially infants, do not feel pain the way adults do
- Lack of routine pain assessment
- Lack of knowledge in pain treatment
- Fear of adverse effects of analgesics, especially respiratory depression and addiction
- Belief that preventing pain in children takes too much time and effort

Pediatrics, 18 (3) 2001

5 General Principles of Pain Management

- Anticipate & prevent pain
- Adequately assess pain
- Use multi-modal approach
- Involve parents
- Use non-noxious routes

*non-noxious – is not harmful or injurious to health or physical well-being.

Pediatrics in Review 2003; 24 (10)

The Terminology

- **“Complementary”** - using a non-mainstream approach *together with* conventional medicine.
- **“Alternative”** - using a non-mainstream approach *in place of* conventional medicine. <http://nccam.nih.gov/health/whatiscom>
- **“Integrative medicine or integrative health care”** – Most often associated with managed care in US.
- May also refer to patient centric care for populations with physical, developmental or cognitive disabilities and related chronic conditions or complex illnesses. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1480401/>

Terminology

- National Center for Complementary and Alternative Medicine (NCCAM) – NIH
- **Natural remedies** - herbs (also known as botanicals), vitamins and minerals, and probiotics. They are widely marketed, readily available to consumers, and often sold as dietary supplements.
- **Mind and Body Techniques** - large and diverse group of procedures or techniques administered or taught by a trained practitioner or teacher.

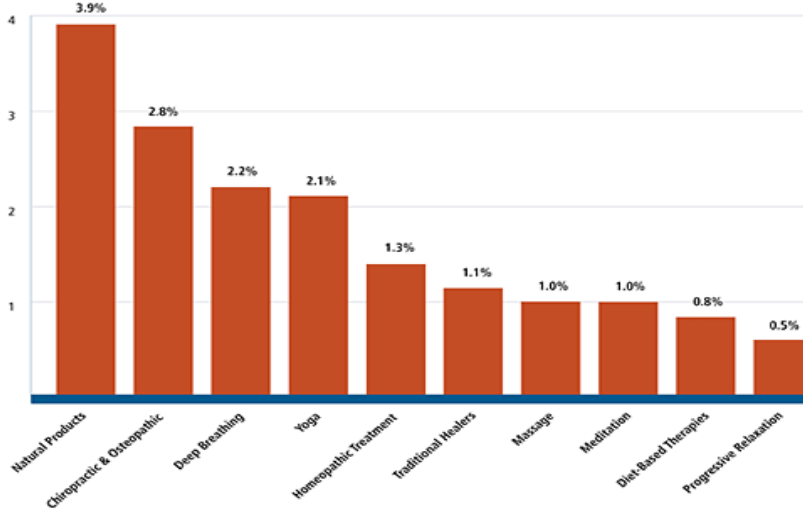
<http://nccam.nih.gov/health/whatiscom>

Terminology

- Other **complementary health approaches** - traditional healers, Ayurvedic medicine from India, traditional Chinese medicine, homeopathy, and naturopathy.
- **Non pharmacological interventions** is any treatment that does not include prescription or over-the-counter medicines.

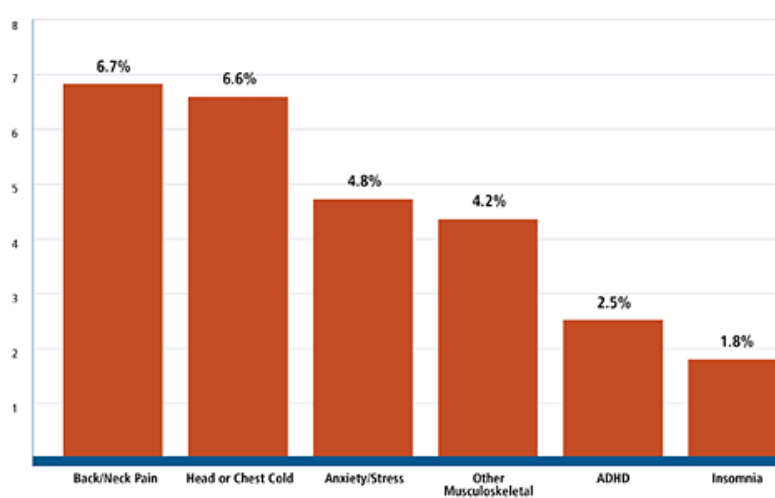
<http://nccam.nih.gov/health/whatiscom>

10 Most Common Therapies Among Children - 2007



Source: Barnes PM, Bloom B, Nahin R. CDC National Health Statistics Report #12. Complementary and Alternative Medicine Use Among Adults and Children: United States, 2007. December 2008.

Diseases/Conditions for Which CAM Is Most Frequently Used Among Children - 2007



Source: Barnes PM, Bloom B, Nahin R. CDC National Health Statistics Report #12. Complementary and Alternative Medicine Use Among Adults and Children: United States, 2007. December 2008.

Practices Used Vary: Age and Health Status

- 10 % of infants are given teas or botanical supplements, usually for fussiness or stomach problems.
- 21 and 42 % of children of kids 2-8 yrs take multivitamins
 - only age group w/ nutritionally adequate diets whether they took multivitamins or not.
- Teens – take products to enhance sports performance, energy levels, or weight loss.
- **> 50 % of kids with chronic medical conditions use some form of complementary health approach, usually along with conventional care.**

Chronic vs acute

Two basic categories of pain experienced by infants and children

Procedural or acute

- Vaccines
- Heel lance
- Venous puncture
- NG tube placement
- Lumbar puncture
- Bone marrow aspirate
- Intubation
- Laceration
- Fracture

Chronic

- Headache
- Abdominal pain
- Fibromyalgia
- Chronic complex regional pain syndrome
- Intubation
- Cancer
- Cystic fibrosis
- Sickle cell

Pediatric patients and pain

- The number of painful procedures was the strongest predictor of poorer psychological outcomes in children who had been hospitalized Rennick, 2004.
- Even in a hospital where pediatric pain control was a priority, 54% of children and caregivers reported no nonpharmacological strategies, 32% reported experience with nonpharmacological strategies and 10% were not sure Harrison et al, 2014.

Anticipatory Pain

- Children's fears may significantly intensify the concept of pain
- Help child BEFORE the painful event, as much as during
- Developmentally appropriate engagement with child
 - Play and distraction
 - Fears – what are they?
 - Talk about the painful event

49 – 87 % of kids in hospitals reported to have pain

Several studies report high prevalence of pain in hospitalized kids with more than half suffering from poorly managed pain.

Johnston CC et al 1992; Cummings EA et al 1996; Taylor EM et al 2008.

Even when nonpharmacological methods of pain management are used with infants and children, it is rarely documented in the medical record so it is hard to prove its efficacy.

Harrison D, Joly C, Chretien C, Cochrane S, Ellis J, Lamontagne C, Vaillancourt R.(2014).

Of those ...

- 7.6% received a psychological, non-pharmacological intervention. Zhu et al 2012

And.....

- Even when nonpharmacological methods of pain management are used with infants and children, it is rarely documented in the medical record so it is hard to prove its efficacy.

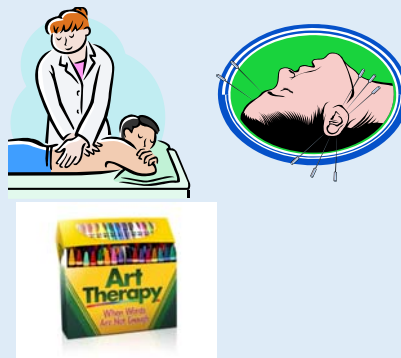
Harrison D, Joly C, Chretien C, Cochrane S, Ellis J, Lamontagne C, Vaillancourt R.(2014).

Very minimal research regarding teaching kids how to control pain



Non-pharmacologic Pain Management

- Physical
 - Massage
 - Heat and cold
 - Acupuncture
- Behavioral
 - Relaxation
 - Art and play therapy
 - Biofeedback
- Cognitive
 - Distraction
 - Imagery and Hypnosis



PHYSICAL

- Acupuncture
- Breathing
- Bubble blowing
- Positioning
- TENS
- Cannabis extract
- Capsaicin (topical)
- Rub skin
- Numbing cream
- Tylenol, pre-medicate
- Needle free devices
- Sucrose water
- Breastfeeding
- Comfort hold

Buzzy for injections, needle sticks

<http://www.youtube.com/watch?v=BRrKUc2Ulv8>



Behavioral

- Relaxation
- School engagement
- Art and play therapy
- Biofeedback
- Goal setting
- Cognitive Behavioral Therapy
- Avoiding “catastrophizing”
- Exercise
- Lifestyle changes

Cognitive (Psychological or mind-body therapies)

- Distraction
- Imagery
- Hypnosis
- “The Magic Glove”
- Virtual reality
- Music
- Meditation



Parents as coaches

Good News/Bad News

Good news

- We now know, as a result of good research, what helps fetuses, infants and children cope best with painful procedures



Bad news

- We are not doing what we know we should be doing all of the time. Or, even most of the time.



Relaxation for Doctors (if time permits)



Questions? Thank you!

Kathy Davis, PhD, MEd
Associate Professor of Pediatrics
Director, Pediatric Palliative Care, Ethics & Education
3901 Rainbow Blvd. MS4004
Kansas City, KS. 66160
(913) 588-6305 Office
(913) 588-2253 Fax

