

Focus on Research

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WHEN WORLDVIEWS COLLIDE: MAINTAINING A VITALISTIC PERSPECTIVE IN CHIROPRACTIC IN THE POSTMODERN ERA

The aim of this paper (1), by Cheryl Hawk, DC, PhD, (FCERs researcher of the year in 2005) was to discuss concepts of postmodernism with respect to the opposing worldviews of vitalism and mechanism, and to present an argument for a viable role for vitalism in chiropractic philosophy and research.

The author argues that vitalism is only problematic if we accepted the assumption that a mechanist worldview or paradigm is the correct way to explain the world. Hawk proceeds by examining the assumption that anything that does not fit the mechanist worldview would be a potential threat to our profession's credibility and, therefore, must be modified to fit this view or jettisoned.

The mechanist worldview contends that the world is operationally a machine and therefore can be understood in a rational, linear manner; the whole equals no more than the sum of its parts (reductionism); and there is no reality beyond the physical (materialism). Vitalism, on the other hand, operates on different assumptions: that the world functions more like an organism than a machine, having self-organizing and evolutionary qualities; that the whole is something new created by the interaction of its parts; and that reality is not confined to the physical. Hawk argues that it is essential to understand that both the mechanistic/reductionistic and the vitalistic/holistic worldviews are merely ways of viewing the world, not the world itself. As the "father of general semantics," Alfred Korzybski, said, "The map is not the territory."

In postmodern thought, a multiplicity of worldviews may coexist. One view is no more valid or correct than another and these divergent views are judged best by their utility under various circumstances. Exploring clinical practices and methodologies, such as whole systems research, arising from a vitalistic perspective could lead to innovations in both patient care and research, if pursued with flexible non-dogmatic thinking.

The author concludes,

"Vitalism, approached in a responsible and intelligent manner, may afford the chiropractic profession opportunities to further improve patient care and make contributions to new knowledge."

Reference:

- 1) Hawk C. When worldviews collide: maintaining a vitalistic perspective in chiropractic in the postmodern era. *J Chiropr Humanit* 2005; 12:2-7. Full text PDF file - http://www.journalchirohumanities.com/volumes/vol_12/JChiroprHumanit2005-12-2-7.pdf

WHO SAYS ANOTHER 2.4 MILLION HEALTH PROFESSIONALS NEEDED

The World Health Organization has called for a 10 year global action plan to expand medical training and stem the "haemorrhaging that threatens [healthcare] workforce stability," thus enabling health systems to tackle disease and achieve global goals on health. It says that an extra 2.4 million doctors, nurses, and midwives are needed in the world, with critical staff shortages in 57 countries, mainly in sub-Saharan Africa and South East Asia.

Although the organisation acknowledges that some nations have introduced strategies that increase training capacity and limit the migration of healthcare workers from the world's poorest countries, a

report published this week says that on their own these are "insufficient to deal with the realities of health workforce challenges today and in the future."

Migration of healthcare staff from poor countries to richer nations remains a critical issue, says the report.

Reference:

Kmietowicz Z. Another 2.4 million health professionals needed, says WHO. BMJ 2006; 332:809 (8 April), doi:10.1136/bmj.332.7545.809

QUANTUM EVENTS OF BIOPHOTON EMISSION ASSOCIATED WITH CHIROPRACTIC: A DESCRIPTIVE PILOT STUDY

Biophoton emission (BPE) is a quantum event characterized by a relatively stable but ultralow- rate emission of visible photons from living organisms. It has been associated with high energy processes such as: cell metabolism, growth, phagocytosis, neural activity, and oxidative stress. BPE has also been suggested to reflect the organism's global state of health as well as the response to stimulation including therapeutic interventions. If BPE changes occur as a result of various complementary and alternative medical interventions, this could prove useful to monitor both the patient's response to a specific treatment and global changes in their health status.

A recent descriptive study (1) attempted to identify BPE changes associated with three different chiropractic techniques that use different energetic approaches: mechanical, gravitational, and bioenergetic.

The BPE was measured at the neck and/or the lower back of 3 asymptomatic adult male volunteers. The measurements were made before and after different chiropractic interventions. The treatment techniques included a high velocity joint manipulation with the aid of a drop table, Sacro-Occipital Technique, and Bio-Energetic Synchronization Technique. Enough time was allotted for measurements in order to differentiate between natural fluctuation of the BPE and the changes induced by the interventions.

All techniques induced small (up to 20%) but statistically significant changes ($p < 0.05$ in one case, $p < 0.001$ in the other two) in the BPE. Each technique demonstrated a different pattern of BPE change that may be specific to the technique.

The authors conclude,

"BPE is a noninvasive indicator of the health of the human body and is significantly altered in different ways by chiropractic interventions. Future research is necessary to explore more features of BPE and its utility as an indicator of health, as well as the theoretical and clinical significance of these findings."

ASRF Chiropractic Update Editor's comment -

The authors of a recent biophoton-related literature review (2) concluded, "Photon emission recording techniques have reached a stage that allows resolution of the signal in time and space. The published material is presented and includes aspects like spatial resolution of intensity, its relation to health and disease, the aspect of colour, and methods for analysis of the photon signal. The limited number of studies allow only early conclusions about the implications

and significance of biophotons to health and disease, mental states, and acupuncture. However, with the present data we consider that further research in the field is justified."

References:

- 1) Hossu M, Rupert R. **Quantum events of biophoton emission associated with complementary and alternative medicine therapies: a descriptive pilot study.** J Altern Complement Med. 2006; 12:119-24.
- 2) Wijk RV , Wijk EP . **An introduction to human biophoton emission.** Forsch Komplementarmed Klass Naturheilkd. 2005; 12:77-83.

PHYSICAL ACTIVITY ENHANCES LONG-TERM QUALITY OF LIFE IN OLDER ADULTS

Physical activity has been effective in enhancing quality of life (QOL) of older adults over relatively short periods of time. However, little is known about the long-term effects of physical activity and even less about the possible mediators of this relationship.

Authors of a recent randomized controlled trial (1) examined the mediating effects of psychological variables on the relationship between physical activity and global QOL (satisfaction with life) in older adults over a 4-year period.

Participants (N = 174, Mean age = 66.7 years) completed a battery of psychosocial measures at 1 and 5 years following enrolment in a 6-month randomized controlled exercise trial.

Analysis of results indicated that physical activity was related to self-efficacy, physical self-esteem, and positive affect at 1 year, and in turn, greater levels of self-efficacy and positive affect were associated with higher levels of QOL. Analyses indicated that changes in physical activity over the 4-year period were related to increases in physical self-esteem and positive affect, but only positive affect directly influenced improvements in QOL.

The authors concluded,

“The findings lend support to the position that physical activity effects on QOL are in part mediated by intermediate psychological outcomes and that physical activity can have long-term effects on well-being.”

ASRF Chiropractic Update Editor’s comment -

One means by which the relationship between chiropractic care and patient QOL might be further explored, especially amongst elderly patients, is by exploring whether chiropractic care has any influence on the level of physical activity of elderly patients. The results from another recent RCT (2) suggest that simply counselling patients on physical activity can significantly enhance their long-term well-being.

References:

- 1) Elavsky S , McAuley E , Motl RW , Konopack JF , Marquez DX , Hu L , Jerome GJ , Diener E . **Physical activity enhances long-term quality of life in older adults.** Ann Behav Med. 2005; 30:138-45.
- 2) Anderson RT , King A , Stewart AL , Camacho F , Rejeski WJ . **Physical activity counseling in primary care and patient well-being: Do patients benefit?** Ann Behav Med. 2005; 30:146-54.

THE EFFECT OF SACROILIAC JOINT MANIPULATION ON DEEP ABDOMINAL MUSCULATURE ACTIVATION TIMES

A recent study (1) aimed to,

- 1.) Determine the incidence of delayed feed-forward activation (FFA) times in a group of healthy young males;
- 2.) Retest those subjects who showed delayed FFA after 6 months to determine the reliability of the measure in the absence of treatment or injury in the intervening period; and
- 3.) Determine the effect of sacroiliac joint manipulation on delayed FFA times.

Ninety young males were assessed for the FFA of their deep abdominal muscles in relation to rapid upper limb movements. Those who met the criteria for delayed FFA (failure of deep abdominal activation within 50 milliseconds of deltoid activation) were then reassessed 6 months later. These subjects then underwent sacroiliac joint manipulation on the side demonstrating decreased joint movement during hip flexion and lateral flexion. Feed-forward activation times were then reassessed after joint manipulation.

The authors report that seventeen (18.9%) of 90 subjects met the criteria of impaired FFA. Thirteen of 17 were available to be re-measured at 6-month follow-up.

The intra-class correlation coefficient for FFA at this time was greater than 0.70 for all movement directions. There was a significant improvement (38.4%) in FFA times for this group when re-measured immediately after the sacroiliac joint manipulation.

The authors concluded,

“Delayed FFA is a highly reproducible measure at long-term follow-up. This technique appears to be a sensitive marker of the neural effects of sacroiliac joint manipulation. Future prospective studies are needed to determine if delayed FFA times are a marker for those at risk for developing back pain.”

Reference:

Marshall P, Murphy B. **The effect of sacroiliac joint manipulation on feed-forward activation times of the deep abdominal musculature.** JMPT 2006; 29:196-202.

DOES ANTIBIOTIC EXPOSURE DURING INFANCY LEAD TO THE DEVELOPMENT OF ASTHMA?

Asthma has become the most common chronic disease of childhood, and its increase has coincided with an increase in the use of antibiotics in young children, the researchers pointed out. This has led to the suggestion that the two phenomena are causally linked, although epidemiological evidence is unclear. The objective of a recent meta-analysis (1) of observational studies, retrieved through systematic search of all available electronic data sources, was to **determine the association between antibiotic exposure in the first year of life and the development of childhood asthma.**

Studies included in the meta-analyses were those with populations exposed to one or more courses of antibiotics during the first year of life, and asthma diagnosis was defined as diagnosis by a physician between the age of 1 to 18 years.

The authors found eight studies (four prospective and four retrospective) that examined the association between exposure to at least one course of antibiotics and development of childhood asthma. The total number of subjects for the analysis comparing exposure to at least one antibiotic to no exposure in the

first year of life was 12,082 children and 1,817 asthma cases.

The pooled odds ratio (OR) for the eight studies was 2.05. The association was significantly stronger in the retrospective studies (OR, 2.82) than the prospective studies (OR, 1.12). Five of the eight studies examined whether the association was related to the number of courses of antibiotics taken in the first year of life. The overall OR for the dose-response analysis was 1.16 for each additional course of antibiotics.

The authors conclude,

“Exposure to at least one course of antibiotics in the first year of life appears to be a risk factor for the development of childhood asthma. Because of the limitations of the studies conducted to date, additional large-scale, prospective studies are needed to confirm this potential association.”

ASRF Chiropractic Update Editor’s comment -

The growing body of epidemiological evidence related to this topic seems to be strongly suggesting that,

- A. An increase in childhood asthma has been paralleled by an increase in the use of antibiotics in young children and that,
- B. Many infections in infants are viral in nature such that antibiotics will not be useful and may -- this study suggests -- increase the risk of later asthma in the child.

References:

- 1) Marra F , Lynd L , Coombes M , Richardson K , Legal M , Fitzgerald JM , Marra CA . **Does antibiotic exposure during infancy lead to the development of asthma?** Chest 2006; 129:610-8.

TRENDS IN PRESCRIBING OF ANTIPSYCHOTIC MEDICATIONS FOR US CHILDREN

To identify frequencies of prescribing for antipsychotics among all US children.

Data were drawn from the National Ambulatory Medical Care Survey and the National Hospital Ambulatory Medical Care Survey, which are national samples of health care services rendered to the US population. Survey data were used to determine antipsychotic prescription frequencies for 2-18 year old US children from 1995-2002.

During 1995-2002, there were 5 762 193 visits to health providers by US children during which an antipsychotic was prescribed.

Almost one third (32.4%) of the prescriptions were associated with visits to non-mental health providers.

Fifty-three percent (53%) of the prescriptions were for behavioural indications or affective disorders, conditions for which anti-psychotics have not been carefully studied in children.

The overall frequency of antipsychotic prescribing increased from 8.6 per 1000 US children in 1995-1996 to 39.4 per 1000 US children in 2001-2002 (rate ratio 4.89).

Across all age groups, increases for non-studied indications were even more pronounced than increases for approved indications.

The authors concluded,

“The increase in frequencies of antipsychotic prescribing and the large number of children receiving anti-psychotics each year reinforce the urgent need to conduct well-controlled studies of these medications in children.”

In a separate interview the lead author Dr. William Cooper, a pediatrician at Vanderbilt Children's Hospital stated that the findings are worrisome, "because it looks like these medications are being used for large numbers of children in a setting where we don't know if they work."

Reference:

- 1) Cooper WO, Arbogast PG, Ding H, Hickson GB, Fuchs DC, Ray WA. **Trends in prescribing of antipsychotic medications for US children.** *Ambul Pediatr.* 2006 Mar-Apr;6(2):79-83.
- 2) Tanner L. **More Kids Are Getting Anti-Psychotic Drugs.** *AP Medical Writer Fri Mar 17, 6:36 PM ET.*

RIGOR IN THE PHILOSOPHY OF CHIROPRACTIC: BEYOND THE DISMISSIVE/AUTHORITARIAN POLEMIC

The objective of a recent paper (1), by Brian McAuley DC, PhD, was to illustrate that there is an analytical framework that dichotomizes thinking in the philosophy of chiropractic into two as yet unacknowledged methodological approaches. Furthermore the author uses as a case study the 33 principles of chiropractic, both to illustrate the polemic and to provide an example of how critical inquiry has the potential to advance the understanding of the philosophy of chiropractic and to contribute in a meaningful way toward contemporary health care.

McAuley observes that -

The history and development of the chiropractic profession has been characterized by a dichotomy of thought throughout the past 100 years. This schism has generally been characterized as the “straight/mixer debate”.

Donahue, in describing the origins of the philosophy of chiropractic, acknowledges, “Those on either side of the issue have added little in the ensuing seventy five years that is useful or germane philosophically. If anything, things are more confused than ever with no competent spokesman for either side.”

Dismissivists argue that the notions of the philosophy of chiropractic are not useful or productive. Bachop⁴ represents the viewpoint, “... chiropractors will have to choose which they want to survive: chiropractic or chiropractic philosophy - the profession or the creed.” Likewise, Winterstein states, “... the entire litany of “chiropractic philosophy” and the so-called thirty-three principles (that) are, to a great extent, the reason we continue to carry the label of a “fringe profession” today.” Phillips describes the authoritarian approach, “The dogmatic rhetoric put forth in the name of philosophy in chiropractic.”

The authoritarian challenges the notion that there can be evolution in understanding of the philosophy, for example, “Some things will not change. The principle will not change. The philosophy of those who hold to straight chiropractic is not going to change.” Proponents of this approach favour acceptance of the philosophy over further exploration, “... while the philosophy is easy to understand, accepting it is much more difficult.”

The author goes on to argue that neither group discussed has been successful in advancing understanding of the philosophy of chiropractic or health care. A third approach is presented, in which the notions of critical inquiry and rigorous analysis are used.

The author concludes,

“The philosophy of chiropractic can become a discipline advancing the understanding of the nature of the philosophy, its ability for pragmatic application, and its potential to enhance society.”

References:

McAuley B. Rigor in the Philosophy of Chiropractic: Beyond the Dismissivism/ Authoritarian Polemic. *J Chiropr Humanit* 2005; 12:16-32. <http://www.journalchirohumanities.com/>

CHILDREN GAIN WEIGHT AFTER HAVING TONSILS REMOVED

The objective of a recent study (1) was to examine the effect of adenotonsillectomy (T&A) in children with obstructive sleep-disordered breathing on growth, hyperactivity, and sleep and waking motor activity.

The authors from the University at Buffalo in New York State, studied 54 children who were aged 6 to 12 years and had adenotonsillar hypertrophy and an obstructive apnea-hypopnea index of ≥ 1 before and 12 months after they all received adenotonsillectomy (T&A).

They measured height, weight, percentage overweight (patient BMI - BMI at 50th percentile)/BMI at 50th percentile $\times 100$) and obtained a hyperactivity score from parent report on a standardized behaviour questionnaire scale. A subset of the children (n=21) were also studied for motor activity for 7 consecutive days and nights before and 12 months after T&A.

The authors report that after T&A,

- Mean obstructive apnea-hypopnea index decreased from 7.6 to 0.6.
- Height percentile did not change, but
- Weight percentile increased; as a consequence, percentage overweight increased from 32.0% to 36.3%,
- Hyperactivity scores and total daily motor activity were reduced,
- The reduction in hyperactivity scores predicted an increase in percentage overweight,
- Reduced motor activity was correlated with increased percentage overweight.

The authors conclude,

“An increase in percentage overweight after T&A in children with obstructive sleep-disordered breathing is correlated to decreased child hyperactivity scores and to decreased measured motor activity in the subset studied. These associations suggest that the increase in overweight may be attributable to reductions in physical activity and fidgeting energy expenditure”.

In a subsequent interview the lead author, James Roemmich stated,

“Weight gain in these children is a concern. Obesity may be a primary cause of obstructive sleep-disordered breathing, so additional weight gain may lead to a re-occurrence of obstructed breathing during sleep in spite of the surgery.”

Reference:

- 1) Roemmich JN, Barkley JE, D'Andrea L, Nikova M, Rogol AD, Carskadon MA, Suratt PM. **Increases in overweight after adenotonsillectomy in overweight children with obstructive sleep-disordered breathing are associated with decreases in motor activity and hyperactivity.** *Pediatrics*. 2006; 117:e200-8.

<http://pediatrics.aappublications.org/cgi/content/full/117/2/e200>