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Effectiveness of acupressure therapy in improving attention and memory among attention deficit children

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Abstract

A Pre-experimental one group pre-test post-test approach was adopted in the study. The population consisted of school children of Age 6-12 of different schools of Indore were selected as sample for the study. A sample size of 30 school children were selected by using purposive sampling technique. A standardised tool (Auditory Memory Verbal Testing) was used and reliability of the tool was found to be significant.

After Pilot study final study was conducted on 30 school children of Age 6-12 Years in selected schools of Indore. Acupressure therapy at GV-20 Point was given for 5 minutes for 30 days.

Findings revealed that the mean pre test Verbal memory test score was 14.93 and post test Verbal memory test score was 31.56. And the computed 't' (11.8) value showed that there was significant difference in post mean verbal memory test.

The mean pre test forward and backward digiting score was 30.7 and post test forward and backward digiting score was 33.2. And the computed 't' (2.45) value showed that there was significant difference in post mean forward and backward digiting level scores. Thus the study concluded that acupressure therapy is effective in increasing attention and memory among ADD children.

Keywords: Acupressure therapy, children, ADD, Auditory memory verbal testing

Introduction

Low concentration levels are a common problem amongst children these days. More and more children are suffering attention disorder, where they find it difficult to focus on a single thing, for too long time. This creates a problem, especially where studies are concerned. However, developing and improving the concentration of a child is not an impossible task Kussmaul (1887, cited in Kolb & Whishaw, 1990) [1].

The study explored the cognitive and behavioural profiles of children with working memory impairments. In an initial screening of 3,189 five- to eleven-year-olds, 308 were identified as having very low working memory scores. The majority of the children struggled in the learning measures and verbal ability. They also obtained a typically high ratings of cognitive problems/inattentive symptoms and were judged to have short attention spans, high levels of distractibility, problems in monitoring the quality of their work, and difficulties in generating new solutions to problems Tracy Packiam Alloway, Susan Elizabeth Gathercole, Hannah Kirkwood, Julian Elliott (2009) [2].

Need of the Study

Problems with memory loss can occur at any age, although due to increased fragility and vulnerability in age, and show more severe symptoms of memory loss if not prevented or treated by nutritional rebalancing. Symptoms of alertness, orientation, memory and attention may seem to malfunction or become more difficult to perform with total confidence. Statistics shows 40-70% of people affected with various cognitive problems, on average 1 out of 10 people have serious memory loss problems (Warren & Mathew, 2011) [3].

Memory impairments in childhood can have negative consequences for the development of language, literacy, social skills, personal relationships, and a sense of personal history (Rankin and Hood 2005) [4]. Additionally, childhood memory impairments often impede academic performance, particularly arithmetic (Hitch and McAuley 1991) [5]

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and can result in secondary deficits such as low self-esteem (Alloway *et al.* 2009) [6]. However, interventions during development have the potential to improve memory performance, and can have positive impacts on related cognitive skills.

During school visit, researcher found that most of the children face problem due to lack of attention in class, the students always complain of not remembering the things and feel irritated, sleepiness, headache and thus result in scholastic backwardness. This is a major concern for students as well as for the parents. Different studies have been conducted to improve memory and concentration among the attention deficit children through different creative program, aerobic exercises, puzzling question, memory game, diet therapies, but most of them are not appropriate for low socio economic samples. During clinical experience, researcher felt the need to implement an intervention to improve attention as well as memory which is cost effective and non invasive too which can be widely used by everyone in various settings. Acupressure therapy is an easy method to improve memory and can be done by anybody under proper supervision. Thus, this study was undertaken which had a significant implication on improving memory and children are able to recall the information for a longer period without any side effects.

Statement of the Problem

“A Pre experimental study to assess the effect of acupressure therapy at G V- 20 on improving the attention and memory among attention deficit children at selected school of Indore in the year 2012-2013”

Objectives

- To assess the level of attention and memory among attention deficit children before acupressure therapy.
- To assess the level of attention and memory among attention deficit children after acupressure therapy.
- To evaluate the effectiveness of acupressure therapy in improving the attention and memory with verbal memory test.
- To evaluate the effectiveness of acupressure therapy in improving the attention and memory with forward digitizing and backward digitizing.
- To compare the attention and memory level before and after acupressure therapy.

Hypothesis

H₁: There is a significant difference in attention and memory level after the acupressure therapy at the level $p \leq 0.05$

Conceptual Framework

In this study researcher used acupressure therapy based on traditional Chinese medicine theory. Figure 1 (Pg- 9)

Research Methodology

The study adopted one group pre-test post-test design. The population comprised of 30 school children of age 6-12 years of selected schools of Indore. A purposive sampling technique was used to select the samples fulfilling the inclusion and exclusion criteria.

Tools used in the study were:

Socio demographic variable (10 items)

Auditory memory verbal testing developed by Shobini L. Rao, B.A. Chandramaul

Validity and Reliability

The tool was validated by 7 experts in paediatric nursing, paediatric medicine psychology, and psychiatry.

Pilot Study

The pilot study was conducted from 02.01.13-31.01.13 in M.G.M School, Khajrana, and Indore on 6 samples. The paired ‘t’ test was done for finding the effectiveness of acupressure therapy on improving the attention and memory. Pre and Post test was done. For Verbal memory test, that mean post-test verbal memory test score 31.83 is higher than mean pre-test verbal memory test score 17.16. Calculated mean difference was 14.67 and SD was 7.284 computed ‘t’ value ($t_{29} = 4.93$) which was highly significant at $P \leq 0.01$ level. Thus there is a significant effectiveness in acupressure therapy for improvement of attention and memory, for the mean post-test Forward and backward digitizing score 46.33 is higher than mean pre-test forward and backward digitizing score 22. Calculated mean difference was 24.33 and SD was 25.80. computed ‘t’ value ($t_{29} = 2.31$) which was significant at $P \leq 0.05$ level. Thus there is a significant effectiveness in acupressure therapy for improvement of attention and memory. After 4 weeks of acupressure therapy among 6 children, the study concluded that acupressure therapy is effective in increasing attention and memory among attention deficit children.

The analysis for the pilot study revealed that, there is significant difference in pre test and post test level of attention and memory, among school children suffering with ADD. Thus, objectives of the study could be fulfilled. Based on this information, the investigator proceeded with the actual data collection for the main study.

Main Study

The actual data collection period was from 8th March to 8th April 2013 in Bright Senior Secondary school Indore

Findings

The data was analysed according to the objectives of the study using descriptive and inferential statistics.

Section I: Sociodemographic Variables

Table 1(a), 1(b), 1(c)

Section II: Effectiveness of Acupressure Therapy

Table 2(a), 2(b)

Table 2(a) shows that mean post-test verbal memory test score 31.56 is higher than mean pre-test verbal memory test score 14.93 (figure 14). Calculated mean difference was 16.6 and SD was 7.66 computed ‘t’ value ($t_{29} = 11.8$) which was significant at $P \leq 0.001$ level. Result shows statistically significance in acupressure therapy for improvement of attention and memory among attention deficit children

Table 2(b) shows that mean post-test forward digitizing and backward digitizing score 33.2 is higher than mean pre-test verbal memory test score 30.7 (figure). Calculated mean difference was 2.5 and SD was 5.63 computed ‘t’ value ($t_{29} = 2.45$) which was significant at $P \leq 0.05$ level. Result shows statistically significance in acupressure therapy for improvement of attention and memory among attention deficit children

Section III: Comparison of Pre and Post Test Verbal Memory Score and Forward and Backward digiting Table 3(a), 3(b)

Table 3(a) shows before acupressure therapy 20 students i.e. more than $\frac{3}{4}$ in the category of poor and 10 were in average category but after post acupressure therapy 18 i.e. more than $\frac{1}{2}$ were in good category and 12 i.e. more than $\frac{1}{4}$ were in average category.

Table 3(b) Table 3(b) shows before acupressure therapy 19 students i.e. more than $\frac{3}{4}$ in the category of poor and 11 i.e. more than $\frac{1}{4}$ were in average category but after post acupressure therapy 6 i.e. $\frac{1}{4}$ were in good category and 24 i.e. more than $\frac{3}{4}$ were in average category.

Section IV: Individual Pre and Post Test score

Table 4(a) depicts individual pre and post test verbal memory test, forward and backward digiting score of children. Post test shows shifting of score from pre test hence can say that acupressure therapy was effective.

Discussion & Conclusion

Effectiveness of acupressure therapy on improving attention and memory among attention deficit children

Level of Attention and memory of attention deficit children were checked before and after acupressure therapy. Findings of the study revealed that, for the verbal memory test, mean post-test score 31.56 which is higher than mean pre-test score 14.93. Calculated mean difference was 16.63 and SD was 7.66 Computed 't' value ($t_{29} = 11.8$) which was highly significant at $P < 0.001$ level. Thus there is a significant effectiveness in verbal memory test doing for improvement of attention and memory among attention deficit children. For the Forward and backward digiting, mean post-test score 33.2 is higher than mean pre-test score 30.7. Calculated mean difference was 2.5 and SD was 5.63. Computed 't' value ($t_{29} = 2.45$) which was significant at $P < 0.05$ level. Thus there is a significant effectiveness in doing acupressure therapy for improvement of attention and memory. So the study found out that, there is significant difference in attention and memory among attention deficit children at the level $p \leq 0.05$ and hence research hypothesis 1 is accepted.

Above findings can be supported from an experimental study by Debra Mundell (2011) [7] at weegy as expert telework 09, Italy to assess the effects of GV-20 acupressure on increasing attention and memory among ADD. The study aims to evaluate the effects of Baihui (GV-20) acupressure in increasing the memory and concentration. 40 participants with low memory were assigned to either the acupressure group (n = 19) or the control group (n = 21). The acupressure group received 1 min of GV-20 acupressure during the initial intervention session and was taught to perform the technique for them to do twice a day. Inferential and descriptive statistics was used. There was a statistically significant increase in memory and concentration level for ($p = 0.003$) after the 1min of GV-20 acupressure for 20 days. GV-20 acupressure has an immediate increase in memory and concentration. Moreover, acupressure applied to the GV-20 acupoint for 3 consecutive months was effective in increasing the memory

and concentration level. The Study concluded that acupressure is effective for increasing attention and memory.

Conclusions

The present study attempted to find out the efficacy of acupressure therapy in improving the attention and memory among ADD children. The sample consisted of 30 attention deficit children. The tool used was questionnaire for getting socio demographic data and auditory memory verbal testing for measuring the pre and post interventional score. Acupressure therapy was given for 5 minutes for 4 weeks. The results were analyzed in terms of the scoring differences seen in the level of attention and memory after acupressure therapy Results showed that there was a significant improvement in the attention and memory after acupressure therapy.

So the present study concludes that acupressure therapy is a very useful method in improving attention and memory among ADD children if done regularly as per proper instruction. It is economical as well as free of side effects but requires self- responsibility from the part of participant.

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