A CLINICAL INVESTIGATION
OF CHIROPRACTIC
NEURO EMOTIONAL TECHNIQUE (NET)
FOR ATTENTION-DEFICIT/HYPERACTIVITY DISORDER (AD/HD)
IN CHILDREN

A thesis presented in candidature for the degree of

Master of Science (Honours)

by

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Master’s Summary

This thesis is an investigation of chiropractic management for paediatric Attention-Deficit/Hyperactivity Disorder (AD/HD). The aim of this thesis was to answer two questions: Q1: Does chiropractic care have a role to play in the management of paediatric AD/HD? and Q2: Does the emotional component of the Neuro Emotional Technique (NET) [a technique used by some chiropractors] have a role to play in the management of paediatric AD/HD? Traditionally AD/HD is managed by paediatricians, developmental and behavioural health specialists, clinical psychologists and allied health professionals. However, as complementary and alternative medicine gains popularity, more parents seek alternative care for their children diagnosed with AD/HD.

A review of the AD/HD literature was conducted in order to update current understanding on the subject matter. Furthermore, a systematic review of the chiropractic literature was undertaken in order to construct a thorough profile of chiropractic care for paediatric AD/HD to answer the first research question. This systematic review found a paucity of published articles in the area and conclusions drawn that there was insufficient evidence to support the efficacy of chiropractic care for paediatric AD/HD. As a result of these findings, a unique pilot study in the form of a randomised controlled trial (RCT) was conducted on the biopsychosocial principles of NET, following the Consolidated Standards of Reporting Trials (CONSORT) checklist. This RCT was designed and undertaken in order to answer the second research question of whether the emotional component of NET can affect outcomes in paediatric AD/HD by decreasing the symptoms of inattention, hyperactivity and impulsivity.

This study was a multi-centre study with four chiropractors (certified in NET) providing interventions for sixty-nine children. The children underwent an intense one-month management program of two sessions per week followed by another six sessions administered monthly. The parents of the participants and their teachers were the informants used throughout the study reporting on the children’s behaviours, in two different contexts. The Conners’ Parent and Teacher Rating Scales (CPRS-R:L and CTRS-R:L) were used as the outcome measures for this study. The results were interesting but not unusual, according to the literature. Conflicting results between the parent and teacher observations were found at months one and seven (i.e. at the conclusion of the study). The complete case analysis for the CPRS-R:L revealed statistically significant results and clinically meaningful changes in some outcome variables. Participants who were unmedicated and did not have comorbid disorders demonstrated greater improvements than the other participants. Furthermore, the intention-to-treat (ITT) analysis revealed significant results for all outcomes by the end of the study. The reliability of the teachers’ observations were raised by the author and as a result, the validity of the CTRS-R:L remains uncertain. Accordingly, conclusions were drawn from the parent observations. Findings suggest that the tested aspect of NET therapy may have some role to play in the management of paediatric AD/HD.

It is important to note that only one aspect of the NET protocol (i.e. emotional components) was examined. A study involving all aspects of the NET protocol (i.e. emotional, chemical, and physical/structural) would be needed in order to test the effectiveness of NET therapy in a clinical setting for paediatric AD/HD. Despite the limitations of this study (i.e. CRS-R low inter-rater reliability, uneven randomisation between groups and high attrition rates), the results suggest that (the emotional component of) NET therapy has some promising outcomes that may be effective in reducing some of the symptoms for some of the children with AD/HD. Definitive recommendations cannot be made about the intervention studied at this time. Despite the difficulties associated with carrying out clinical research in multiple sites and with challenging children over a long period of time, the study has provided a foundation for continuing research in the area of NET therapy for paediatric AD/HD.
Statement of Candidate

I certify that the work in this thesis entitled “A Clinical Investigation of Chiropractic Neuro Emotional Technique (NET) for Attention Deficit/Hyperactivity Disorder (AD/HD) in Children” has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree to any other university or institution other than Macquarie University.

I also certify that the thesis is an original piece of research and it has been written by me. Any help and assistance that I have received in my research work and the preparation of the thesis itself have been appropriately acknowledged.

In addition, I certify that all information sources and literature used are indicated in the thesis.

The research presented in this thesis was approved by Macquarie University Ethics Review Committee, reference number: HE26AUG2005-M04261 on 7th April, 2006.

Signature…………………………………………………Date…………………………..

Name: ….Fay Karpouzis………………………………Student ID:…40661857………

This thesis also includes three publications that have been co-authored with my supervisors.


Concept: FK 60% RB 20% HP 20%
Data collection: FK 90% RB 5% HP 5%
Data analysis: FK 80% RB 10% HP 10%
Writing: FK 80% RB 10% HP 10%


Concept: FK 80% HP 10% RB 10%
Data collection: N/A
Data analysis: N/A
Writing: FK 80% HP 10% RB 10%


Concept: FK 80% HP 10% RB 10%
Data collection: N/A
Data analysis: FK 75% RB 5% PG 20%
Writing: FK 85% HP 5% RB 5% PG 5%
Dedication

To my late father Kontantino (affectionately known as Con), who always believed in me and called me his ‘little doctor’. His unwavering faith and belief that I could be anything I wanted to be in my life has given me the determination to be whatever I choose to be! I’m one step closer to my PhD dad!

To my mother, Konstantina (affectionately known as Dina) who epitomises unconditional love, and who has always been there supporting me through every chapter of my life (including this one!). She has been the most amazing role model for me, her strength, her courage, her dedication to her family, her selflessness, her honesty, her spirit and her loving nature have been a huge inspiration to me.

Both of my parents, despite their inability to attain an education during World War II, instilled in me the importance of an education, and from that I developed a natural love of learning and an insatiable need to acquire more knowledge. For that I am eternally grateful.

To my two beautiful daughters, Georgia and Connie, for their love and for putting up with mum and her never-ending thesis! To my ‘number one girl’, Georgia, for being a hyperactive, impulsive and exuberant child, which led me to my interest in AD/HD! Without you, I certainly would not be writing this thesis! To my ‘special girl’, Connie, for being the most delightful easy-going child and for having the patience to help mum with proof-reading, editing, referencing, formatting tables and graphs throughout the last few years!

You have all been there for me, and I shall always be grateful for your love and support. I love you all more than I can say!
To my principal supervisor, Associate Professor Rod Bonello, who was always there with a patient ear to listen, guide and advise me in his logical manner. Who allowed me the time and safe space to run all my ideas by him, and for validating those ideas when I doubted myself. Who provided much needed encouragement during the challenges of conducting clinical trials, publishing and writing and submitting this thesis. Your comments were always insightful and gratefully acknowledged.

To my associate supervisor, Associate Professor Henry Pollard, for his guidance and support throughout the project. His challenging critiques have helped to develop my writing and research skills. For his belief that I could always work it out on my own, even when I thought I needed to hear the answer from him! Your challenging comments were useful and gratefully received.

To the Department of Chiropractic (Faculty of Science, Macquarie University) for providing support and facilities throughout my candidature.

To Macquarie University for awarding me the Post Graduate Research Fund (PGRF) grant and an international travel grant enabling me to present some of the research findings at international medical conferences.

To the Deputy Vice Chancellor of Research (MQU) for awarding me a Commendation Award in recognition of my successful acquisition of PGRF for the purpose of presenting this research project to the International Centre for the Study of Psychiatry and Psychology in the USA.

To Macquarie University for the Commercialisation Training Scholarship (CTS) for teaching me how to commercialise my intellectual property and for funding part of my research project.

To the four chiropractors who donated time and services to provide the study protocols for the study participants at no cost — Gerald Vargas, Allison Griffiths, Bill Stathoulis, Rick Schlederer — thank you all, as without your generosity the clinical trial would not have been possible.

To Peter Bablis for his expertise and advice in NET protocols, and for his encouragement to start a research project.

To Scott Walker (the chiropractor who created NET) for his expertise and advice in NET.

To Steve Osborne (NET Inc. Australia) for providing the NET brochures that explain NET in layman’s terms for the parents of the participants at no cost.

To Frances Gibson (from MQU Institute of Early Childhood), who is a lecturer in developmental psychology at Macquarie University, for her time and advice on psychological matters.

To Petra Graham (from MQU Statistics Department), Professor Mick O’Neill and Professor Dave Grayson who offered their services and provided helpful guidance and instruction with regard to statistical advice.

To Tamara Gray (Psychologist at MQU) for assisting in the scoring of the Conners’ Rating Scales.

To the International Centre for the Study of Psychiatry and Psychology in the USA for the K. McCready Memorial Research Grant.

Thank you to all the participants, their parents, and teachers that were willing to take part in this research project — without them this project would not have been possible.

Finally, to all my family and friends, who supported me during my candidature, it is greatly appreciated.
## Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>AACAP</td>
<td>American Academy of Child and Adolescent Psychiatry</td>
</tr>
<tr>
<td>AAP</td>
<td>American Academy of Pediatrics</td>
</tr>
<tr>
<td>AD/HD</td>
<td>Attention-Deficit/Hyperactivity Disorder</td>
</tr>
<tr>
<td>AD/HD-C</td>
<td>Attention-Deficit/Hyperactivity Disorder-Combined subtype</td>
</tr>
<tr>
<td>AD/HD-H/I</td>
<td>Attention-Deficit/Hyperactivity Disorder-Hyperactive/Impulsive subtype</td>
</tr>
<tr>
<td>AD/HD-I</td>
<td>Attention-Deficit/Hyperactivity Disorder-Inattentive subtype</td>
</tr>
<tr>
<td>ADD</td>
<td>Attention Deficit Disorder</td>
</tr>
<tr>
<td>ANCOVA</td>
<td>Analysis of Covariance</td>
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<td>ANOVA</td>
<td>Analysis of Variance</td>
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<tr>
<td>ANX</td>
<td>Anxiety Disorders</td>
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<tr>
<td>ASD</td>
<td>Autistic Spectrum Disorder</td>
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<tr>
<td>ATX</td>
<td>Atomoxetine</td>
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<tr>
<td>BI</td>
<td>Behavioural Interventions</td>
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<tr>
<td>BPS</td>
<td>Biopsychosocial</td>
</tr>
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<td>BPT</td>
<td>Behavioural Parent Training</td>
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<tr>
<td>CAM</td>
<td>Complementary and Alternative Medicine</td>
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<tr>
<td>CBM</td>
<td>Cognitive Behaviour Modification</td>
</tr>
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<td>CBT</td>
<td>Cognitive Behavioural Therapy</td>
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<td>CD</td>
<td>Conduct Disorder</td>
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<td>CI</td>
<td>Confidence Interval</td>
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<tr>
<td>CINAHL</td>
<td>Cumulative Index to Nursing and Allied Health Literature</td>
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<td>CONSORT</td>
<td>Consolidated Standards of Reporting Trials</td>
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<td>CPRS-R:L</td>
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<td>CRS</td>
<td>Conners’ Rating Scale</td>
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<tr>
<td>EBT</td>
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<td>EEG</td>
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<td>Essential Fatty Acids</td>
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<td>EMG</td>
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<td>ES</td>
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<tr>
<td>fMRI</td>
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<tr>
<td>Group A</td>
<td>Sham Group (or Sham-NET group or placebo group)</td>
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<tr>
<td>Group B</td>
<td>Treatment Group (or NET Therapy group)</td>
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<tr>
<td>Group C</td>
<td>Control Group (Existing treatment)</td>
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<td>IQ</td>
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<td>ITT</td>
<td>Intention-to-Treat</td>
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<td>LA</td>
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<tr>
<td>MAPs</td>
<td>Meridian Access Points</td>
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<td>MCID</td>
<td>Minimally Clinically Important Difference</td>
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<tr>
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<td>Description</td>
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