

THE EFFECT OF PHYSOSTIGMA VENENOSUM ON MYOPIA

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I, Bavani Pillay, declare that this dissertation represents my own work, both in conception and execution.

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ABSTRACT

The purpose of this project was to determine how effective Physostigma venenosum is as a Homoeopathic treatment of myopia. Myopia does not have a history of spontaneous remission, therefore some form of treatment is required. Glasses and contact lenses, both widely used, have been of tremendous value in relieving the symptoms of myopia. However, the pathology itself is not treated. Surgical techniques ie. radial keratotomy, photo-refractive keratectomy and epikeratoplasty have been introduced recently. These techniques are not fool proof and the cost involved makes it highly inaccessible to the millions of myopic patients. Therefore the spotlight turns to Homoeopathy to offer a cure.

20 patients who were myopic, between the ages of 8 and 30 years and not on any medication were selected. Patients completed a questionnaire on level of satisfaction at the beginning and end of the treatment. The Physostigma venenosum was taken once a week, starting with a 5CH potency and progressing to 30CH over a 22 week period. An Optometrist determined the patients' refractive status once a month using retinoscopy and subjective refraction.

For the right eye, the retinoscopy median remained constant at (-)2,125D for the first 5 appointments. (Please note that the negative sign merely indicates myopia and therefore appears in brackets). At the 6th appointment it decreased to (-)1,875D which is a positive change (decrease of the

retinoscopy towards zero indicates improvement in myopia). At the 7th appointment , the retinoscopy increased to (-)2D. This is a slight deterioration, but it is still lower than the initial reading of (-)2,125D, which shows overall improvement for the right eye. A retinoscopy median of (-)2,375D was recorded for the left eye at the first 3 appointments. The next 3 appointments revealed a median of (-)2,25D (once again a decrease in retinoscopy which is what is required). At the 7th appointment the retinscopy increased back to the original (-)2,375D.

A careful analysis of the questionnaire results showed that 9 patients reported a greater level of satisfaction after treatment (45 % of the sample); 7 reported a decrease and 4 remained unchanged. After treatment a higher median was recorded for 8 questions, a lower median for 2 questions and an unchanged median for 5 questions. A higher median indicates a higher level of satisfaction.

These results are encouraging and indicate that Physostigma venenosum has the potential to be used as an effective means of treating myopia. However more studies are required to explore all avenues involved in the Homoeopathic treatment of myopia. This method of treatment is simple and may be carried out by any registered Homoeopath and Optometrist.

Homoeopathic medicines do not have any side effects and are curative. It is not expensive comparatively, making it feasible.

UITTREKSEL

Die doel van die ondersoek is om vas te stel hoe effektief Physostigma venenosum is as 'n Homeopatiese middel in die behandeling van bysiendheid. Bysiendheid herstel nie spontaan nie, daarom moet dit op een of ander manier behandel word. Brille en kontaklense word algemeen gebruik om die simptome van bysiendheid te korrigeer, maar die afwyking sigself word nie behandel nie. Nuwe chirurgiese metodes, soos radiale keratotomie, foto-refraktêre keratektomie en epikeratoplastie word hedendaags gebruik. Die metodes werk nie altyd volkome nie en dit is ook baie duur en dus nie beskikbaar vir miljoene bysiende pasiënte nie. Homeopatie mag miskien van waarde wees in die genesing van bysiendheid.

20 bysiende pasiënte tussen die ouderdomme van 8 tot 30 jaar wat nie op enige medikasie is, is gekies. Die pasiënte voltooi 'n vraelys aangaande die vlak van bevrediging aan die begin en aan die einde van behandeling. Physostigma venenosum is eenkeer per week geneem beginnende met 'n 5CH potensie wat progressief vermeerder is tot 30CH oor 'n periode 22 weke. 'n Optometris het die pasiënte se refraktiewe status eenkeer per maand bepaal deur retinoskopie en subjektiewe refraksie te gebruik.

Vir die regteroog het die retinoskoop mediaan konstant op (-)2.125D vir die eerste 5 afspraak gebly. Let asseblief daarop dat die negatiewe teken slegs bysiendheid aandui en

dus in hakies verskyn. Met die sesde besoek het die syfer verminder na (-)1.875D wat 'n positiewe verandering is (vermindering van die retinoskooplesing in die rigting van zero dui op 'n verbetering in bysiendheid aan). Met die sewende afspraak , het die retinoskooplesing tot (-)2D toegeneem. Dit is 'n geringe verswakking maar dit is nog laer as die eerste lesing van (-)2.125D wat op 'n algehele vordering van die regteroog dui. 'n Retinoskooplesing van (-)2.375D was aangeteken vir die linkeroog by die eerste 3 afsprake. Die daaropvolgende 3 afsprake toon 'n mediaan van (-)2.25D aan wat 'n afname in die retinoskooplesing is , wat bereik wil word. Met die sewende afspraak was retinoskooplesing weer soos aan die begin (-)2.375D.

'n Versigtige analise van die vraelys resultate toon aan dat 9 pasiente 'n groter mate van bevrediging rapporteer na behandeling (45% van die monster) , 7 het 'n afname aangetoon en 4 het geen verandering gerapporteer nie. Na behandeling was 'n hoer mediaan opgeteken in 8 vrae , 'n laer mediaan in 2 vrae en geen verandering in 5 vrae. 'n Hoër mediaan dui op 'n hoër mate van bevrediging.

Die' resultate is bemoedigend en toon aan dat Physostigma venenosum die potensiaal het om bysiendheid effektief te kan behandel. Daar moet egter meer studies gedoen word wat die Homeopatiëse behandeling van bysiendheid ondersoek. Die behandeling is eenvoudig en kan deur enige geregistreerde Optometris en Homeopaat uitgevoer word. Homeopatiëse medisyne

het geen newe effekte nie en is genesend. Dit is
vergelykenderwys nie duur nie daarom is dit uitvoerbaar.

INTRODUCTION

Myopia or shortsightedness is a condition in which vision is blurred because light rays focus in front of the retina instead of on it. This may be due to excess refractive power of the lens system or increased axial length of the eyeball. Thus far there is no history of spontaneous remission of myopia Baldwin (1981). In light of this some form of treatment is critical.

Over the years a few methods of treating myopia have been established. The most common and practical being the use of glasses. While glasses have been of tremendous value to millions of people it is not the ultimate solution. Glasses offer palliation, not cure. Also, glasses have become an expensive commodity which often have to be replaced every 2 years. In addition it poses problems in some situations e.g. when playing sport. And maybe not so important for those not affected, glasses have a cosmetic drawback and sometimes creates psychological problems in children e.g. they are teased by peers about their appearance.

Contact lenses have reduced some of these problems significantly but their use includes disadvantages such as cost and complications e.g. vascularization of the cornea and infections which may lead to visual loss.(Kerns 1981.)

In recent years 2 additional procedures have been used in correcting myopia. Firstly a lazer beam may be used to reshape the eyeball. This technique shows promise but its full implications are not known Sher(1991). Secondly , keratotomy (slits in the cornea) corrects the refractive error but reflections or glare persist and the tendency for recurrence remains. Each of the above procedures costs about R 4000 making it highly inaccessible to many of the myopic patients.

Therefore the spotlight turns to Homoeopathy to offer a solution to the vast number of people (1/4 of the worlds population) presenting with this refractive anomaly. The Homoeopathic treatment of myopia will focus not merely on relieving symptoms but on getting to the root of the problem i.e. stimulating the patients body to correct the error.

The successful treatment of myopia using Homoeopathic medication (Physostigma venenosum) will offer patients better vision (without the disadvantages discussed above) and also a better quality of life. The deterioration of eyesight may not be life threatening but vision is a precious gift which is often only appreciated when lost.

This method of treatment is feasible in that it is not expensive or lengthy when compared to other forms of

treatment. Homoeopathic medicines do not have side effects and are curative. It is a non-invasive technique. Any registered Homoeopath or Optometrist may carry out this treatment as it is a simple procedure not requiring sophisticated equipment or specialized manpower.

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CHAPTER ONE: THE PROBLEM AND ITS SETTING

1.1 THE PROBLEM STATEMENT

The purpose of this project is to determine the suitability of Physostigma venenosum in treating myopia, in terms of the patients' perceptions of the effectiveness of the treatment and the prognosis of the myopia after treatment, in order to establish how effective Physostigma venenosum is as a Homoeopathic treatment of myopia.

1.2 SUBPROBLEMS

1.2.1 The first subproblem is to evaluate the effectiveness of Physostigma venenosum, with reference to the patients' perceptions of the treatment, in order to determine what aspects of his expectations of the treatment are met.

1.2.2 The second subproblem is to analyze the appropriateness of Physostigma venenosum in treating myopia , in terms of prognosis of myopia following treatment, in order to determine how suitable Physostigma venenosum is for treatment of myopia.

1.2.3 The third subproblem is to integrate the patients' perceptions of the effectiveness of the treatment and the prognosis of the myopia after treatment, in order to establish how effective Physostigma venenosum is as a Homoeopathic treatment of myopia.

1.3 HYPOTHESES

1.3.1 The patients perceptions of the myopia treatment will be positive, that is, his expectations of the treatment will be met.

1.3.2 The prognosis of the myopia following treatment will be good (examination of the eye will reveal decrease in myopia) that is, Physostigma venenosum will be effective as a Homoeopathic treatment of myopia.

1.3.3 The patients expectations of the treatment will be met and Physostigma venenosum will be effective as a Homoeopathic treatment of myopia.

1.4 DELIMITATIONS

1.4.1 Generally, myopia is revealed at about the eighth year and progresses fairly steadily until about 20 years when normal growth stops. Sometimes myopia may increase during adulthood. Therefore the study will be limited to patients between 8 and 30 years.

1.4.2 Other pathologies present in the eye may affect the symptoms and prognosis of myopia. Therefore patients who are diagnosed as being myopic only will be selected.

1.4.3 Allopathic drugs often have side effects which may manifest in the eye e.g. blurred vision. Hence patients chosen must not be taking allopathic medication.

1.5 ASSUMPTIONS

It is assumed that:

1.5.1 the Physostigma venenosum is prepared correctly according to Homoeopathic principles.

1.5.2 the Optometrist's examination of the eye is reliable and accurate.

1.5.3 the patient follows the prescribed posology accurately.

1.5.4 the patients perceptions of the treatment are honest and unbiased.

1.6 THE DEFINITION OF TERMS

1.6.1 MYOPIA -:

This is a refractive error of the eye in which the eyeball is too long or the lens has too much refractive power. The result of this is blurred vision.

1.6.2 PHYSOSTIGMA VENENOSUM -:

This is a climbing plant belonging to the family Leguminosa. Its common name is the calabar bean. Physostigmia is the active principle of Physostigma.

1.6.3 RETINOSCOPY -:

This is the objective determination of the refractive error by means of an instrument called the retinoscope.

1.6.4 DIOPTRE (D) -:

It is the unit of measurement of the refractive power of the lens.

CHAPTER TWO: REVIEW OF THE RELATED LITERATURE

2.1 INTRODUCTION

Myopia is a refractive anomaly in which light rays focus in front of the retina instead of on it ; thereby causing blurred vision. About one quarter of the worlds population is known to be myopic Sherman (1993). This makes it a significant problem which needs to be addressed. The different sections that will be covered in this review are etiology , prevalence and management.

2.2 ETIOLOGY

As early as 1867 Cohn (cited by Hirsch 1979) put forward the Use-abuse theory as a cause of myopia. According to this theory myopia is a outcome of continual focussing on a near object. The continual accommodation exerts stress on the choroid and elongates the choroid and sclera along the anterior posterior axis of the eyeball. This results in light rays converging before they reach the retina, hence myopia. From this explanation, it may be concluded that prolonged near work e.g. reading is significant in inducing myopia. However the use-abuse theory does not substantiate the existence of myopia in people not exposed to prolonged near work eg. babies.

Advocates of the heredity or biological theory state that differences among ethnic groups suggests a genetic cause Baldwin (1981). It is postulated that the progression of myopia is due to growth ie. as normal growth occurs , the axial length of the eyeball increases leading to an increase in myopia. When normal growth is completed , the myopia stabilizes. This theory explains the presence of myopia in very young children and people not exposed to over accommodation. It does not explain the progression of myopia once growth has stopped. Numerous studies have been carried out in an attempt to substantiate each of these 2 theories but none have proved to be conclusive.

2.3 PREVALENCE

Studies on the prevalence of myopia help to explain each of the 2 etiologies discussed above.

According to the use-abuse theory both eyes should be affected equally as both are involved in the near work. However Poos (1930) (in Hirsch 1979) pointed out that myopia is most often unilateral. Paul (1938) noted that when both parents were emmetropic (normal vision) only 10% of the children were myopic. When 1 parent was myopic , 30% of the children were myopic and if both parents were myopic then 69% of the children were myopic. This suggests a genetic cause.

A comparison of the prevalence of myopia among different ethnic groups residing in the same country revealed the following. Dzen (1921) found more Chinese myopic patients than Caucasian at a clinic (52.4% versus 21.55%). In their study of myopic school children Crawford and Hammon (1949) reported the highest prevalence among Chinese students (17.5%). Japanese students indicated a 12.2% incidence and Koreans 13.1%. Sorsby (1951) found that Jewish children and adults displayed a higher occurrence of myopia than non-Jewish populations in the same country. Pendse , Bhave and Dandekar (1954) and McLaren (1961) found a virtually identical prevalence of myopia among Indian children in India and East Africa. These studies support the genetic etiology of myopia.

Interestingly , Crawford and Hammon (1949) found the lowest incidence of myopia in the Danish , Eskimos , North American Indians and Blacks. However , with the introduction of formal education , there was a significant increase in myopia. According to Irmak (1938) (in Baldwin 1981) , myopia is much less common among nomadic tribes in Asia Minor than other populations in the area. Tscherning (1883) (in Hirsch 1979) reported 2.45% myopia in farmers , 15.76% in merchants and 32.38% in students. Rasmussen (1936 and 1948) found the prevalence of myopia to be twice as great in China than England or Scotland (he used similar criteria in all cases).

Nakamura (1954) found the draftees examined before selection for the Japanese Army displayed a higher incidence than a similar United States group (30% versus 20%) . The Chinese and Japanese are highly studious nations. Therefore , it may be postulated that this aspect of their life style i.e. prolonged near work plays a significant role in the etiology of their myopia. These results reinforce the use-abuse theory.

Other interesting factors related to myopia have been published. For example Hirsch (1959) studied the relation between myopia and intelligence scores of 554 students age 6 to 17 years. He found that the myopes had an IQ considerably above the average. On the other hand , Young (1963) found no significant correlation between the refractive state and IQ of American college students. In 1970 Young , Leary and Baldwin found a significant positive relation between refractive error and test scores i.e. higher refractive error with higher test scores.

Feldman (1950) found lowered calcium metabolism in myopes (calcium is required for muscle functioning). Schultz (1960) reported positive relations between myopia and endomorphism (short , heavy people) although investigators such as Beedle and Young (1976) did not find this relation. Pendse et al. (1954) studied the relationship between myopia and height.

They found a significantly higher number of myopes were above average height. They also reported that adolescent females exhibit myopia at an earlier age possibly ;due to the more rapid growth rate.

2.4 MANAGEMENT OF MYOPIA

The management of myopia may be classified as Allopathic , Homoeopathic or Naturopathic.

2.4.1 THE ALLOPATHIC TREATMENT OF MYOPIA

The medical treatment of myopia has been approached from different angles namely glasses , contact lenses and surgery.

2.4.1.1 GLASSES

Investigations were carried out on the effect of bifocal lenses on myopia. In his study , Miles (1962) considered myopic children originally wearing single vision lenses and later bifocals . Consequently , the change to myopia decreased substantially. However , it is critical to note the age of the children when they wore bifocals as myopia typically shows less progression with age. The findings of Oakley and Young (1975) indicate that myopes wearing bifocals show a slower rate of progression. Other studies show less or no benefits from bifocals. This suggests that not all myopes

will benefit equally from wearing bifocals. Mandell (1959) suggests that the extent of the refractive error may also influence the effect of bifocals. In concluding his paper, Greenspan (1981) states that bifocals may be a useful approach in the treatment of myopia when prescribed discriminately for selected patients.

The bottomline of these studies is that glasses relieve the symptoms of myopia by aiding the eye in its function i.e. it diverges light rays so that they converge exactly on the retina. But in the final analysis, the cause is not being addressed i.e. the patient is still myopic.

2.4.1.2 CONTACT LENSES

A review of the literature on the effects of contact lenses on myopia reveals conflicting opinions and conclusions. According to Kerns (1981) contact lenses tend to retard myopia progression and reduce the refractive error. The most definitive study of contact lens and myopia was done by Stone (1976). She reported that glasses wearers increased in myopia by an average of 1.75D over a 5 year period and also presented with slight astigmatism. The contact lens wearers showed an average decrease of 0.12D over 5 years plus an average increase in astigmatism of 0.87D. The difference between the 2 groups was found to be statistically significant at the 0.05 level. There appears to be a stabilization and a slight reduction of myopia in contact

lens wearers. However , this change is at the expense of increasing the refractive astigmatism. It appears that contact lenses either inhibit structural changes from occurring or that they cause changes in the eye which tend to compensate for the myopia.

Kerns (1981) argues quite correctly that an increase in astigmatism challenges the concept of control. It is Stones conjecture that contact lenses may actually inhibit elongation of the eyeball or increase in lens power ; thus reducing the rate of myopia progression. It should also be noted that contact lenses are usually used by young adults and older people ; by which time myopia has stabilized.

Kerns (1981) attributes the variation in data on myopia and contact lenses to 1 or a combination of the following :

1. individual idiosyncrasies
2. myopia control with contact lenses lacks precision
3. contact lenses may affect only certain cases of myopia

Considering the advantages offered by contact lenses to myopic patients , it is no wonder that it is the second most common form of treatment of myopia. These include the cosmetic effect , is physically more convenient e.g. certain occupations such as sportsmen , firefighters and as an alternative for patients whose refractive errors cannot be

corrected with glasses. The advent of soft lenses and extended wear makes this indeed an attractive alternative. On the other hand , the use of contact lenses predisposes the patient to eye infections. Also , the cost is often a determining factor when considering this treatment. And as with glasses when compared to Homoeopathy , contact lens treatment is palliative , not curative.

2.4.1.3 SURGERY

In the quest to obtain better eyesight without glasses , 3 major surgical procedures have been advanced namely radial keratotomy , the excimer lazer and epikeratoplasty.

2.4.1.3.1 RADIAL KERATOTOMY

Radial keratotomy is the most widely used of the 3 operations and consists of incisions made in the cornea which alters its curvature leading to a decrease in myopia. Several hundred thousands of this procedure has been done worldwide in the past 10 years. However , there is no consensus on radial keratotomy among ophthalmologists. The Prospective Evaluation of Radial Keratotomy (PERK) study is a multi centre trial designed to assess the efficacy , predictability , safety and stability of radial keratotomy. The study was carried out over 4 years by Waring (1990).

A major drawback of radial keratotomy is the inability to accurately predict the outcome for an individual eye. It

should be emphasized that all surgeons and more importantly all patients would like to know the extent of refractive error that may persist. Studies of predictability have concluded that 90% of the eyes will have a residual refractive error within $\pm 2D$ of the predicted result. This contrasts with the predictability achieved in fitting glasses or contact lens which may be fitted with an accuracy of $\pm 0.5D$. Causes of unpredictability include difficulty in repeating the exact operation i.e. reproducing the incision depth , variation in corneal wound healing and the changing refraction over the years after surgery.

While the goal of radial keratotomy is emmetropia (perfect vision) , undercorrection or overcorrection may occur. Many surgeons consider mild residual myopia as the ideal as it delays the onset of presbyopia. Accepting partial correction depends on the patients expectations of the treatment i.e. some patients may be satisfied with merely a decrease in myopia while others may be disappointed with a result that is not perfect. Keratotomy may be repeated on such patients. However , the effectiveness and predictability of repeated keratotomy is less than that of the initial operation.

(Cowden , Lynn & Waring 1987.)

With overcorrection , the refractive error is converted from myopia to hyperopia (farsightedness) an undesirable outcome.

This hastens the onset of presbyopia compelling patients over 40 years to wear corrective lenses. So much so that the hyperopic patient sees poorly both at distance and near ; the very condition he tried to remedy by having radial keratotomy.

Generally , the refraction stabilizes by 3 to 6 months after surgery. In the PERK study (1990), 75% of the eyes maintained stable refraction between 6 months and 4 years after surgery; while 20% showed continued effect of the surgery. How long this persists for is unknown. Also , it is not possible to identify the individuals who will manifest with this.

Decrease or loss of best corrected visual acuity may occur after radial keratotomy. In the PERK study (1990), this was the case with 2.5% of the eyes. The loss may be due to an irregular corneal surface because of the incision scars. According to the PERK study (1990), 1 year after surgery there was no significant increase in disability glare (ie. glare that disrupts daily activities). However , many patients report the presence of radiating lines around focal light sources. This affects vision at night.

Binocular vision may be diminished after radial keratotomy. Problems of anisometropia due to asymmetrical correction ,

induced astigmatism or surgery on only 1 eye may lead to double vision , spatial disorientation or loss of fine depth perception. Potentially blinding complications may occur but are rare. The incisions weaken the cornea permanently and traumatic rupture of the cornea at the site of the scars has occurred previously. Many patients may require ocular surgery later on for some other reason e.g.cataracts. The weakened keratotomy scars may hinder such procedures. (Waring 1989.)

Clinical and laboratory data has now brought about a measure of safety and effectiveness to radial keratotomy. However , it is imperative that the patient understands the following : that the outcome of the surgery cannot be predicted accurately , glasses or contact lenses may still be required after surgery and contact lens wearing may become more difficult due to changes in the shape of the cornea. Surgery does not alter the normal ageing process of the eye , therefore the patient may require reading glasses after the age of 45. Complications arising from radial keratotomy may affect the patients occupation e.g. a disability glare.

2.4.1.3.2 PHOTO REFRACTIVE KERATECTOMY

According to Sher (1991) the excimer lazer (Photo Refractive Keratectomy) offers yet another new technique for the

permanent reduction of myopia. This procedure involves re-shaping the eyeball with a lazer beam. A few comparisons may be made between this method and radial keratotomy. Firstly , in photo refractive keratectomy there was no evidence of progressive myopia or hyperopia after 3 months. In contrast to radial keratotomy there was minimal glare , no chance of perforation , no recurring erosions or structural weakening.

It is feasible and easier to perform photo refractive keratectomy through an intact corneal epithelium. However , accurate clinical methods of evaluating the thickness of the epithelium are absent. Therefore the epithelium is removed routinely before the operation in order to improve predictability of the procedure.

Sher (1991) found that photo refractive keratectomy can be performed safely using topical anaesthesia instead of peribulbar blocks. Patients also experience less post operative pain. The location of the optical zone is extremely important. According to Maloney (1990) a small or de-centred optical zone may decrease acuity , lessen sensitivity or produce glare.

Seiler and Wollensak (1991) reported significant night glare in their patients after using a lazer beam Of 3.5mm diameter. This was resolved by using a 5mm lazer. These preliminary studies show the potential of the 193nm excimer lazer to reduce moderate myopia.

2.4.1.3.3 EPIKERATOPLASTY

Epikeratoplasty was introduced in 1980 for the correction of aphakia. It has also been used for the correction of myopia but with less acceptable results. Complications of epikeratoplasty include persistent epithelial defects , vascularization and a haze McDonald (1987). Rao (1987) described morphological changes within the epithelium 3 , 6 and 16 months after surgery. On the other hand , Busin (1990) found that both the functional and morphological characteristics of the cornea were within normal limits even 6 weeks after epikeratoplasty.

Despite advances in surgical procedure , optical and refractive difficulties are still common e.g. overcorrection, undercorrection , loss of best corrected visual acuity from pre-operative values and instability of the refractive correction over time. Wagoner and Steinert (1989) reported a 48% success rate for myopic epikeratoplasty , not a very satisfactory result.

The study of epikeratoplasty by Carney and Kelly (1991) showed that patients undergoing this technique are likely to have significant residual vision losses , indicating the inadequate nature of this form of refractive correction.

2.4.2. THE HOMOEOPATHIC TREATMENT OF MYOPIA

A study on the Homoeopathic treatment of myopia by Basu (1980) revealed significant improvement in vision. The remedy used was Physostigma venenosum prepared according to the Korsakovian method. The experiment was done over 180 days. One drop of the remedy was taken orally on each of the treatment days. There was no treatment on the days not mentioned. On the first 3 days a 30K potency was taken , 40th to 42nd day 200K , 85th to 87th day 1000K and 130th to 132nd day 10 000K.

Of the 45 patients , 57.7% attained normal vision i.e. 6/6 visual acuity. Although the remaining patients were still myopic they achieved very significant increases in visual acuity e.g. of the 7 patients who originally had 6/24 vision 6 achieved 6/9 vision while 1 achieved 6/18 vision after treatment. In laymans terms 6/24 means that the patient could identify an object 6 metres away which a person with normal vision could identify 24 metres away. 6/9 means that the patient could identify an object 6 metres away which a person with normal vision could identify 9 metres away. This underscores the immense improvement considering the nature of Homoeopathic medication i.e. it is curative not palliative , gentle , natural and does not cause side effects or

complications. This is indeed a recommended method of treatment. However , further research is required to perfect this gentle art of healing (i.e. give all patients 100% recovery).

2.4.3 THE NATUROPATHIC TREATMENT OF MYOPIA

In keeping with holistic healing , vision training may be used in the management of myopia. In his book "Better eye sight without glasses" , Bates (1920) describes myopia as follows :

Many cases of defective vision are the result of strain upon the exterior muscles of the eye , which in time causes the eyeball to change its shape. Exterior muscles are often seen as merely for moving the eye up and down ; that they change the shape of the eye continuously during vision has not been generally appreciated. Therefore the cause of myopia is seen as organic (permanent) and as a result of subjecting the eyes to harmful conditions bad / artificial light , cinemas , personal computers , television and excess reading.

The new viewpoint is that the above conditions do not produce defection. They may aggravate an already existing tendency to defective vision due to a strained and contracted condition

of the exterior muscles. Therefore this "cause" is really a secondary factor. Optometrists are concerned with how to help sufferers overcome the disability , therefore glasses. But the root of the problem is not investigated. Wearing glasses does not improve the eyes. It is only an aid. The eye is not allowed to accommodate for near and distant objects anymore as this is done by the glasses. The strained muscles (which prevented accommodation initially) is intensified by the eye being held in a rigid position. This is why continual reliance on spectacles tends to make the eyes worse (i.e. the cause of the problem is not removed but rather aggravated by artificial conditions which impose strain on already strained muscles). The longer glasses have been worn , the more time required to break the strain. (Bates 1920.)

Dr. Bates' theory of relaxation states that mental strain leads to physical strain on the eyes and their muscles and nerves which cause defective vision. Therefore , relaxing the mind relaxes the eyes i.e. mind body medicine. Bates (1920) ignores other causes of strain which is a limitation of his study. Another cause of defective vision is incorrect diet which clogs arteries and muscles.

This technique definitely has merit and the potential to be a leading form of management. It is a gentle , non-invasive method which is free from side effects and complications. It is also cost effective and may be practised by any myope.

However as Bates (1920) did not explain this approach fully and it lacks scientific basis , it is not widely practised.

Friedman (1981) states that relatively few eye care practitioners have reported clinical results in myopia control training programmes and that adequately designed studies emphasizing vision training as the primary therapeutic variable is non existent.

2.5 CONCLUSION

From the information presented , it is evident that myopia is a widely researched topic. However , several factors eg. etiology need to be clarified. The management of myopia has been approached from different angles but none of them is completely successful. Hence , the search goes on.

2.6 SUMMARY

1. ETIOLOGY

The etiology of myopia may be :

- a) environmental (use-abuse theory) eg. prolonged near work. This puts pressure on the choroid which causes an increase in axial length of the eyeball leading to myopia.
- b) hereditary (biological theory). As normal growth occurs , the eye also grows (ie. increases in axial length) leading to myopia.

2. PREVALENCE

According to Rasmussen (1936 & 1948) and Nakamura (1954) myopia seems to be more common in Chinese , Japanese and Jews. Research by Crawford and Hammon (1949) showed the lowest prevalence of myopia among Danish , Eskimos , North American Indians and Blacks.

3. MANAGEMENT

The management of myopia may be Allopathic , Homoeopathic or Naturopathic.

3.1 ALLOPATHIC

The allopathic treatment of myopia is multi-faceted. The following forms of treatment are available :

a. GLASSES :

These are the most cost effective and practical and is therefore suitable for the millions of myopic patients. However , glasses palliate the symptoms ;they do not cure.

b. CONTACT LENSES :

This has several advantages eg. the cosmetic effect , more suitable for some occupations eg.sportsmen and providing an alternative for patients whose refractive error cannot be corrected with glasses. Disadvantages include infection , cost and not solving the cause of the problem.

c. SURGERY :

Surgical procedures include radial keratotomy (most common) ,

the excimer lazer and epikeratoplasty. These techniques attempt to provide a patient with better eyesight without glasses (which is undoubtedly what almost every myope wants). However the complications which may occur outweigh the advantages. For example , the results cannot be predicted. Therefore the patient may find that he still has to wear glasses. The use of contact lenses or further eye surgery is difficult once these techniques have been performed. The loss of best corrected visual acuity and presence of disability glare and infections must be considered.

3.2 HOMOEOPATHIC

The effect of Homoeopathic Physostigma venenosum on myopia indicates the potential of this method of treatment Basu (1980). Added advantages of Homoeopathic treatment are the absence of side-effects and palliation ; but rather cure.

3.3 NATUROPATHIC

A naturopathic approach eg. the Bates method recommends a specific diet , exercise and relaxation techniques. It shows much promise but controlled , scientific tests need to be carried out before it is widely accepted.

Over the years a wealth of knowledge regarding myopia has been gleaned. But much work needs to be done to improve the lives of 25% of the worlds population which is affected by this refractive anomaly.

CHAPTER THREE : MATERIALS AND METHODS

1. An advertisement was placed in a local newspaper inviting individuals of different ages (8 to 30 years) , sexes , occupations , races and socio-economic backgrounds to participate in the research project.
2. At the first appointment ,the Optometrist performed a complete examination of the eye. The student Homoeopath took a full case history. A sample of 20 patients between the ages of 8 and 30 years who were myopic and not on any medication was chosen. Myopia does not have a history of spontaneous remission Baldwin (1981) ;therefore there was no control group.
3. Patients then completed a questionnaire on level of satisfaction.
4. Patients took a dose of Physostigma venenosum 5CH once a week for 4 consecutive weeks.
5. The Optometrist determined the patient's refractive status.
6. Patients then took a dose of Physostigma venenosum 7CH once a week for 4 consecutive weeks.
7. The Optometrist determined the patient's refractive status.
8. Patients took a dose of Physostigma venenosum 9CH once a week for 4 consecutive weeks.
9. The Optometrist determined the patient's refractive status.

10. Patients took a dose of Physostigma venenosum 15CH every second week over an 8 week period. Therefore 4 doses were taken.

11. The Optometrist determined the patient's refractive status.

12. Patients took 1 dose of Physostigma venenosum 30CH 2 weeks after the last dose of 15CH was taken.

13. The Optometrist determined the patient's refractive status.

14. 2 months later the Optometrist determined the patient's refractive status.

15. Patients once again completed the questionnaire on level satisfaction.

16. All patients took the medicine on an appointed day ie. each Sunday. The medicine was in the form of granules and was taken sublingually.

17. The optometric examination included subjective refraction and retinoscopy :

- SUBJECTIVE REFRACTION is a method of determining the optical correction required. It depends on the patient's ability to discern changes in the clarity of the test object as the trial lenses are changed.

- RETINOSCOPY (OBJECTIVE REFRACTION) : The Optometrist decides with the aid of an instrument (retinoscope) which lens combination gives the best optical correction for the ametropia (defective vision). The findings of the objective

refraction are checked subjectively and even these results may need modification to increase the comfort of the lenses prescribed.

Retinoscopy is the most common objective measurement of ametropia. In retinoscopy the fundus acts as a fixed screen over which a spot of light is moved. The Optometrist watches the shape and movement of the path of reflected light within the pupil; and by placing trial lenses in front of the patient's eye modifies the speed of movement of the reflex to arrive at neutrality ie. when there is no longer any movement and a bright patch of light fills the pupil. Neutrality is the state which gives the prescription.

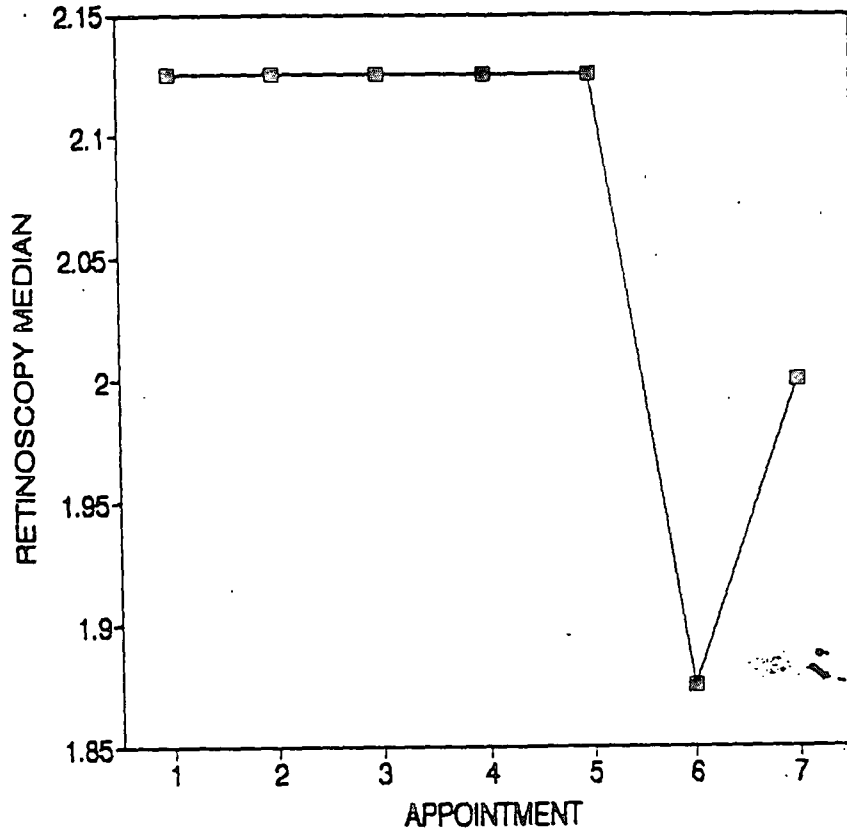
18. Descriptive statistics are used ie. tables , graphs and medians. There is no inferential statistics.

CHAPTER FOUR: RESULTS

PATIENT	1		2		3		4		5		6		7	
	R	L	R	L	R	L	R	L	R	L	R	L	R	L
1	-0.75	-1.00	-0.75	-1.00	-0.75	-1.00	-0.75	-1.00	-0.75	-1.00	-0.75	-1.00	-0.75	-1.00
2	-7.50	-7.50	-7.50	-7.50	-7.50	-7.50	-7.50	-7.50	-7.50	-7.50	-7.50	-7.50	-7.50	-7.50
3	-3.25	-2.25	-2.25	-2.25	-2.25	-2.25	-2.25	-2.25	-2.25	-2.25	-2.25	-2.25	-2.25	-2.25
4	-3.00	-2.75	-2.75	-2.75	-2.75	-2.75	-2.75	-2.75	-2.75	-2.75	-2.75	-2.75	-2.75	-2.75
5	-4.50	-4.75	-5.25	-5.00	-5.00	-5.00	-5.00	-5.00	-5.00	-5.00	-5.00	-5.00	-5.00	-5.00
6	-2.75	-2.75	-2.75	-2.75	-2.75	-2.75	-2.75	-2.75	-2.75	-2.75	-2.75	-2.75	-2.75	-2.75
7	-1.75	-1.80	-1.75	-1.75	-1.75	-1.75	-1.75	-1.75	-1.75	-1.75	-1.75	-1.75	-1.75	-1.75
8	-3.50	-3.00	-3.50	-3.50	-3.50	-3.50	-3.50	-3.50	-3.50	-3.50	-3.50	-3.50	-3.50	-3.50
9	-1.50	-2.00	-1.50	-2.00	-1.50	-2.00	-1.50	-2.00	-1.50	-2.00	-1.50	-2.00	-1.50	-2.00
10	-3.00	-3.00	-1.75	-2.00	-1.75	-2.00	-1.75	-2.00	-1.75	-2.00	-1.75	-2.00	-1.75	-2.00
11	-0.25	-0.25	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50	-0.50
12	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75	-0.75
13	-8.00	-6.50	-6.75	-6.75	-6.75	-6.75	-6.75	-6.75	-6.75	-6.75	-6.75	-6.75	-6.75	-6.75
14	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25	-0.25
15	-2.00	-2.50	-2.00	-2.50	-2.00	-2.50	-2.00	-2.50	-2.00	-2.50	-2.00	-2.50	-2.00	-2.50
16	-3.75	-2.75	-4.00	-4.00	-4.00	-4.00	-4.00	-4.00	-4.00	-4.00	-4.00	-4.00	-4.00	-4.00
17	-1.25	-0.50	-1.25	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00	-1.00
18	-3.00	-3.00	-3.25	-3.25	-3.25	-3.25	-3.25	-3.25	-3.25	-3.25	-3.25	-3.25	-3.25	-3.25
19	-1.75	-2.25	-1.75	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00	-2.00
20	-2.50	-3.50	-2.50	-2.50	-2.50	-2.50	-2.50	-2.50	-2.50	-2.50	-2.50	-2.50	-2.50	-2.50
Median	-2.125	-2.375	-2.125	-2.375	-2.125	-2.375	-2.125	-2.375	-2.125	-2.375	-2.125	-2.375	-2.125	-2.375

TABLE 1 : RETINOSCOPY OF EACH OF THE 20 PATIENTS AT THE 7 APPOINTMENTS WITH MEDIANS.

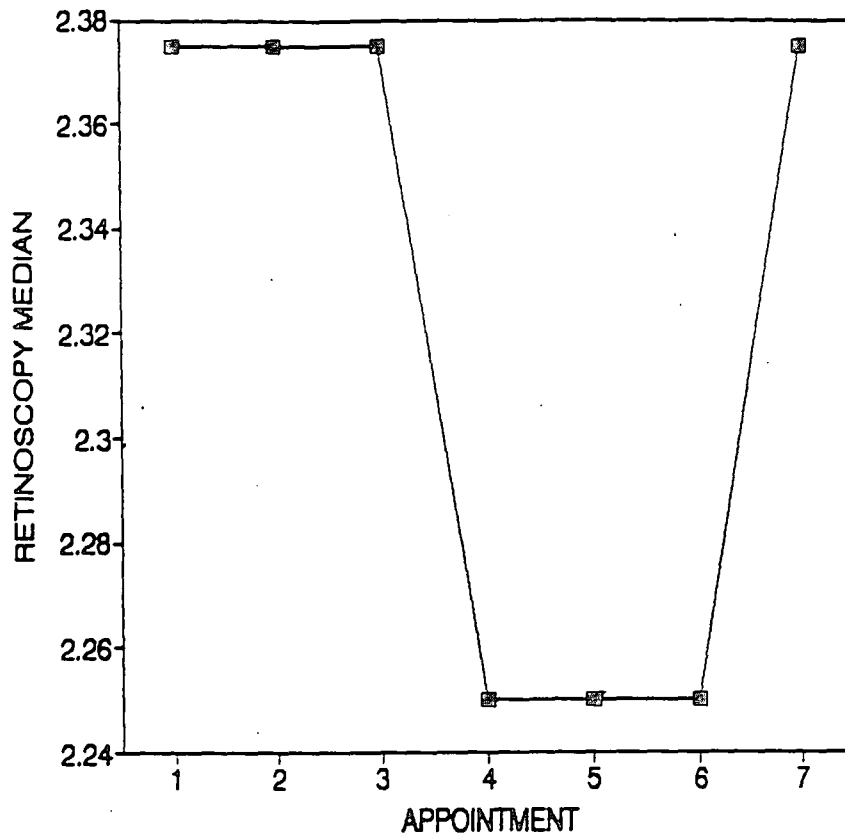
NB. Retinoscopy closer to 0 indicates improvement, away from 0 indicates deterioration. For the right eye, retinoscopy median was constant for first 5 appointments, improved at the 6th appointment and deteriorated slightly at the 7th appointment. For the left eye, retinoscopy median was constant at first 3 appointments, improved at next 3 then reverted to original reading at 7th appointment.



+-----+
 | A. RIGHT EYE |
 +-----+

FIGURE 1a : SCATTER DIAGRAM SHOWING MEDIANS OF THE 7 APPOINTMENTS

NB. Retinoscopy remained constant at first 5 appointments ; decreased at the sixth appointment (indicating improvement) ; then increased slightly at seventh appointment.



+-----+
 | B.LEFT EYE |
 +-----+

FIGURE 1b : SCATTER DIAGRAM SHOWING MEDIANS OF THE 7 APPOINTMENTS

NB. Retinoscopy remained constant at first three appointments ; decreased in the next three appointments (indicating improvement) ; then increased to the original reading at the seventh appointment (indicating deterioration)

PATIENT	1	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	7A	7B	8A	8B	TOTAL
1	7.0	9.0	3.0	9.0	6.0	10.0	7.0	10.0	4.0	10.0	5.0	10.0	5.0	10.0	5.0	110.0
2	8.0	9.0	3.0	10.0	6.0	10.0	3.0	10.0	2.0	10.0	2.0	9.0	5.0	10.0	10.0	107.0
3	7.0	10.0	5.0	10.0	9.0	10.0	2.0	10.0	4.0	10.0	4.0	10.0	10.0	0.0	5.0	106.0
4	8.0	7.0	1.0	10.0	10.0	10.0	2.0	10.0	8.0	10.0	2.0	10.0	5.0	10.0	10.0	113.0
5	10.0	10.0	0.0	10.0	1.0	10.0	0.0	10.0	3.0	7.0	1.0	1.0	1.0	10.0	1.0	75.0
6	9.0	9.0	5.0	10.0	5.0	10.0	9.0	9.0	3.0	10.0	3.0	10.0	9.0	10.0	6.0	117.0
7	10.0	10.0	2.0	9.0	9.0	10.0	5.0	10.0	9.0	10.0	5.0	9.0	6.0	10.0	5.0	119.0
8	9.0	10.0	1.0	10.0	1.0	4.0	2.0	10.0	1.0	10.0	1.0	10.0	5.0	10.0	10.0	94.0
9	6.0	8.0	3.0	9.0	6.0	8.0	4.0	7.0	4.0	8.0	3.0	9.0	9.0	7.0	3.0	94.0
10	5.0	8.0	4.0	9.0	4.0	9.0	3.0	9.0	4.0	9.0	4.0	9.0	4.0	6.0	4.0	91.0
11	8.0	10.0	8.0	10.0	7.0	10.0	7.0	10.0	8.0	10.0	7.0	10.0	10.0	7.0	5.0	127.0
12	7.0	10.0	1.0	10.0	3.0	10.0	0.0	10.0	3.0	10.0	0.0	5.0	10.0	10.0	0.0	89.0
13	8.0	7.0	0.0	9.0	3.0	8.0	0.0	8.0	1.0	10.0	0.0	10.0	10.0	8.0	1.0	83.0
14	9.0	10.0	3.0	10.0	5.0	10.0	4.0	10.0	3.0	10.0	3.0	10.0	6.0	10.0	6.0	109.0
15	10.0	8.0	1.0	7.0	10.0	8.0	1.0	9.0	9.0	8.0	1.0	9.0	1.0	9.0	7.0	98.0
16	8.0	10.0	3.0	10.0	9.0	10.0	10.0	9.0	9.0	10.0	8.0	8.0	5.0	9.0	9.0	127.0
17	10.0	8.0	2.0	5.0	8.0	9.0	5.0	7.0	10.0	10.0	5.0	10.0	10.0	9.0	5.0	113.0
18	10.0	8.0	3.0	10.0	10.0	9.0	3.0	10.0	10.0	10.0	4.0	10.0	9.0	10.0	10.0	126.0
19	7.0	7.0	3.0	8.0	7.0	7.0	4.0	7.0	5.0	8.0	3.0	7.0	4.0	10.0	10.0	97.0
20	9.0	9.0	3.0	9.0	9.0	8.0	3.0	9.0	9.0	9.0	3.0	9.0	10.0	9.0	7.0	115.0
MEDIAN	8.0	9.0	3.0	10.0	6.5	10.0	3.0	10.0	4.0	10.0	3.0	9.5	6.0	10.0	5.5	

TABLE 2 : PATIENT'S LEVEL OF SATISFACTION (QUESTIONNAIRE RESULTS) BEFORE TREATMENT

NB. A high total or median implies a positive response , low total or median indicates negative response. 12 patients obtained a total > 100 (this may be regarded as good.). The 8 totals < 100 are satisfactory. The 11 medians >5 indicate a positive response, the 4 medians <5 indicate a negative response.

PATIENT	1	2A	2B	3A	3B	4A	4B	5A	5B	6A	6B	7A	7B	8A	8B	TOTAL
1	7.0	10.0	5.0	10.0	5.0	10.0	4.0	10.0	5.0	10.0	5.0	8.0	3.0	9.0	5.0	106.0
2	8.0	9.0	2.0	10.0	4.0	10.0	3.0	10.0	2.0	10.0	3.0	10.0	4.0	10.0	10.0	105.0
3	3.0	10.0	4.0	10.0	10.0	10.0	7.0	10.0	7.0	10.0	6.0	10.0	10.0	8.0	8.0	123.0
4	7.0	8.0	1.0	10.0	9.0	10.0	1.0	10.0	8.0	10.0	1.0	10.0	8.0	10.0	10.0	113.0
5	10.0	10.0	0.0	10.0	5.0	10.0	6.0	10.0	1.0	8.0	0.0	2.0	2.0	5.0	1.0	80.0
6	10.0	10.0	5.0	10.0	10.0	10.0	4.0	10.0	8.0	10.0	5.0	10.0	9.0	10.0	8.0	129.0
7	10.0	10.0	5.0	10.0	10.0	10.0	5.0	10.0	8.0	10.0	8.0	10.0	8.0	10.0	7.0	131.0
8	9.0	10.0	2.0	10.0	5.0	10.0	2.0	10.0	2.0	10.0	1.0	9.0	1.0	10.0	10.0	101.0
9	6.0	9.0	4.0	9.0	6.0	8.0	5.0	7.0	6.0	8.0	4.0	9.0	9.0	8.0	3.0	101.0
10	10.0	9.0	4.0	9.0	4.0	5.0	9.0	10.0	5.0	9.0	4.0	10.0	4.0	10.0	2.0	104.0
11	9.0	8.0	6.0	10.0	8.0	8.0	5.0	6.0	5.0	9.0	8.0	8.0	8.0	8.0	6.0	112.0
12	6.0	10.0	2.0	10.0	5.0	10.0	0.0	10.0	0.0	10.0	0.0	4.0	10.0	10.0	10.0	97.0
13	9.0	10.0	0.0	9.0	3.0	5.0	0.0	9.0	1.0	9.0	0.0	10.0	8.0	9.0	2.0	84.0
14	10.0	9.0	4.0	10.0	8.0	10.0	4.0	10.0	1.0	10.0	4.0	9.0	1.0	4.0	1.0	95.0
15	10.0	9.0	1.0	9.0	10.0	9.0	1.0	9.0	10.0	9.0	1.0	9.0	1.0	8.0	8.0	104.0
16	10.0	10.0	3.0	10.0	8.0	5.0	4.0	10.0	6.0	10.0	3.0	2.0	2.0	7.0	8.0	98.0
17	9.0	8.0	4.0	5.0	8.0	8.0	6.0	4.0	10.0	10.0	5.0	10.0	10.0	5.0	2.0	104.0
18	10.0	7.0	1.0	10.0	8.0	10.0	8.0	10.0	8.0	10.0	4.0	10.0	10.0	10.0	10.0	126.0
19	7.0	8.0	4.0	7.0	7.0	10.0	8.0	7.0	4.0	8.0	4.0	5.0	5.0	7.0	4.0	95.0
20	10.0	8.0	3.0	10.0	8.0	10.0	6.0	10.0	7.0	10.0	7.0	8.0	7.0	5.0	5.0	114.0
Median	9.0	9.0	3.5	10.0	8.0	10.0	4.5	10.0	5.5	10.0	4.0	9.0	7.5	8.5	6.5	

TABLE 3: PATIENT'S LEVEL OF SATISFACTION (QUESTIONNAIRE RESULTS) AFTER TREATMENT

NB. A high total or median indicates a favourable response , low total/median implies unfavourable response. 14 patients obtained a total >100 (good response). The 6 totals < 100 are satisfactory. The 12 medians > 5 indicate positive response , the 3 medians < 5 indicate negative response.

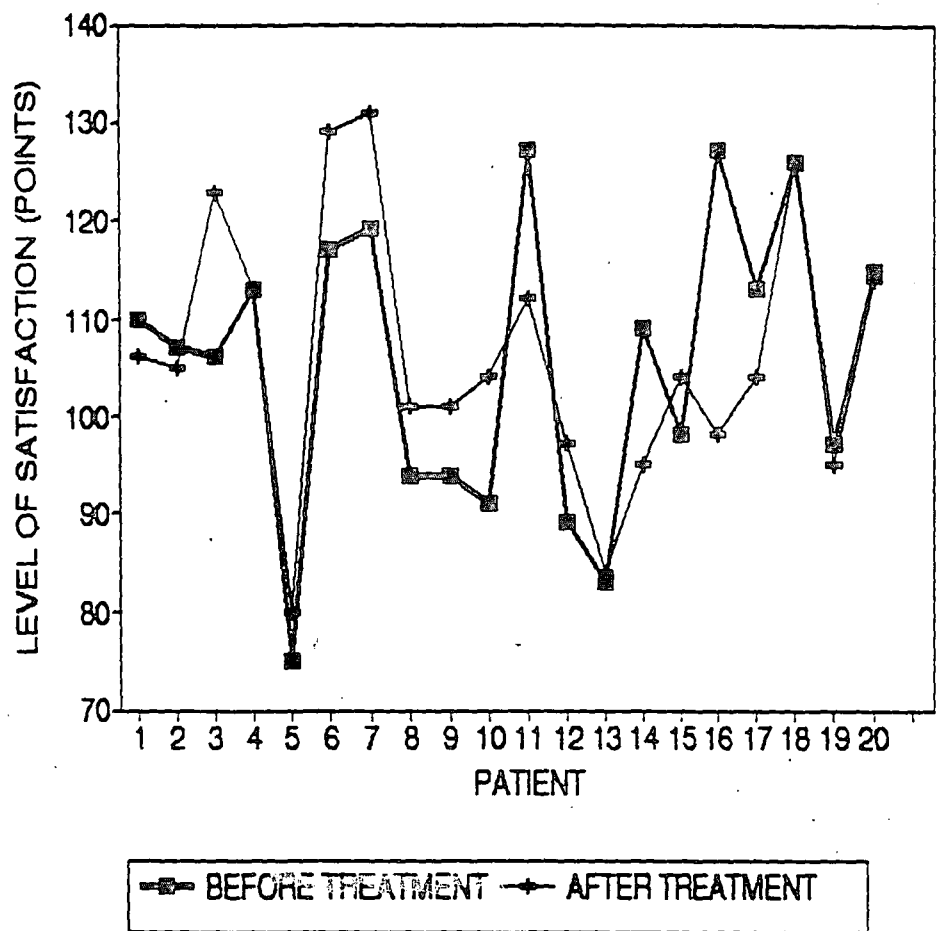
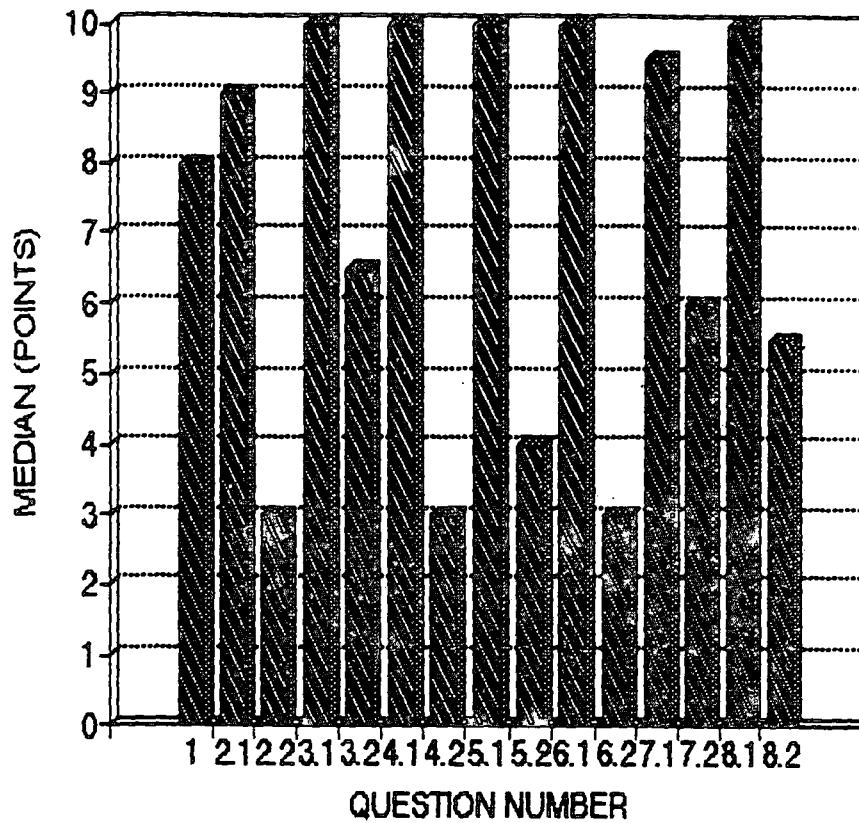


FIGURE 2 : PATIENT'S LEVEL OF SATISFACTION BEFORE AND AFTER TREATMENT

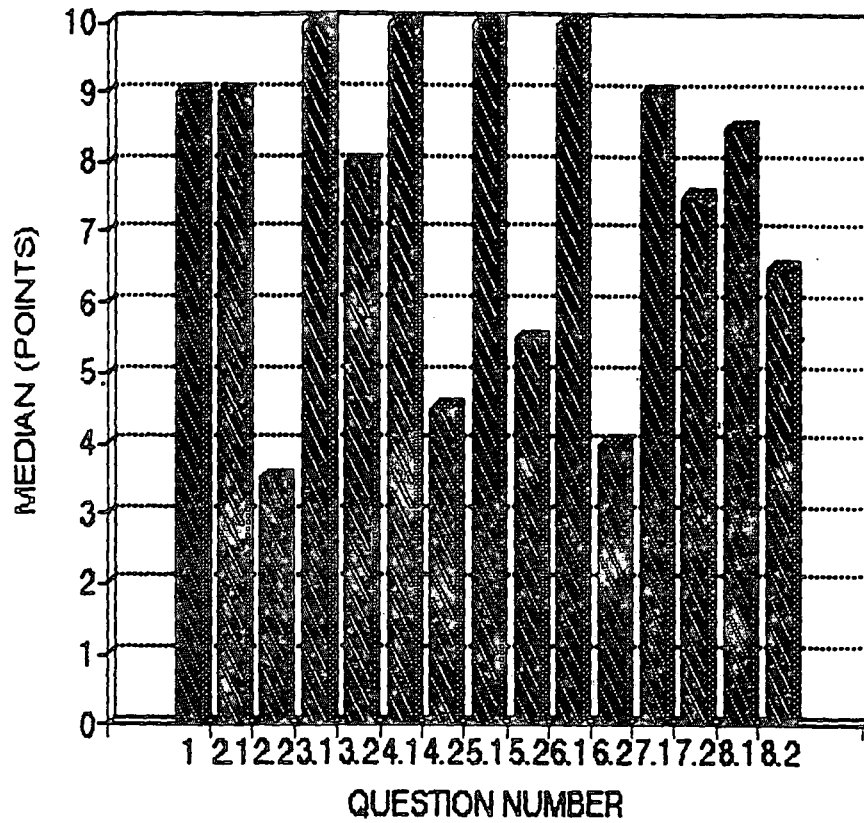
NB. 9 patients showed greater level of satisfaction (improvement) after treatment ; 7 reported a decrease (deterioration) and 4 remained unchanged.



+-----+
 | BEFORE TREATMENT |
 +-----+

FIGURE 3a : MEDIAN OF EACH QUESTION

NB. A high median is favourable , low median is unfavourable , 11 questions had high medians (i.e. > 5) while four had low medians (<5)



+-----+
 | AFTER TREATMENT |
 +-----+

FIGURE 3b : MEDIAN OF EACH QUESTION

NB. A high median is favourable ; low median is unfavourable , 12 questions had high medians (> 5) ; 3 had low medians (< 5)

CHAPTER 5 : DISCUSSION

The first section of the discussion involves a detailed interpretation of the results.

For the right eye, the retinoscopy median remained constant at (-)2,125D for the first 5 appointments. Please note that the negative sign merely indicates myopia and therefore appears in brackets. At the sixth appointment it decreased to (-)1,875 D which is a positive change (decrease of the retinoscopy towards zero indicates improvement in myopia). At the seventh appointment, the retinoscopy increased to (-)2D. This is a slight deterioration but it is still lower than the initial reading of (-)2,125D, which indicates overall improvement for the right eye.

A retinoscopy median of (-)2,375D was recorded for the left eye at the first 3 appointments. The next 3 appointments revealed a median of (-)2,25D (once again a decrease in retinoscopy which is what is required). At the seventh appointment, the retinoscopy increased back to the original (-)2,375D.

Figures 1A and 1B clearly illustrates these changes in retinoscopy.

Figure 2 shows the total points obtained in the questionnaire (ie. the patients level of satisfaction) before and after treatment. The higher the score, the greater the level of satisfaction. A careful analysis of the graph shows that 9

patients reported a greater level of satisfaction after treatment. Seven reported a decrease and 4 remained unchanged.

Vertical bar graphs indicating the median of each question before and after treatment are shown in figures 3a and 3b. A higher median indicates a higher level of satisfaction. After treatment, a higher median was recorded for 8 questions. A lower median for 2 questions and an unchanged median for 5 questions.

The results thus far indicate that *Physostigma venenosum* could have some effect on myopia.

The only journal article available on the Homoeopathic treatment of myopia was by Basu (1980). In the sample of 45 patients excellent improvement was seen in 35 cases, moderate improvement in 7 cases and slight improvement in 3 cases. He concludes his paper by stating that the myopia was probably related to depressed sympathetic energy rather than stimulation of a nerve of the cranio-spinal axis. He also says that the direct effect of *Physostigma venenosum* either on the ciliary muscles or on the parasympathetic nerve cannot be excluded at present. Further investigations are required to clarify these results.

Overall, the results obtained by Basu (1980) were better than that of this research project. Therefore it is important to compare the 2 projects in order to identify the factor (s) responsible for the difference.

Firstly in Basu (1980) the Physostigma venenosum was prepared according to the Korsakovian method ie. distilled water is used, the same beaker is used to prepare successive potencies and accurate measurements are not taken. In this dissertation the Physostigma venenosum was prepared according to the Hahnemannian method ie. 70 % alcohol is used; a different beaker is used to prepare successive potencies and accurate measurements are taken. The potencies used were 5CH, 7CH, 9CH, 15CH and 30 CH. The 5CH potency is equivalent to 30K, 7CH to 200K, 9CH to 1000K and 15CH to 10 000K. Basu (1980) used the Korsakovian potencies mentioned above. The Korsakovian potency differs from a Hahnemannian one in that it has a deeper action but is more gentle. (Gaier 1991.)

Secondly, the treatment period was different in the 2 projects. Basu (1980) treated his patients on the first 3 days, 40th to 42nd days, 85th to 87th days and 130th to 132nd days. In this dissertation patients took medication only once a week for the 5CH, 7CH and 9CH potencies, once every 2 weeks for the 15CH and only 1 dose of 30 CH. The difference in the posology may have influenced the action of the Physostigma venenosum.

Thirdly, the age of the patient may have played some role in the prognosis of the myopia. Usually, myopia increases steadily until normal growth stops ie. about 20 years. Therefore it is possible that the myopia has stabilized in patients over 20 years.

These important factors should therefore be considered in detail in future studies of myopia.

Using interpretations reported, each hypothesis will be discussed. Regarding hypothesis 1 (ie. the patients' perceptions of the treatment will be positive) : 9 patients reported a greater level of satisfaction after treatment. This is 45 % of the sample. Admitted it is not an excellent result but it still supports the hypothesis.

As far as hypothesis 2 is concerned (ie. the prognosis of the myopia following treatment will be good) : the retinoscopy median for the right and left eyes decreased during treatment (indicating an improvement in myopia). However, whilst the retinoscopy median of the left eye reverted to the original the right eye appeared to have stabilized at the improved state. This substantiates the hypothesis.

With hypothesis 3 (ie. the patients expectations of the treatment will be met and Physostigma venenosum will be effective as a Homeopathic treatment of myopia) some degree of success was reported but there is still much room for improvement. This also applies to hypotheses 1 and 2.

CHAPTER 6 : CONCLUSIONS AND RECOMMENDATIONS

From the discussion in the previous chapter, it may be concluded that Physostigma venenosum (in potency) has an effect on myopia. The results of this project are encouraging and indicates that Physostigma venenosum has the potential to be used as an effective means of treating myopia. The excellent improvement in myopia reported by Basu (1980) further underscores this. However more studies are required to explore all avenues involved in the Homeopathic treatment of myopia. For example the use of Hahnemannian and Korsakovian methods of preparing the remedy. This was a major difference between this project and the study by Basu (1980) and may account for the variation in results. A later study involving two groups:

One taking Physostigma venenosum prepared according to the Hahnemannian method and the other taking the same remedy prepared according to the Korsakovian method may help to clarify this theory.

The effect of the different potencies (eg. 5CH, 7CH, 9CH) also needs to be investigated fully. A good idea would be to have several groups each taking only one specific potency. In this way it would be possible to isolate the potency with the most positive influence. Experiments on different treatment periods will yield interesting and useful information. For example, how much of medication to take, how often to take it and over what period of time. In this regard, long term studies are recommended in order to monitor changes and determine the stability of the results.

Other Homoeopathic remedies should also be tested for their influence on myopia. However, the principles of Homoeopathy (ie. the Law of Similars) should not be forgotten. According to this law, the remedy required by the patient is that which has a pathogenesis that exactly fits the set of symptoms occurring in the patient. In this way the individuality of each patient is considered ie. each patient receives his simillimum (remedy specific for him). The effect of treating a myopic patient with his simillimum plus a remedy specific for myopia should be compared to treating the patient with only one specific remedy for myopia. In this project the myopia improved then deteriorated. This could indicate that Physostigma venenosum was close enough to initiate cure but an additional remedy may be required for complete recovery.

The results of this project may not be conclusive but it definately contributes to the pool of scientific knowledge which is the purpose of research.

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TECHNIKON NATAL : DEPARTMENT OF HOMOEOPATHY

PROJECT : The treatment of myopia (shortsightedness)

QUESTIONNAIRE ON LEVEL OF SATISFACTION

Instructions

1. Please answer all the questions.
2. Read each question carefully, then answer by circling the appropriate number.
3. Answer questions honestly.
4. This information is strictly confidential.

Thank you for your co-operation.

NAME :

DATE :

PLEASE RANK YOUR ANSWERS ON THE SCALE FROM ZERO TO TEN.

1. HOW DO YOU FEEL IN GENERAL ?

POOR EXCELLENT
0 1 2 3 4 5 6 7 8 9 10

2. HOW WELL DO YOU OBSERVE DISTANT OBJECTS (eg. television) ?

a) with glasses : POOR EXCELLENT
0 1 2 3 4 5 6 7 8 9 10

b) without glasses : POOR EXCELLENT
0 1 2 3 4 5 6 7 8 9 10

3. HOW WELL DO YOU OBSERVE NEAR OBJECTS (eg. reading a book)?

a) with glasses : POOR EXCELLENT
0 1 2 3 4 5 6 7 8 9 10

b) without glasses : POOR EXCELLENT
0 1 2 3 4 5 6 7 8 9 10

4. HOW MUCH DO YOU SQUINT WHEN LOOKING AT DISTANT OBJECTS (eg. television) ?

a) with glasses : SEVERE NONE
0 1 2 3 4 5 6 7 8 9 10

b) without glasses : SEVERE NONE
0 1 2 3 4 5 6 7 8 9 10

5. HOW MUCH CLOSER TO YOU DO YOU HAVE TO MOVE AN OBJECT (eg. a book) TO SEE IT CLEARLY ?

a) with glasses : MOVE IT DON'T MOVE
MUCH CLOSER IT AT ALL
0 1 2 3 4 5 6 7 8 9 10

b) without glasses : MOVE IT DON'T MOVE
MUCH CLOSER IT AT ALL
0 1 2 3 4 5 6 7 8 9 10

6. HOW MUCH CLOSER DO YOU HAVE TO MOVE TO AN OBJECT (eg. television) TO SEE IT CLEARLY ?

a) with glasses : MOVE
MUCH CLOSER
0 1 2 3 4 5 6 7 8 9 10
DON'T MOVE
AT ALL

b) without glasses : MOVE
MUCH CLOSER
0 1 2 3 4 5 6 7 8 9 10
DON'T MOVE
AT ALL

7. HOW SEVERE HEADACHES DO YOU GET DUE TO EYE STRAIN
(eg. prolonged reading, watching television) ?

a) with glasses : SEVERE
0 1 2 3 4 5 6 7 8 9 10
NONE

b) without glasses : SEVERE
0 1 2 3 4 5 6 7 8 9 10
NONE

8. HOW MUCH DOES LIGHT HURT YOUR EYES ?

a) with glasses : SEVERELY
0 1 2 3 4 5 6 7 8 9 10
NONE

b) without glasses : SEVERELY
0 1 2 3 4 5 6 7 8 9 10
NONE