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CLINICAL EVIDENCE

Chiropractic care of paediatric non-musculoskeletal conditions:

A retrospective patient survey.

Martin G. Rosen and Charles L. Blum

Abstract: This paper attempts to facilitate a glimpse into a chiropractic clinical practitioner's office where non-musculoskeletal conditions are routinely being treated.

Methods: As standard practice of this office an active group of paediatric patients (2000-07) were (n=127) sent a questionnaire via the mail. For the purposes of this retrospective patient survey children treated for non-musculoskeletal symptoms (n=37) out of those who responded to the questionnaire were used for this survey. All paediatric patients were treated by the same clinician utilising sacro occipital technique and cranial paediatric treatments.

Results: 65/127 parents responded from our standard follow up outreach and 37/65 were treated for non-musculoskeletal presentations. Of the 37 (17?, 20?) non-musculoskeletal paediatric patients, five were treated for immune dysfunction, seven for developmental delays/dysfunction, nine for birth trauma, one for seizure activity, four for learning problems, three for endocrine problems, three for migraines, two gastrointestinal issues, two for fussiness/agitated/anxiety, and one for enuresis.

Discussion: Developing a paediatric chiropractic evidence base for practicing doctors should start with expanding the doctor's knowledge of paediatric diagnosis and treatment options.

Conclusion: To build a representative evidence base it is essential that research into chiropractic treatment of non-musculoskeletal conditions incorporates successful chiropractic clinical practices treating this subset of paediatric patient.

Indexing Terms: Paediatric care, chiropractic, sacro-occipital technique, cranial technique, non-musculoskeletal conditions.

Introduction

A call has been made for more rigorous scientific inquiry to examine the value of manipulative therapy in the treatment of paediatric conditions. [1) Simultaneously there have also been inquiries by our scientific community attempting to isolate what subset of patients with non-musculoskeletal conditions might respond to chiropractic care (2, 3, 4, 5). While there is a scarcity of published literature relating to the chiropractic treatment of non-musculoskeletal conditions (6), particularly of paediatric patients, some degree of evidence for this care has been found in the literature (7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, 23).

... this patient survey reports a range of non-musculoskeletal conditions treated in paediatric patients to the satisfaction of parents'

This paper attempts to facilitate a glimpse into a chiropractic clinical practitioner's office where non-musculoskeletal conditions are routinely being treated.

There are some specific difficulties with performing research with children, this is because:

- Information is usually gathered second hand from their parents or via parent/doctor observation; and
- Randomized controlled studies have limitations since children by nature of their age are not considered competent to give consent to participate in experimental studies.

While randomized controlled studies are the preferred option for investigative studies, observational studies may also offer valuable information. (24) Case reports have a tendency to represent a positively biased presentation of selectively chosen patients by a doctor, yet still in some instances they may offer an important glimpse into what is taking place in chiropractic clinical practice.

This patient survey study was approved by IRB of the Cleveland Chiropractic College in 2008.

Methods

As standard practice of this office for follow up, patient control, and management, parents of an active group of paediatric patients (n=127, years 2000-07) were sent a questionnaire (Figure 1) via the mail. The treating doctor developed the questionnaire as a means to understand the outcome to care rendered, to improve the quality or type of care rendered at the office, and to give parents an opportunity to report on adverse or positive patient reactions to the care received. Responses to the survey that were not related to the questions asked, such as booking future appointments or questions about finances, were handled by the office's front office personal with follow up telephone calls.

In brief, the questionnaire inquired about follow up information on their child's response to care. For the purposes of this case series children treated for non-musculoskeletal symptoms (n=37) out of those who responded to the questionnaire were used for this case series. Data were extracted from questionnaires that met the above inclusion criteria and were entered into a SPSS spreadsheet for tabulation. All paediatric patients were treated by the same clinician. In all cases active chiropractic care consisted of sacro occipital technique and cranial paediatric treatments (25, 26, 27), 5/37 cases ancillary procedures were used to improve neurological function including: cross patterning, biofeedback, early intervention, and targeted exercise were utilised, and in 4/37 nutritional support or homeopathic allergy desensitisation was utilised.

Results

65/127 parents responded from our standard follow up outreach and 37/65 were treated for non-musculoskeletal presentations (Table 1). Survey response rate was ~50% and for the non-NMS group and ~97% reported significant improvement. Of the 37 (17 male, 20 female) non-musculoskeletal paediatric patients, 5 were treated for immune dysfunction, 7 for developmental delays/dysfunction, 9 for birth trauma, 1 for seizure activity, 4 for learning problems, 3 for endocrine problems, 3 for migraines, 2 gastrointestinal issues, 2 for fussiness/agitated/anxiety, and 1 for enuresis.

Immune dysfunction presentations (n=5, 3 male, 2 female) consisted of children (1.2-6 years old) with allergies, asthma, chronic otitis media, eczema, chronic congestion, and chronic recurring coughs, needing between 5-20 (average 11.4) office visits until significant improvement was noted by parent and doctor. Developmental delays/dysfunction presentations (n=7, 4 male, 3 female) consisted of children (5 months-6 years old) with difficulties with verbal skills, motor

Table 1: Results of patient survey

Symptom/Condition Category	N=37 Breakdown	Age Range	Average # of Adjustments	Gender	
				Male	Female
Immune System	5	1.2 – 6 years	11.4	3	2
Developmental Delays/ Dysfunction	7	5 mos. – 6 years	10.1	4	3
Birth Trauma	9	3 days – 1.8 years	5.5	5	4
Seizure Activity	1	3.4 years	1		1
Learning Problems	4	2.4 – 13.4 years	6	3	1
Endocrine Problems	3	8.6 – 14 years	13		3
Migraines	3	8.3 – 14 tears	3.3	1	2
Gastrointestinal Issues	2	2 weeks – 1year	4	1	1
Fussiness/Agitated/ Anxiety	2	2– 3 months	3		2
Sleep Problems	1	9.4 years	14		1

skills/coordination, ambulation, visual dysfunction, and tics – vocal and physical, needing between 5-14 (average 10.1) office visits until significant improvement was noted by parent and doctor.

Birth trauma presentations (n=9, 5 male, 4 female) consisted of children (3 days-1.8 years old) with secondary birth difficulties due to C-section, vacuum delivery, and premature birth associated with difficulty with nursing and ability to latch-on, needing between 1-12 (average 5.5) office visits until significant improvement was noted by parent and doctor. Seizure activity presentations (n=1 female) consisted of a child 3.8 years old, significant improvement was noted after one treatment. Learning problem presentations (n=4, 3 male, 1 female) consisted of children (2.4-13.4 years old) with ADD, ADHD, Asperger's Syndrome, and verbal issues, needing between 1-9 (average 6) office visits until significant improvement was noted by parent and doctor. One of the four children (male 7.25 years old) received 28 office visits and while showing improvement of objective findings his ADHD, focus and impulse control issues did not respond to care.

Endocrine problem presentations (n=3 female) consisted of children (8.6-14 years old) with low HGH/stature, menarche symptoms, and thyroid dysfunction (Hashimoto's disease), needing between 3-18 (average 13) office visits until significant improvement was noted by parent and doctor. Migraine headache presentations (n=3, 1 male, 2 female) consisted of children (8.3 – 14 years old) needing between 1-6 (average 3.3) office visits until significant improvement was noted. Gastrointestinal dysfunction presentations (n=2, 1 male, 1 female)) consisted of child with colic and another with reflux (2 weeks and 1 year old) needing between 2-6 (average 4) office visits until significant improvement was noted by parent and doctor. Patients (n=2 female) seen for fussiness/agitated/anxiety were 2 and 3 months old needing between 1-5 (average 3) office visits until significant improvement was noted by parent and doctor. One female patient (9.4 year old) presented with enuresis needing 14 office visits until significant improvement was noted by parent and doctor.

With the care of the paediatric patient it is often difficult to objectively determine their specific personal symptomatic response to care so commonly the response to care is determined by patient behaviour as witnessed by the parent and doctor. While this may offer valuable information it is the not the same as when an adult who understands questions and the

ramifications of their answers responds to the treatment rendered to them personally. This is however the challenge of investigating paediatric treatment and response to the care rendered.

Discussion

A challenge in evidence-based healthcare is integrating historically successful clinical practice with current published research. Before the benefit of an intervention is investigated reasonable study into possible risks should be determined. A 3-year retrospective study of paediatric patients younger than 3 years of age (n = 781) from the Anglo-European College of Chiropractic (AECC) teaching clinic practice in Bournemouth, England determined that chiropractic manipulation produced very few adverse effects and was a safe form of therapy in the treatment of patients in this age group. (28) In one study investigating chiropractic therapy a survey of practitioners found of the 812 clinical cases, 717 indicated experiencing an improvement with their presenting symptoms, while 9 patients reported treatment-related aggravations. These were described as 'soreness' or 'fussy.' No treatment-related complications were reported (29). Another similar study this one a survey of parents (n=389) of the children (n=389) receiving care (n= total of 3048 office visits) no treatment-associated complications were reported. Two cases ('soreness and stiffness') of treatment-related aggravation were reported but were self-limiting. [30)

Developing a paediatric chiropractic evidence base, particularly one for non-musculoskeletal conditions, for practicing doctors would likely start with expanding the doctor's knowledge of paediatric diagnosis and treatment options. This process could involve a certification process such as one by the *International Chiropractic Pediatric Association* (ICPA) that has postgraduate 180-hour certification and 360 hour diplomat programs.

Implementing chiropractic adjustive techniques on newborns, infants, and young children is completely different from dealing with the adult patient so learning appropriate chiropractic therapeutic interventions to mitigate any adverse response to treatment (31) may be important. Sacro occipital technique (SOT) has protocols that are indicator based and offer the low force techniques may be better applied to a young child. Cranial techniques, which are part of SOT's system of analysis and treatment maybe indicated to address some newborn and developmental conditions.

Differentiation between doctors who have had post-graduate studies and became certified in paediatric as well as other forms of chiropractic technique suited for paediatric care may become essential to explore chiropractic's care of children. It would seem logical that a chiropractor better trained in paediatric care would yield better outcomes than another chiropractor who has little to no training. It seems reasonable that chiropractic paediatric practitioners who are using SOT and cranial procedures should be adequately trained in paediatrics and SOT/cranial care, possibly through certification programs. Part of this training should be to know when it is appropriate to refer patients for emergency care and working within a complementary and alternative medicine (CAM) arena (32, 32, 34).

This paediatric patient survey was based on a response to questionnaires sent mainly to parents of children receiving ongoing care at this office. It is possible the success in treatment (N=36/37) for non-musculoskeletal paediatric patients in this case series was high because only the parents of patients that were satisfied with their child's care and those who had a positive response chose to respond to the questionnaire. With all case studies investigating patient response without a control or sham intervention it is difficult to determine whether the patient may have improved without care and that the response was part of a natural health related progression. However the temporal nature of the child's response and association with the care rendered as well as the often prior non-response to prior interventions along with some

conditions having a chronic nature, suggests a need for further inquiry into chiropractic care of non-musculoskeletal symptoms.

As the field of chiropractic attempts to address the place chiropractors may have in the field of paediatric care (35, 36) it is essential that the chiropractic research arena incorporates what is taking place in the clinical practices, which are commonly treating children. In a similar vein it is incumbent upon those chiropractic clinicians in practice, who are treating paediatric patients, to find evidence-based methods of responsibly sharing their patient's response to care with their research counterparts.

Conclusion

Since it does appear from this patient survey that paediatric non-musculoskeletal conditions may benefit from SOT and cranial paediatric adjustive techniques there is a greater need to investigate whether these responses to care are individualised to one practitioner or can be generalised to the chiropractic profession.

It is of importance to investigate if chiropractic paediatric adjustive techniques that include treatment of non-musculoskeletal conditions, are actually accomplishing what they purport. Treatment with controls and possibly some sham procedures may be worth greater study. (37) Of essence is integrating successful chiropractic clinical practices treating paediatric patients with non-musculoskeletal conditions and the investigations of the chiropractic research community so that each faction is not functioning independent of one another, thus limiting the building of an accurate evidence base.

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Survey form

PEDIATRIC CASE STUDY

NAME: _____

DOB: _____ AGE: _____ PHONE: _____

ADDRESS: _____

CITY: _____ STATE: _____ ZIP: _____

PARENT OR GUARDIAN: _____

EMAIL: _____

REASON FOR SEEKING CHIROPRACTIC CARE (Please describe in as much detail as possible the reason you have brought your child to this office)

_____

_____

_____

_____

_____

PREVIOUS DIAGNOSIS IF APPLICABLE: _____

_____

PRVIOUS TREATMENT AND RESULTS: _____

_____

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_____

MEDICATIONS: _____

_____

RESULTS OF CHIROPRACTIC CARE (Please be specific regarding the changes that have occurred in your child's original situation)

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