



NEWS / PROFESSION

Adverse Events Associated With Chiropractic Care for Children

WHAT DOES THE DATA REALLY SHOW?

Editorial Staff

The January 2007 issue of *Pediatrics*, the research journal of the American Academy of Pediatrics, features a study titled "Adverse Events Associated With Pediatric Spinal Manipulation: A Systematic Review," by S. Vohra, MD, et al. As with previous studies on the purported "dangers" associated with manipulation, this study concludes that "serious adverse events may be associated with pediatric spinal manipulation." Although the co-authors, one of whom is a DC, are quick to add that causation and incidence cannot be inferred and that more research is required, the findings surely will be scrutinized by the mainstream medical community.



In the following interview conducted by Claudia Anrig, DC, Dr. Joel Alcantara, research director for the International Chiropractic Pediatric Association (ICPA), discusses the *Pediatrics* study in detail. Dr. Alcantara comments on what the literature review *really* tells us about the safety of pediatric chiropractic manipulation, particularly compared to common medical procedures; and why the chiropractic profession, should, in his words, "ultimately embrace" these findings.

Claudia Anrig (CA): Dr. Alcantara, in the most recent issue of the journal *Pediatrics*, an article was published regarding adverse events related to chiropractic adjustments in children. Could you give the readers at *Dynamic Chiropractic* a short explanation of what the article entailed?

Joel Alcantara (JA): The article was titled, "Adverse Events Associated With Pediatric Spinal Manipulation: A Systematic Review." As the title implies, it is a review of the scientific literature identifying adverse events associated with spinal manipulation of children. The authors of the study searched eight major electronic databases: Central [second quarter of 2004], Medline [1966-2004], Pubmed [1966-2004], Embase [1988-2004], CINAHL [1982-2004], AltHealthWatch [1990-2004], MANTIS [1900-2005] and ICL [1985-2004]. They found 13,916 articles for consideration and after screening, identified 164 articles for full review. These 164 articles ultimately led to 13 papers that met the inclusion criteria for identifying adverse events associated with spinal manipulation of children. Briefly, the 13 articles documented 14 cases of adverse events. Ten of these adverse events were attributed to chiropractors.

CA: How should we in the chiropractic profession respond to this article?

JA: I think that as a profession, we should look at this paper objectively and ultimately embrace it. Despite the initial reaction by some in the profession that this study may have an anti-chiropractic sentiment, let us really examine what the data demonstrates. First, any health care procedure, allopathic or otherwise, is not without risk. With this said, we should accept the fact, as the authors of the study indicated, that chiropractic is the most common non-allopathic approach in the care of children. Furthermore, chiropractors utilize spinal manipulative therapy more than any other health care profession. As such, it is not surprising that adverse effects would be documented with this procedure. To expect otherwise is unrealistic and immature.

Second, we should look at the data of this study from a perspective which, in my opinion, the authors of the study chose to downplay. In their article, Vohra, et al. (Vohra S, Johnston BC, Cramer K, Humphreys K. Adverse events associated with pediatric spinal manipulation: a systematic review. *Pediatrics*, 2007 Jan;119(1):e275-83. Epub 2006 Dec 18) attest to the estimation that children made 30 million visits to a U.S. chiropractor in 1997 (Source: Lee AC, Li DH, Kemper KJ. Chiropractic care for children. *Arch Pediatr Adolesc Med*, 2000 Apr;154(4):401-7). How many more pediatric chiropractic visits were there from a global perspective?

Add to this the consideration that the literature search by Vohra, et al., went as far back as 1900 and as recent as 2005. In a period of 105 years, with millions of pediatric visits to a chiropractor each year, Vohra, et al., could only document 10 adverse events. They concluded that "adverse events may be associated with pediatric spinal manipulation." In my opinion, their data could have just as easily concluded that eating bananas may be associated with an adverse event.

Third, if you examine the situations associated with the adverse events, they highlight what we at the ICPA have always advocated - that the care of the pediatric patient is not simply a small, scaled-down version of that of the adult. Pediatric chiropractic care requires specialized knowledge and skill, and the approach to every patient (pediatric or otherwise) should begin with a thorough history and physical examination.

CA: One of the statements in the article gives the appearance that pediatricians have taken a strong position against chiropractic care for children: "Despite the fact that spinal manipulation is widely used on children, pediatric safety data are virtually non-existent. Consequently, some pediatricians believe that the use of spinal manipulation on children is dangerous and advise against its use." Do you believe it was responsible for the authors to have included this statement?

JA: Anyone in the pediatric chiropractic arena would not be surprised by the statements made by pediatricians, as quoted above from medical articles or from their own clinical experience, in this era, of so-called "integrative medicine." This medical point of view is egocentric, considering that chiropractors provide this type of care more than any other type of health care profession. The inclusion of this statement was irresponsible; particularly when Vohra, et al., ignored to include the opinion of chiropractors or other practitioners who provide SMT to children.

CA: Further, they noted that several cases involved "delayed treatment," causing severe adverse events. Does delayed treatment or diagnosis only happen in the chiropractic profession? I also found it interesting that they labeled severe headache and stiff neck as "moderate" adverse events and midback soreness and irritability as "minor" events. Do you consider any of these responses significant or a possible concern for parents?

JA: I think it would be safe to say that delayed treatment or diagnosis happens in every health care profession. Again, this study highlights the need to perform a thorough history and physical examination prior to performing any procedure. For the care of children using spinal manipulative therapy, the proper diagnosis may indicate an absolute or relative contraindication to spinal manipulative therapy.

For example, the proper diagnosis may rule out the use of a high-velocity, low amplitude thrust-type of SMT, but it may not necessarily rule out a "non-force technique" without adverse consequences. The paper by Vohra, et al., does not say enough about the many types or modifications of SMT employed, particularly for children.

If you examine the 10 adverse events attributed to chiropractors, four of these adverse events would be categorized as minor adverse events, defined by Vohra, et al., as adverse events that were self-limiting and did not require further medical care. I don't particularly consider severe headache and stiff neck or midback soreness and irritability as significant or a concern for parents. What they highlight is the need for informed consent and the need to talk to the parent about the possibilities.

CA: Speaking of severe to moderate adverse events, could you share any recent medical statistics regarding adverse events when it comes to the care of children by the medical community?

JA: In providing a perspective to the findings of this study, just consider the use of "off-label" medication. "Off-label" medication is medically prescribed medication for a patient with a disorder that was never initially intended to treat that disorder and is not supported by research for that disorder.

A search in PubMed using the subject headings "adverse drug reactions" and "off-label" and related articles turned up 369 papers. It is beyond the scope of this venue to present all the papers, but the bottom line is, when you examine adverse events associated with off-label medications or adverse drug events in general, spinal manipulation in the treatment of children is significantly safer.

CA: The authors of the *Pediatrics* study stated, "Given the large numbers of children who have received spinal manipulation during the decades assessed by our search strategy, adverse events

resulting from spinal manipulation are either remarkably rare or underreported." In your opinion, which of the two would you consider to be a more accurate account?

JA: Given the historical animosity by medicine toward chiropractic, there is no doubt in my mind that if an adverse event occurred following chiropractic care, it would have been documented by medicine. Given the data, I would consider this study as pointing to adverse events resulting from SMT as rare and relatively safe.

CA: Dr. Alcantara, I'm sure you agree that our profession does need more research in the field of pediatrics. My question is, how do we get there and who should be involved?

JA: As a profession, we need more research. In the field of pediatric chiropractic, we definitely need more research. If you examine the research performed involving pediatric patients, it highlights the need for lower-level design studies, such as case reports, to quasi- and pre-experimental types of studies. The RCTs performed involving children thus far have been somewhat disappointing since, in my opinion, we did not really examine all the variables in providing care to children. We can do this only with case reports, case series or better yet, a large prospective cohort study.

This is what the ICPA is moving toward - a practice-based research program, one in which our members and interested practitioners are involved directly in the research. Their clinics provide the data on the chiropractic care of children. With over 2,000 members, can you imagine not only the volume but also the type of data that could be obtained from these practitioners? There are many other ways to get involved in pediatric chiropractic research; this could range from writing a case report or case series, to publishing a review of the literature, to just simply donating to organizations - such as the ICPA - that conduct research involving pediatric chiropractic.

CA: Thank you.

Editor's note: Dr. Joel Alcantara is a 1995 graduate of Palmer College of Chiropractic West. From 1996-2001, he served as a full-time researcher at the Palmer Center for Chiropractic Research and eventually at Life Chiropractic College West. In 2001, he was appointed research director of the International Chiropractic Pediatric Association.

A noted international lecturer on chiropractic, particularly pediatric chiropractic, Dr. Alcantara has been an invited speaker at various scientific conferences throughout the world and has co-authored several scientific papers published in peer-reviewed journals and the popular chiropractic media. He is a contributing author of such textbooks as *Pediatric Chiropractic*, by Anrig and Plaughter; *Somatovisceral Aspects of Chiropractic: An Evidence-Based Approach*, by Todres-Masarsky and Masarsky; and *Fundamentals of Chiropractic*, by Redwood and Cleveland.

To contact Dr. Alcantara with general questions and comments, including information on how to join the ICPA and/or its research program, e-mail research@icpa4kids.com.

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