

## **CHAPTER FIVE: DISCUSSION**

### **5.1. INTRODUCTION**

The purpose of the study was to determine the effect of the simplex homoeopathic preparation *Phosphorus* 6CH on the symptoms of ADHD, using three separate assessment tools to monitor childrens' performances over a three week trial period.

Whilst Berkow *et al* (1992) suggest that the peak age of referral is between eight and ten years of age, in South Africa many children are referred for ADHD evaluation as soon as they enter the organised school system from Grade 00 at age four to five (Nown, 1997). This referral rate increases as the children enter Grade 1 and Grade 2 (at ages seven and eight) (Nown, 1997). Using the above guidelines as well as those delimited in previous studies on ADHD in South Africa (Strauss, 1998; Smith, 2001; Meyer, 2001), this study was performed using age delimitations of four years to eleven years.

The sample group for this study was a random one, with children from both economically advantaged urban areas in Johannesburg as well as less financially stable and more rural areas north of Johannesburg being assessed. This is considered more representative of the greater population of South Africa, as suggested by Smith. (Smith, 2001). It also highlights the fact that ADHD is a disorder that crosses socio-economic boundaries.

### **5.2. BARKLEY AND DUPAUL TEACHER RATING SCALE (BDTRS)**

Teachers assessed the children in the school setting and noted any behaviour changes on a weekly basis. The following prominent findings were observed:

#### **5.2.1. Difficulty sustaining attention, often does not seem to listen**

Difficulty sustaining attention is a characteristic symptom of ADHD (Gimpel & Kuhn, 1998). According to Clarke *et al* (2002), a seeming inability to listen to instructions is a common example of how this lack of attention is manifested. In the

study, the experimental group showed extremely significant ( $P < 0.001$ ) improvement in the above two symptoms, an improvement not seen as significantly in the placebo group.

In a repertorisation of *Phosphorus* (Refer to Table 2.2.), the remedy scores highly for the symptoms “Mind – concentration – difficult” as well as for “Mind – heedless” and “Mind – forgetful” (Schroyens, 1998), and this explains the improvement in these symptoms that was found in children taking the remedy.

### **5.2.2. Often fidgets or squirms in seat, has difficulty remaining seated**

Gimpel and Kuhn (1998), describe the difficulty in inhibiting activity levels as a defining symptom of ADHD. This increased activity level can be seen in children that are unable to remain seated in a classroom environment for a set period of time without fidgeting or wanting to get up from their seat (Barkley, 1998). The above symptoms improved extremely significantly ( $P < 0.001$ ) in children receiving *Phosphorus* in this study. Once again, a lesser improvement ( $P < 0.05$ ) was seen in children receiving the placebo medication, thus indicating that *Phosphorus* can be attributed with some success in the treatment of these symptoms.

*Phosphorus* is indicated for patients that exhibit extreme restlessness and are fidgety, and thus showed extremely significant results in its treatment of the children. Lockie (1998) noted that patients requiring *Phosphorus* “cannot sit or stand still for a moment”.

### **5.2.3. Blurts out answers to questions, often talks excessively**

These symptoms indicate a lack of impulse control on the part of the child, which is considered a defining symptom of ADHD by Gimpel and Kuhn (1998). Patients for whom *Phosphorus* is indicated are often very talkative, loud, and extroverted, with a desire to be the centre of attention (Herscu, 1991).

The group of children receiving *Phosphorus* showed extremely significant improvement in these symptoms ( $P < 0.001$ ), whilst those taking placebo medication showed no significant improvement in these symptoms.

### **5.3. CHILDREN'S CHECKING TASKS (CCT1 & CCT2)**

The Children's Checking Tasks were used to assess the child's sustained attention. Two variables were measured, namely, total scores achieved for the tests, and times taken to complete the tests.

Both the experimental and placebo groups showed improvements in both total scores and times. This assessment tool was thus not seen to be as valuable to this study as questionnaires of individual symptoms of ADHD. Since it was the only test completed in full by the child itself, this tool needs to be adjusted so as to provide more significant information to any future research project, and will be discussed further in Recommendations (refer to section 5.4.).

### **5.4. PARENT SYMPTOM QUESTIONNAIRE (PSQ)**

The Parent Symptom Questionnaire (PSQ) was used to evaluate forty-eight symptoms in six categories commonly pertaining to ADHD children in the home and social setting. These six categories can be further grouped to form three different types of symptoms: Symptoms forming the diagnostic trinity of symptoms of ADHD, namely, Inattention, Impulsivity/ Hyperactivity and Hyperactivity Index; Conduct Problems; and Psychosomatic Problems and Anxiety.

#### **5.4.1. Inattention, Impulsivity/ Hyperactivity and Hyperactivity Index**

The American Psychiatric Association lists the above symptoms in the DSM-IV as the main diagnostic symptoms of ADHD (1994).

As previously discussed, *Phosphorus* is a remedy indicated for patients exhibiting difficulties in sustaining attention, inhibiting activity levels, and controlling their impulses (Herscu, 1991).

Although using the BDTRS the teachers observed extremely significant improvements in symptoms related to inattention for the children using *Phosphorus*, the PSQ showed that all the parents found their children to have improved in the area of inattention, whether taking the medication or on the placebo.

In symptoms related to impulsivity and hyperactivity, parents observed children on *Phosphorus* to have marginally more significant improvements than those children on the placebo medication. In the case of hyperactivity index symptoms, children taking *Phosphorus* were seen to have lasting effects of the improvement, whereas children on the placebo showed a reappearance of symptoms once medication was stopped.

#### **5.4.2. Conduct Problems**

Behavioural problems related to ADHD that are indicated in patients requiring *Phosphorus* are related to the child's desire to be the centre of attention at all times. Patients requiring *Phosphorus* are thus loud, talkative, highly active in public, and prone to performing and crying when feeling left out or ignored (Herscu, 1991). There is a self-centredness, which, accompanied with intense and extreme bursts of energy, can lead to a child being misbehaved and unmanageable (Vermeulen, 1997).

In symptoms related to behavioural manifestations of ADHD, accordingly grouped into Conduct Problems, children taking *Phosphorus* were observed by their parents to show more significant improvement ( $P=0.001$ ) than those children taking a placebo ( $P=0.18$ ).

#### **5.4.3. Psychosomatic Problems and Anxiety**

While both placebo and medication groups showed improvement in symptoms related to these categories, children taking *Phosphorus* not only showed more significant improvements according to the PSQ, but showed improvements that lasted beyond the

cessation of the medication. Children taking the placebo showed the reappearance or worsening of symptoms after medication was stopped.

Patients requiring *Phosphorus* are over over-anxious and hypersensitive, and are prone to developing physical manifestations of their anxieties including headaches and digestive troubles (Boericke, 1999). The improvement in the experimental group can thus possibly be attributed in part to the work of the remedy, *Phosphorus*.

## **5.5. SHORTCOMINGS AND RECOMMENDATIONS**

### **5.5.1. The Placebo Effect**

A significant placebo effect was found throughout the study. As discussed by Brody in his work on the placebo response (2000), a placebo response is a positive response, and thus may be considered a favourable result. However, when researching medication, it can not be considered a good result, since it undermines the value of the medication itself.

In this study, as children were assessed over the three weeks, they were aware of being monitored, and so even those children not on medication showed an improvement in overall behaviour in every assessment tool used. However, this improvement was not as significant as the improvement shown in children on medication, thus allowing for the possibility that *Phosphorus* was indeed having a medical effect on these children over and above the placebo effect.

Since all children in the study responded well to the increased attention they received from teachers and parents, it is worth considering a study where no medication is used at all, but where children with ADHD are given a high level of individualised attention to judge how much of an effect this has on them, and how long this effect would last if no medical intervention was given.

### **5.5.2. Repertorisation of the remedy**

Since repertorisation of the remedy is done according to rubrics considered to best suit the symptoms described, it remains a possibility that by using other similar rubrics in the repertorisation process another remedy would be considered the most ideally suited remedy for ADHD.

It must also be considered that children with ADHD may show different key symptoms within the disease framework. Thus, due to individualisation of children, as many different remedies as children may be found to be indicated. Since this is the case, it is recommended that a remedy should be chosen according to repertorisation of the disease and then matched with a short questionnaire to eliminate or include a subject. Thus only children with ADHD symptoms matching the DSM-IV criteria used for repertorisation and thereby matching the final remedy (using the short questionnaire to match the subject to other key symptoms of the remedy selected) would be used in the study.

### **5.5.3. Potency of the Remedy**

Throughout the study, children on *Phosphorus* improved slightly more than children on the placebo. However, this difference could have been more significant, had the remedy been administered in a 30CH dose as opposed to the 6CH dose that was given. According to Hahnemann (1998), 30CH medications are more potent and act in a more deep-seated manner than remedies of a lower potency.

Remedies in lower potencies are usually more effective in treating cases where only part of the symptom picture is used, for example for physical symptoms only (perhaps explaining why children taking *Phosphorus* in the study showed a significant decrease in physical restlessness and fidgeting) (Moilola, 2000). Higher potencies address the totality of the symptom picture, in other words, mental as well as physical symptoms (Moilola, 2000), and would possibly be of more benefit to future studies of this complex mental and physical disorder.

#### 5.5.4. Trial Period

It is recommended that future studies concerning this condition be conducted over a longer trial period. In the case of one of the children in the study, the mother noticed a marked improvement in her child's fidgeting hand movements and eye tic – again, physical symptoms well-matched to *Phosphorus* in low potency – towards the end of the study and believed her child would benefit from longer-term use of the remedy.

Many of the children in this study showed a desire for attention from either parents, or teachers, or both parties. Knowing that their parents and teachers would be assessing their progress could account for the fact that all children (even those on placebo) showed a general improvement in behaviour. In order to discount this “best behaviour” response, it is recommended that future studies take place over longer periods of time so as to minimise the possibility of the child maintaining their “best behaviour” for the longer time frame.

The placebo effect appeared as children were shown interest and attention from their teachers and parents. However, in many cases, by the time the trial was nearing the end, the children were more accustomed to being observed and in many of the assessments children on the placebo were noted to show a worsening or reappearance of symptoms after medication was stopped; something not observed in children taking the *Phosphorus*. Since children were still aware of being observed, it might be concluded from this deterioration that the “best behaviour” phenomenon no longer was in evidence.

This suggests that the study should be done over at least six weeks – double the length of this trial period. The first two weeks may still show marked improvement in all children desiring attention and interest from parents and teachers, but after that time period the children are more likely to slip back into natural behaviour patterns as they become accustomed to the study process.

### **5.5.5. Simillimum study**

Finding a remedy based on a simillimum picture of each individual patient accepted into the study would ensure that the child was well-matched not only to the disease picture, but also to the remedy being used. This would eliminate the need for a placebo group, but would possibly not eliminate the appearance of a “best behaviour” phenomenon occurring due to the increased level of attention and one-on-one interaction that such treatment requires. Again, the study would need to be done over a longer period of time (at least six weeks) in order to minimise the effect that increased attention given to the child might have.

### **5.5.6. Assessment personnel**

In all but three cases in the study, the teacher of the child was the initial person to draw attention to the possible presence of ADHD in the child. Because of the “labelling” of the child in this way, it is recommended that an objective professional be used to assess the child during the study. Both parent and teacher are usually in a situation where they are struggling to handle the child. This makes it difficult for them to remain objective when assessing the progress of the symptoms of the child.

### **5.5.7. CCT Format**

As suggested by Smith (2002), the CCT assessments were timed. An improvement in both time and accuracy was noted in all children over the four weeks of the study as the children became accustomed to the test format. It is suggested that four separate tests be compiled with slight differences, but the same format, so that the children do not become accustomed to page layout and individual questions.

### **5.5.8. Baseline CCT scores**

Although the CCT results showed no statistically significant improvement in the scores of children in either group, it needs to be considered that these results are skewed. None of the children scored a result lower than 77%. The test is not one that tests the knowledge of the child. The tests are straightforward and of a level far easier



than that of school work expected of children of this age group. The tests are merely to test the sustained attention of the child, and should not pose any difficulty for any of the children. Scores of 100% were common.

The results should thus be marked on a scale other than one in which 0% is an option. If this were the case, then the results would possibly show more significance. As it was in this study, the CCT Total Scores were of no real significance, and only the time taken to complete the tests was of some value.

Time taken to complete the tests, however, was also not an ideal way of judging the children's ability. The same tests were used each week, and children became more familiar with the work after the first week. This could explain why the times decreased in both the placebo and experimental groups over time.

#### **5.5.9. Family situations**

It was found that many of the children in the study came from single-parent households. Parents often shared custody of children, which meant that children had two home environments – often vastly different from each other – in which to try to adapt and learn. This is not a very stable situation, although it is a common one. These children were found to be at a disadvantage to the children who came from more stable home environments.

It is recommended that this variable be removed in future studies. It is recommended that the child's support should be stable and the child should remain in one household throughout the study. Other options would be to get all the children from unstable homes, since this may be an enhancing ADHD factor, or to compare two types of households in one study to determine the effect of the household on the child with ADHD.

#### **5.5.10. Compliance**

Although both teachers and parents were contacted every week in order to be reminded of the need to complete the assessments on their children, it was found that

the Parent Symptom Questionnaire with its forty-eight questions was considered time-consuming and it is recommended that future studies try to use an abbreviated questionnaire or perhaps a telephonic interview form in order to give the parent some relief from the completion of long forms.