

ORIGINAL PAPER

# A comparative consecutive case series of 20 children with a diagnosis of ADHD receiving homeopathic treatment, compared with 10 children receiving usual care



Philippa Fibert<sup>1,2,\*</sup>, Clare Relton<sup>2</sup>, Morag Heirs<sup>3</sup> and Deborah Bowden<sup>1</sup>

<sup>1</sup>Goldsmiths, University of London, New Cross, London SE14 6NW, UK

<sup>2</sup>School of Health and Related Research, University of Sheffield, 30 Regent Court, Sheffield S1 4DA, UK

<sup>3</sup>Northern College of Acupuncture, 61 Micklegate, York YO1 6LJ, UK

**20 consecutively enrolled children age 5–16 with Attention Deficit Hyperactivity Disorder (ADHD) received treatment by a homeopath (8 consultations and individualized remedies) for one year. Ten subsequently enrolled children received similar time and attention for 4 months. The study explored optimum treatment protocols; the effectiveness, deliverability and acceptability of treatment; and the feasibility of outcome measurement and recruitment.**

**Parents completed Conners' Parent Rating Scale, Revised Long Version (CPRS-R:L) every 4 months, from which DSMIV total scores were extracted; and Measure Your Own Medical Outcome Profile (MYMOP) every consultation.**

**An interaction between time (baseline/4 months) and group (treatment/non-treatment) was found .756  $F(1,28) = 9.06$ ,  $p = 0.005$ . The intervention was associated with statistically significant improvements in treated children over the year: CPRS-R:L ( $t(18) = 4.529$ ,  $p \leq 0.000$ ); MYMOP ( $t(18) = 6.938$ ,  $p \leq 0.000$ ). Mean DSMIV total t scores decreased at each time point: baseline: 85 (SD 5.1); 4 months 76.2 (SD 10.9); and 12 months 71.5 (SD 12.77).**

**Recruitment of control participants was problematic. Recruitment to treatment was feasible via ADHD support groups, charities, police support agencies and social services, not schools or NHS services. Attending appointments was problematic for some participants, but home visits did not improve uptake. The best venue was a familiar clinic. Some participants took medicines inappropriately, but generally taking homeopathic remedies was acceptable and well implemented. CPRS-R:L (80 items) was problematic for some parents. MYMOP was preferred by parents but not acceptable to stakeholders. In this small consecutive sample the intervention was associated with improvements in criminality, anger and children with a concomitant diagnosis of Autism Spectrum Disorder ASD.**

**Treatment by a homeopath was associated with sustained, increasing improvements and the intervention was acceptable to participants. More methodically rigorous research is warranted. "We recommend that future research in this area uses compara-**

\*Correspondence: Philippa Fibert, Present address: School of Health and Related Research, University of Sheffield, 30 Regent Court, Sheffield S1 4DA, UK.

E-mail: [p.fibert@sheffield.ac.uk](mailto:p.fibert@sheffield.ac.uk)

Received 24 March 2015; revised 13 August 2015; accepted 25 September 2015

**tive effectiveness randomised controlled trial designs. We also recommend that these trials measure outcomes of relevance to stakeholder needs – the people and services who care for those with ADHD – parents, teachers and social workers and the criminal justice system”. *Homeopathy* (2016) **105**, 194–201.**

**Keywords:** Attention Deficit Hyperactivity Disorder; ADHD; Autism Spectrum Disorder; ASD; Homeopathy; Treatment by a homeopath

## Introduction

There is a need to explore novel, cost effective, safe treatments for children with developmental disorders such as Attention Deficit Hyperactivity Disorder (ADHD) in order to improve outcomes.

ADHD is a significant strain on stakeholder services and at high risk of negative outcomes such as criminality (where it has been found to be the most important predictor of violent offending<sup>1</sup>), school disruption and exclusion (Of 526 UK families with an ADHD child, 11% were found to be permanently excluded ([www.addiss.co.uk](http://www.addiss.co.uk))). Children with ADHD and their siblings report being substantially less happy with their family, with life overall (levels of wellbeing 6% less than matched peers), and to experience elevated levels of intra-family bullying.<sup>2</sup>

Evidence suggests that currently recommended interventions (behavioural and pharmaceutical) are effective whilst implemented but not associated with long term improvements. Side effects of pharmaceutical medication include poor sleep, decreased appetite, dizziness and stomach pain.<sup>3,4</sup> A recent review found average treatment persistence with stimulants to be 136 days<sup>5</sup> with adverse effects the most commonly cited reason for discontinuation. Many discontinue medication in adolescence.<sup>6</sup>

Two-thirds of those with a child with ADHD report using Complementary and Alternative Medicine (CAM) treatments of some kind<sup>7</sup> with homeopathy one of the preferred options.<sup>8</sup> Reasons include minimizing symptoms, additional benefits when combined with conventional treatment and potentially avoiding side effects of prescribed medication.<sup>7</sup> However there is currently minimal high quality evidence regarding the clinical effectiveness of complementary and alternative therapies.<sup>9</sup>

The peer reviewed evidence base for homeopathy for ADHD to date consists of: six placebo controlled randomised controlled trials (RCTs) testing the efficacy of homeopathic remedies (of which two tested non-individualized remedies<sup>10,11</sup> and four tested individualized remedies<sup>12–15</sup>); two observational studies of treatment by homeopaths<sup>16,17</sup>; and one within subjects trial of treatment by homeopaths measuring ADHD symptoms in ASD.<sup>18</sup> The majority of RCTs of individualized remedies (3/4) showed statistically significant effects, as did the within subjects trial of treatment by homeopaths and the two observational studies; whilst neither RCT of non-individualized remedies showed any effects.

A 2007 systematic review assessing “*the safety and effectiveness of homeopathy for ADHD*” concluded that “*there is at present insufficient evidence*” and advised

that there is a need for “... *good quality observational studies documenting how homeopaths in the country of an intended trial actually practice, including [sufficient] time to see benefit*”.<sup>19</sup> This advice was mirrored by one of homeopathy’s detractors who has also suggested that “*studies of clinical effectiveness, describing the therapy as it is practiced in the real world may be a better means of informing stakeholders of the potential of homeopathic treatment*”.<sup>20</sup> This case series addresses these recommendations.

Such pragmatic studies of the effectiveness of complex interventions are also recommended by the Medical Research Council,<sup>21</sup> which suggests that only once the effectiveness of interventions has been established, should the efficacy of the separate components be explored. “The interacting components of the therapeutic system of homeopathy include: the remedy, the therapeutic consultation and the application of the principles of homeopathy (individualisation, the simillimum) (Relton et al. 2008). Despite MRC recommendations for testing complex interventions, 99% of current homeopathy trials test the efficacy of homeopathic remedies (mirroring drug trials), and not the clinical effectiveness of the whole intervention as it is usually practised (Relton et al 2008). It likely that such trials are underestimates (due to only testing one component (the remedy), and constriction of the complex interaction between components).”

Therefore this observational study documents the effectiveness of receiving treatment by a homeopath in the UK. It describes the progression of twenty children with a diagnosis of ADHD over the course of one year’s homeopathic treatment. Ten children were subsequently enrolled to receive similar time and attention for 4 months to control for any non-specific effects of spending time with an empathetic practitioner which have been suggested as an explanation for the positive effects of homeopathic treatment.<sup>22–24</sup> “Since the purpose of this study was to document the potential of treatment by a homeopath as experienced in clinical practice, not the specific effects of homeopathic remedies, no placebo remedies were compared.”

This study explores optimum treatment protocols; the effectiveness, deliverability and acceptability of treatment; the feasibility of outcome measurement; and the feasibility of recruiting a broad representative sample, particularly of those engaging with support services. Children’s treatment was paid for by Turner’s Court Youth Trust (an ex-borstal charitable foundation dedicated to prevention of criminality) and the Homeopathic Research Institute. It was

submitted as a component of studies at Goldsmiths, University of London (Research Methodology in Psychology) and informs an ongoing pragmatic RCT at the University of Sheffield.

## Methods

### Inclusion criteria and recruitment strategy (see Figure 1)

Children aged 5–16 with a prior clinical diagnosis of ADHD reported by parents, were recruited by advertising at schools, youth clubs, police services, social services and ADHD support groups in the south east region of the UK. No restriction was put upon the length of time since diagnosis or co-morbidities. Children could be taking conventional medication or undertaking other adjunctive treatments. Exclusion criteria were children where English was not spoken, or families not attending two consecutive appointments in the first 4 months. If this occurred new families were recruited.

Parents expressing interest were sent information about the project, what to expect from a homeopathic consultation and a consent form to be completed by both parents and children. After informed consent was received, the first 20 applicants were enrolled to receive homeopathic treatment, then the next 10 applicants were enrolled to receive similar time and attention. These participants were offered homeopathic treatment after 4 months. Figure 1 demonstrates the recruitment pathway.

### Intervention

Children received a course of homeopathic treatment from the lead researcher (PF), a qualified homeopath for 5 years; criminal records bureau (CRB) and police checked; a member of the Society of Homeopaths, bound by its code of ethics within which child protection policy is embedded. Ethical approval for the study was obtained from the Society of Homeopaths and Goldsmiths, Univer-

sity of London. Consultations took place in a variety of settings: patient's home, Red Cross Centre, or Alternative Therapies Clinic. Venue choice depended on the family's location.

Treatment consisted of an initial consultation of 1½ hours between parent, child and homeopath; seven follow up appointments at 4–6 week intervals; and individualized homeopathic remedies prescribed following each consultation and taken, usually on a daily basis. Where necessary, consultation without child or parent was arranged to discuss familial discord or negative behaviour. Parents were free to contact the practitioner between appointments with any queries.

Follow ups lasted for 40 min. The homeopath was at liberty at each consultation to continue with the prescribed remedy, change to a different one, change potency, prescribe additional remedies, and use different prescribing methodologies. Homeopathic remedies were prescribed in pill or liquid form, sourced from homeopathic pharmacies 'Helios' or 'Vital Homeopathics', packaged and sent to participants by Marlow Homeopathic Clinic.

### Comparison group

Parents and children received 4 visits at 6 week intervals from the same practitioner, with a similar amount of contact time to the treatment group. No remedies or placebo remedies were prescribed or lifestyle advice given and the practitioner did not ask the kind of questions expected in a homeopathic interview, but engaged in friendly, sympathetic conversation.

### Outcome measurement

Two outcome measures were completed by parents. The Conners' Parent Rating Scale – revised long version (CPRS:R-L)<sup>25</sup> is a well-known validated outcome scale designed for assessing ADHD symptoms, and consists of an 80 item measure measuring six different subscales and seven different global ratings including the Diagnostic and Statistical Manual of Mental Disorders 4th edition (DSM-IV) total score, which was selected for analysis purposes.

The Measure Your Own Medical Outcome Profile (MYMOP)<sup>26,27</sup> is a patient generated outcome measure consisting of self-chosen items measured using a Likert scale (0 (as good as it could be) to 6 (as bad as it could be)) which allows parents to select their key concerns (two symptoms considered most bothersome, an activity the condition limits participation in, and wellbeing) and document how they change over time. Although validated for use by adults, it has not previously been used by a parent reporting on behalf of a child. Total scores are computed by averaging the four items, with diminution of scores representing improvement. Teenagers completed their own MYMOP forms in addition to their parents.

MYMOP was completed at the end of each consultation, CPRS:R-L at the end of consultation 1 (baseline), 4 (4 months) and 8 (one year). Measures were completed without input from the researcher unless the parent was

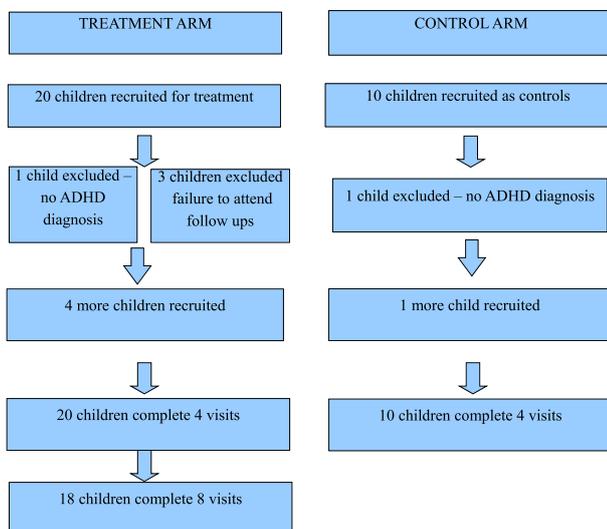


Figure 1 Recruitment and treatment progression.

unable to fill in the form due to reading or writing difficulties, in which case the practitioner read the form to the parent and filled in their verbal responses.

If participants were found to have missed out any items of CPRS:R-L the previous score for that item was substituted; substituted scores were therefore 'no change' scores. MYMOP total scores were mean calculations, therefore if items were missing, the mean was calculated based on the number of answers given.

### Statistical tests

Statistical analysis addressed two questions: did homeopathic treatment provide adjunctive benefits compared to similar time and attention? And were the effects of homeopathic treatment cumulative?

The first question (primary analysis) compared usual treatment + homeopathic treatment with usual treatment + similar time and attention, at baseline and 4 months using  $2 \times 2$  mixed analysis of variance (ANOVA) where the independent variable was treatment status with two categories: treatment and non-treatment. The dependent variables were either standardized DSMIV total scores or average MYMOP scores measured at two time points (baseline and 4 months) to examine whether improvement over time depended on group.

To explore the long term effects of homeopathic treatment (secondary analysis), repeated measures t-tests were applied to the treated population at baseline, 4 months and one year, measuring change in DSMIV total scores and average MYMOP scores.

### Feasibility

A range of recruitment methods, intervention venues, and homeopathic methodologies were explored to develop optimum protocols.

## Results

### Participant characteristics

Children came from the following recruitment venues: ADHD support groups (N = 13); word of mouth (N = 8); local schools and youth clubs (N = 4); police family intervention project (buckscc.gov.uk) (N = 3); and an early intervention and prevention local government project (buckscc.gov.uk) (N = 2). They came from three counties in England: Buckinghamshire, Oxfordshire and Northamptonshire.

One child was found not to have a medically confirmed diagnosis of ADHD at the initial consultation. Three children from two families failed to attend two consecutive follow ups. Two children did not complete a full year of treatment due to family issues (marital abuse and ill health of a sibling) (Figure 1).

All children had received a diagnosis of ADHD from their consulting physician as reported by parents. All children met the threshold for an ADHD diagnosis according to parent completed baseline Conners' DSMIV scores (mean 84.7, SD 5.33) (Table 1).

**Table 1** Comparison of Treatment and Control group characteristics

	Treatment group	Control group
Pharmaceutical Medication status	12/20 take meds (60%) (4 female)	6/10 take meds (60%) (1 female)
Sex	20% female	10% female
Age	mean = 10.15 (SD 2.7)	mean = 11.8 (SD 2.8)

Children were between 5 and 16 years old (average age = 11, SD 2.9). Five participants were female. Half the children attended primary schools and half secondary schools. Thirteen children attended special schools, whilst the remainder attended local schools with additional support. Two children had criminal records. Children had diagnoses additional to ADHD: autism spectrum disorders (N = 4), oppositional defiant disorders (N = 4), dyslexia (N = 4), dyspraxia (N = 2), global developmental delay and speech delay (N = 1).

Twelve children (4 female and 8 male) were already on stable doses of conventional medication for at least four months when they enrolled on the study. The remaining 8 were not taking medication either because they had stopped due to adverse symptoms (N = 6), or due to ethical concerns (N = 2). All participants were under the care of a paediatrician. None of the children were engaged in behavioural interventions during the study although five reported having participated in them in the past. Families were involved in a variety of services to manage their children: police, social services, educational interventions, ADHD support groups, behavioural management tools, play therapy and counselling.

A similar number of control and treatment group children took pharmaceutical medication and all girls were on medication. Children in the treatment group were younger than the control group but this difference was non-significant ( $p = 0.583$ ). The control group had a smaller percentage of females (10% compared to 20%).

### Data management

One parent was unable to complete the outcome measurements due to dyslexia. Outcomes were therefore read out and filled in by the researcher.

Twenty items out of 6400 were missing from CPRS:R-L. These were substituted with previous scores. Missing data in MYMOP occurred in three cases where one item was missed out. The average was calculated for three instead of four scores in each case.

### Statistical results

SPSS statistical software was used. An alpha level of .05 was used for all statistical tests. Tests were corrected for multiple comparisons using the Bonferroni correction procedure. Visual examination of histograms and skew and kurtosis values showed data to be normally distributed and Mauchley's test of sphericity was non-significant (.199, DSMIV; .162 MYMOP).

Homogeneity of variance assumptions were not met for DSMIV time 2 and were not improved by data transformation.

**Primary analysis:** Data examination of the two groups found similar means, variances and ranges at baseline. At 4 months, treatment group mean scores decreased whilst control group means remained similar, indicating the direction of subsequent statistical tests. The range and variance amongst the treated group changed at 4 months, whilst remaining similar for the control group (see Table 2).

A significant interaction between time (baseline and 4 months) and group (treatment and non-treatment) was found using Multivariate test Wilks Lambda (see Figure 2):

$$0.756 F (1,28) = 9.06, p = 0.005 \text{ (DSMIV)}$$

$$0.721 F (1,28) = 10.85, p = 0.003 \text{ (MYMOP)}$$

**Secondary analysis:** The intervention was associated with statistically significant improvements in the treated group compared to itself between baseline and one year CPRS-R:L ( $t(18) = 4.529, p = 0.000$ ) and MYMOP ( $t(18) = 6.938, p = 0.000$ ) (see Table 3). The largest mean score change occurred in the first 4 months.

The increase in standard deviation over time can be understood by looking at individual change scores of treated children: five scores remained similar over 1 year, and five experienced large improvements (over 20 percentiles) (see Figure 3).

**Feasibility**

Recruitment of control participants only yielded half the participants required for the equally sized groups initially proposed. Recruitment to the treatment group was feasible. Participants were recruited via ADHD support groups and charities where a positive and personal relationship was established. Recruitment of a broad representative sample, for example including children engaged with support services was effective. Recruitment via schools and NHS services was ineffective.

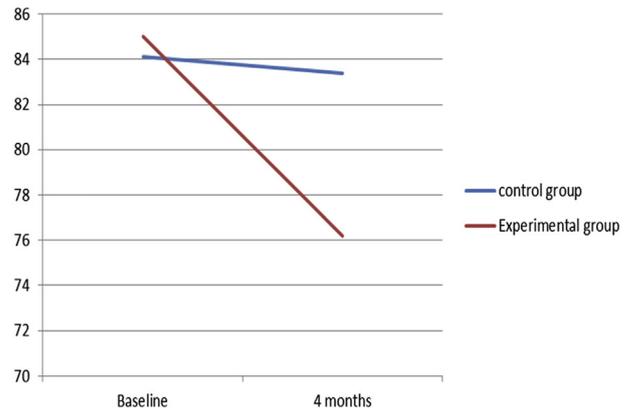
Attending appointments was problematic for some participants, particularly those engaged with support services but visiting patients in their own home did not improve uptake. Best venue was a clinic known to the patient such as an agency clinic. Worst venue was patient’s home where participants were frequently distracted or absent, or had the TV on, was more costly and less time efficient to the homeopath.

Although some participants took medicines inappropriately, lost them, or stopped taking them, generally taking homeopathic medicines was acceptable and well imple-

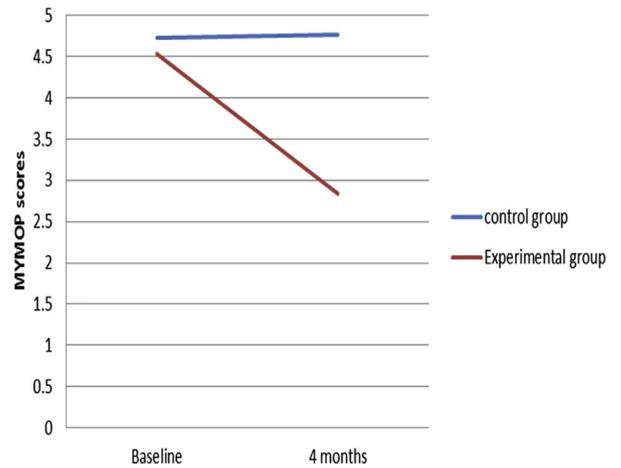
**Table 2** Descriptive statistics control v treatment at baseline and 4 months

		Treatment (N = 20)		Control (N = 10)		Treatment (N = 20)		Control (N = 10)	
Base-line	Mean	DSMIV	85 (5.1)	84.1 (5.9)	4 months	76.2 (10.9)	83.4 (6.7)		
	(SD)	MYMOP	4.53 (.63)	4.73 (.85)		2.84 (1.33)	4.76 (.73)		
Variance		DSMIV	26.1	35.88		119.6	44.5		
		MYMOP	0.4	0.73		1.77	0.53		
Range		DSMIV	16	16		33	21		
		MYMOP	2.00	2.50		5.75	1.75		

**Time x treatment for DSMIV percentiles**



**Time x treatment for MYMOP scores**

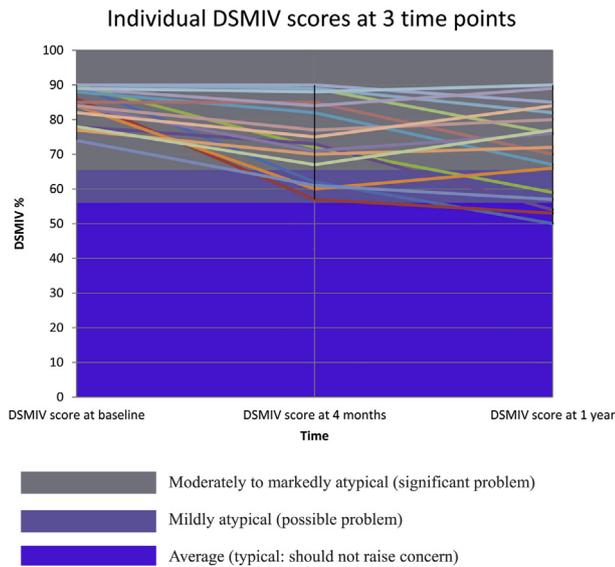


**Figure 2** Time × treatment over 4 months.

mented. Regular consultations allowed for adjustment and correction and appeared to be important for this population particularly. Four months was sufficient to show change between groups. However results after one year showed further improvement. It was a surprise observation that children involved with the criminal justice system at the start of treatment reduced their involvement.

**Table 3** Descriptive statistics of the treated group at 3 time points

	Baseline	4 months	1 year
DSMIV (SD)	85 (5.1)	76.2 (10.9)	71.5 (12.77)
MYMOP (SD)	4.53 (.63)	2.84 (1.33)	2.17 (1.24)



**Figure 3** Changes in individual DSMIV scores of treated children over one year.

A novel methodology based on isopathic prescriptions of parent reported environmental stressors<sup>28</sup> was found to be particularly effective.

The outcome measure CPRS-R:L was found to be too long and in too small print for some parents, several of whom also had ADHD or other learning difficulties. MY-MOP was acceptable to parents. They measured similar levels of statistical significance.

### Homeopathic treatment

Homeopathic remedies required daily administration to retain their effectiveness and when stopped, symptoms tended to return. No potency was observed to be more efficacious overall.

Eleven different remedies were used, namely: stramonium (4), tuberculinum (3), Calcarea carbonica (3), medorrhinum (2), carnosin (2) aranea ijobola (1), baryta carb (1), lac delphinum (1), sulphur (1), syphilinum (1), lycopodium (1).

Additional to their individualized remedies, 4 children were treated using a novel homeopathic methodology whereby an environmental substance suggested by the parent to be causative or aggravating was given.<sup>28</sup> These children received 30c, 200c, 1 M and 10 M potencies of cannabis, launderette chemicals, anti-psychotic drugs or anti-biotics.

Five children (25%) did not measure any benefit from homeopathic treatment. Issues such as difficult, on-going stressful family situations, dietary sensitivities, and inability to find an appropriate remedy may explain this.

Five children (25%) measured large changes. Three had additional diagnoses of autism spectrum disorders and four described environmental insults and were treated using CEASE methodology.<sup>28</sup>

### Adverse effects

Homeopathic aggravations (transient adverse symptoms) were noted in four children after receiving isopathic potencies of environmental substances. The adverse symptoms were bruising, increased hyperactivity ( $\times 2$ ), a nervous tic. In two cases these prescriptions were discontinued according to the wishes of parents and child, and symptoms resolved within 24 h. In two cases the prescription was continued according to the wishes of parents and child, and symptoms resolved within two weeks.

### Concomitant pathology

Improvements in other symptoms were described by parents and recorded by the homeopath: warts, allergies (animals, dust, pollens etc), chronic lung infection, eczema, hay fever, nocturnal enuresis, incontinence and soiling, nightmares, sleep and anger.

## Discussion

### Study design

Treatment by this homeopath was associated with positive outcomes, but the study has a number of design weaknesses limiting conclusions: a small participant sample, especially in the control group; participants were selected consecutively and may not be a true random sample of the population; outcome measurement was from a single source — parents aware of their child's status, in the presence of the homeopath who was also the researcher, leaving measurement open to bias (conscious or otherwise). ADHD diagnosis and change scores were not independently verified.

The study was not designed to explore the specific effects of a component of the homeopathic intervention as previous trials do. Whilst it is not possible to determine which components might have been more effective, for example the remedy or the consultation, the control group employed suggests that parents felt receiving homeopathic treatment was more beneficial than a sympathetic chat.

Because there was only one practitioner, results strictly relate to the ability of that practitioner. Other ADHD homeopathy studies also have single homeopaths.

A strength of the study was the freedom to prescribe individualized homeopathic remedies mirroring usual practice as recommended by the Cochrane systematic review.<sup>19</sup> Suggestions for a future pragmatic clinical trial design emerge which continue to test the effectiveness of the intervention as experienced in real life, thus retaining external and ecological validity, but improving internal validity and generalisability: random group allocation; blinded outcome measurement by teachers or physicians; measurement of objective outcomes of interest to stakeholders such as cost effectiveness, criminality and school exclusion; treatment in several sites by several homeopaths; and a larger sample size.

### Homeopathic prescribing

The study explored a variety of methodologies over the course of one year. ADHD trials to date have tended to test unusual remedies (selenium and potassium phosphate complex<sup>10</sup>; valeriana officinalis<sup>11</sup>) or remedies prescribed using unusual homeopathic methodologies (Boenninghausen<sup>13</sup>; Sensation<sup>14</sup>).

Some children received several different remedies during the course of the year according to the progression of their ADHD symptoms, whilst some received only one. Because parents described environmental substances they thought might have influenced their child's condition, the practitioner implemented a novel methodology,<sup>28</sup> prescribing the perceived toxins in homeopathic potency, additional to their individualized prescription (see<sup>29</sup> for an individual Case Study). The apparent effectiveness of this methodology was a surprise finding of this study, although management of initial adverse effects (or homeopathic aggravations) was also a feature.

The necessity of daily prescriptions has also been reported by other researchers.<sup>12,13</sup>

### Participants

Recruitment of control participants was problematic and only recruited half the participants required. Even this was only achieved via the incentive of subsequent homeopathic treatment. However, recruitment to the treatment group was feasible. Children with a wide spectrum of ADHD, including children already in trouble with the law and involved with social services, were recruited from agencies dealing with children in trouble (police support agencies and social services).

Three of the five children who experienced large changes (<18 percentiles) had a diagnosis of autism spectrum disorder (ASD) in addition to ADHD, suggesting that further research into ADHD in this sub-group may be useful. One study<sup>18</sup> has also demonstrated improvements in ADHD in ASDs. Four of the five perceived their symptoms to be associated with environmental toxicity and were treated using CEASE methodology.

### Measurement tools

MYMOP has not been validated to be completed by the parent on the child's behalf, however results were similar to DSMIV, suggesting that it can be employed in this way. DSMIV homogeneity of variance assumptions were not met at time 2. ANOVA is considered to be robust to violation of the assumption of homogeneity of variance when sample sizes are equal, but not when they are unequal. When the larger sample has larger variance, as in this case, the tendency is for the F ratio to be a conservative estimate.<sup>30</sup>

Both measures appeared to be similarly sensitive to change, were acceptable to most parents, well responded to and understood. Both parents and teenagers found MYMOP easy to use, but some parents struggled with CPRS:R-L, finding there were too many questions too

closely spaced. MYMOP is not a specific measure of ADHD, and when reporting this study, was found to be unacceptable to ADHD researchers and public policy stakeholders.

### Conclusion

The personal, social and financial costs of ADHD are significant and currently recommended treatments provide narrow clinical benefits and may have side effects. The majority of children in this study were on prescribed medication, however all presented with considerable remaining problems as represented by their high DSMIV scores at baseline. The improvements shown by  $\frac{3}{4}$  of the children suggest that homeopathy may offer safe, effective adjunctive treatment which improves wider outcomes without side effects; or alternative treatment for children who do not respond, or respond adversely, to conventional medications. Further, more methodologically rigorous research is warranted to explore this systematically.

It is of note that improvement was cumulative with continuing homeopathic treatment. One other long term study has looked at 10 year effects of ongoing homeopathic treatment<sup>31</sup> and also observes this. Evidence suggests converse effects with pharmacological and behavioural treatments.<sup>32–34</sup>

Homeopathy trials for ADHD conducted to date have not represented homeopathy as practiced in the real world, and may underestimate effects: remedies are potentially inappropriately applied; the effects of the homeopathic consultation are not measured; the effects of interactions are not measured. Pragmatic studies of treatment by homeopaths in real world settings will give better estimates of the clinical effectiveness of homeopathic treatment and provide more useful information to stakeholders than the results of trials comparing placebo to verum homeopathic remedies. Only once the effectiveness of real world clinical treatment has been established, should future research attempt to unpick any of the interacting specific effects of components of treatment by a homeopath (the remedy, the consultation and the application of the principles of homeopathy) (Relton et al 2008). While the current study had design limitations, these preliminary results suggest that treatment by a homeopath may be useful as practiced in the real world and further study is warranted.

### Conflicts of interest

None.

### Acknowledgements

Children's homeopathic treatment was paid for by Turner's Court Youth Trust and The Homeopathic Research Institute.

## References

- 1 Young S, Wells J, Gudjonsson G. Predictors of offending among prisoners: the role of Attention Deficit Hyperactivity Disorder (ADHD) and substance use. *J Psychopharmacol* 2011; **25**(11): 1524–1532.
- 2 Brazier J, Peasgood T, Biggs K. *Assessing the impact of children with ADHD on the health and wellbeing of their families (Shire Pharmaceuticals funded project 2009–11)*; 2014. Unpublished personal communications.
- 3 Wigal SB, Wong AA, Jun A, Stehli A, Steinberg-Epstein R, Lerner MA. Adverse events in medication treatment-naïve children with attention-deficit/hyperactivity disorder: results from a small, controlled trial of lisdexamfetamine dimesylate. *J Child Adolesc Psychopharmacol* 2012; **22**(2): 149–156.
- 4 Stein MA, Weiss M, Hlavaty L. ADHD treatments, sleep, and sleep problems: complex associations. *Neurotherapeutics* 2012; **9**(3): 509–551.
- 5 Gajria K, Lu M, Sikirica V, et al. Adherence, persistence, and medication discontinuation in patients with attention-deficit/hyperactivity disorder – a systematic literature review. *Neuropsychiatr Dis Treat* 2014; **10**: 1543–1569.
- 6 van de Loo-Neus Gigi HH, Rommelse Nanda, Buitelaar Jan K. To stop or not to stop? How long should medication treatment of attention-deficit hyperactivity disorder be extended? *Eur Neuropsychopharm* 2011; **21**(8). SI: 584–599.
- 7 Sinha D, Efron D. Complementary and alternative medicine use in children with attention deficit hyperactivity disorder. *J Paediatr Child Health* 2005; **41**(1–2): 23–26.
- 8 Bussing R, Zima BT, Gary FA, Garvan CW. Use of complementary and alternative medicine for symptoms of attention-deficit hyperactivity disorder. *Psychiat Serv* 2002; **53**(9): 1096–1102.
- 9 Foisy M, Williams K. Non pharmacological treatments for attention deficit hyperactivity disorder in children and adolescents: an overview of reviews. *Evid-based Child Health* 2011; **6**: 283–297.
- 10 Strauss LC. The efficacy of a homeopathic preparation in the management of ADHD. *Biochem Ther* 2000; XVII(2).
- 11 Razlog R., Pellow J., White SJ. A pilot study on the efficacy of Valeriana officinalis mother tincture and Valeriana officinalis 3X in the treatment of attention deficit. Health SA Gesondheid, Accessed at: <http://www.hsag.co.za/index.php/HSAG/article/view/603/779>. Date accessed: 14 May. 2013.
- 12 Lamont J. Homeopathic treatment of attention deficit disorder. *Br Hom J* 1997; **86**: p196–200.
- 13 Frei H, Everts R, vonAmmon K, et al. Homeopathic treatment of children with attention-deficit hyperactivity disorder: a randomised, double blind, placebo controlled crossover trial. *Eur J Paediatr* 2005; **164**: 758–767.
- 14 Jacobs J, Williams A-L, Girard C, Njike V Yanchou, Katz D. Homeopathy for attention-deficit/hyperactivity disorder: a pilot randomised-controlled trial. *J Altern Complement Med* 2005; Oct 11;(5): 799–806.
- 15 Oberai SP, Varanasi GR, Mishra A, Singh V, Nayak C. Homeopathic management of attention deficit hyperactivity disorder: a randomised placebo-controlled pilot trial. *Indian J Res Homoeopathy* 2013; **7**: 4.
- 16 Frei H, Thurneysen A. Treatment for hyperactive children: homeopathy and methylphenidate compared in a family setting. *Br Hom J* 2001; **90**: 183–188.
- 17 Brulé D, Sulea L, Landau-Halpern B, et al. An open-label pilot study of homeopathic treatment of attention deficit hyperactivity disorder in children and youth. *Forsch Komplementmed* 2014; **21**(5): 302–309.
- 18 Barvalia P, Piyush M Oza, Daftary AH, Patil VS, Agarwal VS, Ashish RM. Effectiveness of homeopathic therapeutics in the management of childhood autism disorder. *Indian J Res Homoeopathy* 2014; **8**(3): 147–159.
- 19 Coulter MK, Dean ME. Homeopathy for attention deficit/hyperactivity disorder or hyperkinetic disorder. (Systematic Review). *Cochrane Database Syst Rev* 2007;(4).
- 20 Goldacre B. Meta-analyses of homeopathy trials – the author’s reply. *Lancet* 2008; **371**: 985.
- 21 Craig P, Dieppe P, Macintyre S, et al. *Interventions: new guidance*. London: MRC, 2008.
- 22 Di Blasi Z, Harkness E, Ernst E, Georgiou A, Kleijnen J. Influence of context effects on health outcomes: a systematic review. *Lancet* 2001; **357**(9258): 757–762.
- 23 Ernst E. Placebo, deceit and complementary/alternative medicine. *Climacteric* 2007; **10**(2): 85–87.
- 24 Brien S, Lachance L, Prescott P, McDermott C, Lewith G. Homeopathy has clinical benefits in rheumatoid arthritis patients that are attributable to the consultation process but not the homeopathic remedy: a randomized controlled clinical trial. *Rheumatology* 2011; **50**(6): 1070–1082.
- 25 Conners CK, Campbell M, Fitzpatrick R, et al. *Conners rating scales (revised), technical manual*. Toronto: MHS, 2005.
- 26 Paterson C. Measuring outcomes in primary care: a patient generated measure, MYMOP, compared with the SF-36 health survey. *BMJ* 1996; **312**: 1016–1020.
- 27 Paterson C, Britten N. In pursuit of patient-centred outcomes: a qualitative evaluation of MYMOP, Measure Yourself Medical Outcome Profile. *J Health Serv Res Policy* 2000; **5**: 27–36.
- 28 Smits T. *Autism beyond despair. CEASE therapy*. Emyriss Publishers, 2010.
- 29 Fibert P. Case report of a 16 year old youth with diagnoses of Attention Deficit Hyperactivity Disorder (ADHD), Asperger’s syndrome and dyslexia receiving homeopathic and tautopathic treatment. *EuJIM* 2015; **7**(3): 312–317.
- 30 Glass GV, Peckham PD, Sanders JR. Consequences of failure to meet assumptions underlying analysis of variance and covariance. *Educ Res* 1972; **42**: 237–288.
- 31 Von Ammon K, Sauter U, Frei H, Kretschmar S, Thurneysen A, Frei-Erb M. Classical homeopathy helps hyperactive children—a 10-year follow-up of homeopathic and integrated medical treatment in children suffering from attention deficit disorder with and without hyperactivity. *EuJIM* 2012; **4**(1): 73–74.
- 32 Jensen PS, Youngstrom EA, Steiner H, et al. Consensus report on impulsive aggression as a symptom across diagnostic categories in child psychiatry: implications for medication studies. *J Amer Acad Child Adolesc Psy* 2007; **46**(3): 309–322.
- 33 Satterfield JH, Faller KJ, Crinella Francis M, et al. A 30-year prospective follow-up study of hyperactive boys with conduct problems: adult criminality. *J Amer Acad Child Psy* 2007; **46**(5): 601–610.
- 34 Van der Oord S, Prins PJM, Oosterlaan J, et al. The adolescent outcome of children with attention deficit hyperactivity disorder treated with methylphenidate or methylphenidate combined with multimodal behaviour therapy: results of a naturalistic follow-up study. *Clin Psychol Psychot* 2012; **19**(3): 270–278.